SMALLHOLDER AGRICULTURE AS

A RURAL DEVELOPMENT STRATEGY:

THE CASE OF MALAWI

By

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Currency Unit

Malawi Kwacha (MK.) =   100 Tambala (t)

MK = US $1.15 = £0.63 Sterling.
   (as at 16/5/78)

NB. The Malawi Kwacha was devalued by 15% towards the end of 1982.

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of peasant agriculture. This interest which is partly due to
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S U M M A R Y

It is widely agreed that the growth strategy pursued in most of
the developing countries during the 1950s and 1960s, resulted in
a development pattern whereby most of the rural masses did ʔ
not share in the benefits of the development effort. The 1970s
was therefore the decade during which many developing countries
undertook rural development efforts, largely with the help of
the World Bank and other donor agencies, in an attempt to bring
the benefits of economic development to the rural poor. Small-
holder agricultural development has been the commonest strategy
undertaken by most of the developing countries (especially in
sub-Saharan Africa), to achieve this objective.

This study looks at the extent to which the smallholder
agricultural development effort has succeeded in improving the
incomes of the smallholder population in Malawi. The study
focuses its attention on analysing the innovation adoption
pattern which has emerged in the Lilongwe Land Development
Progamme (a poineering experiment in integrated rural development
in sub-Saharan Africa). In particular,it looks at the factors
that are associated with the adoption of productivity raising
innovations, by examining the characteristics that are associated
with innovation adopters in the area. This is done by building
a model of household typologies, based on the observed adoption
behaviour.

The findings from the study indicated that for a smallholder
agricultural development strategy to succeed in reducing rural
poverty, it must be in accord with other national policies. In
addition; the productivity raising innovations must be able to
reach the poor households. This necessitates a careful analysis
of the constraints faced by the poor households so that appropriate
innovation packages can be designed for them.

It was observed for example, that in the situation under
review, female headed households were seen not to adopt most of the package
offered by the project. The distribution of inputs on credit did not
improve the situation due largely to the credit rating criteria
which rendered such households' credit risks, and also the stipula -
tion of minimum packages, which in most cases proved to be beyond

the labour and financial resources of most of the poor households.
More important,,the study indicated that those households that
did not adopt innovations tended to rely largely on non-farm
sources of income (such as petty trading, beer brewing and wage
labour) not only to improve their household income positions but
even to meet subsistent needs, suggesting that the smallholder
development effort was not particularly meeting their needs.
This suggested the need for a search for other means of impro-
ving the incomes of such households, to supplement the smallholder
development effort.

CHAPTER I

INTRODUCTION

Malawi, with an annual per capita income of US $200 (mid 1977),[1] is classified as one of the least developed countries in the world. Like most other developing countries in her category, she is characterised by low productivity (both land and labour) in the most predominant sector, the rural sector, where small scale farming is the leading economic activity. Over 90% of the rural population depends on peasant farming for its livelihood.[2] A sample survey of agricultural holdings conducted in 1968/69 reported that the annual incomes of about 80% of the smallholder households were below K40 (about US $45) and a substantial proportion of this income came from the farm.[3] Such evidence indicates that rural poverty (using the World Bank poverty line of US $60 per capita, quoted by Ghai and Radwan),[4] was quite a serious problem in the country. Thus one of Malawi's development priorities was, and still is, to raise peasant productivities. The country has opted to achieve this objective within a smallholder context. Thus the development of smallholder agriculture has become a central element in the country's rural development progamme (see Statement of Development Policies, op. cit., p.1)

Because smallholder agricultural production in the country is basically subsistence oriented, the main problem which the smallholder development effort is trying to solve is "how to develop subsistence farmers".

The approach adopted in this study is to examine the impact of a smallholder agricultural development strategy on the reduction of rural poverty, by looking at what has been achieved so far in the field of smallholder agriculture in the country (with particular reference to the Lilongwe Land Development Programme-LLDP), and what this has meant in terms

of overall rural development. At the same time the theoretical basis of smallholder agricultural development will be examined to see how it relates to the broad objectives of rural development.

1. STUDY METHODOLOGY

In order to investigate the impact of the smallholder development effort on rural poverty, the approach is to explore the main factors that are causally linked with raising small scale agricultural productivity (in the Malawian context) and the conditions under which increased smallholder productivity can reduce rural poverty. The investigation focuses on the examination of the characteristics of subsistence farmers, which are critical from the stand point of causality, to a movement into greater productivity and commercialization, as Mosher (1966) put it.[5] This required collecting data from the Malawian smallholder sector that would facilitate:

(a) The diagnosis of the problem of low output levels on the Malawian small scale farms.

(b) An assessment of the impact which the smallholder development effort has had so far on the income levels of small scale farmers- especially the poorest section of the rural community.

The data collected is used to build models of the rural economy to try to explain interhousehold differences in income levels. A number of interrelated hypotheses concerning total household income (within the agricultural smallholding community in LLDP) are formulated and tested against the evidence provided by the data.

2. HYPOTHESES TO BE TESTED.

In analysing interhousehold differences in incomes among the survey population, emphasis will be placed on the household's ability to adopt the various innovations introduced in LLDP. After a decade or so of the smallholder development effort in the area, the emerging evidence tends to indicate that a

substantial proportion of the households in the area (about 30%)
appear not to have adopted the innovations.[6] A closer investi-
gation indicates that the non innovators are closely associated
with small cultivated areas, an aspect which is consistent with
observations in other parts of the world.[7] However, it is
argued here that while differential access to farm land , due
to restrictive tenurial arrangements, may offer a plausible
explanation of why there is a close link between farm size and
adoption behaviour in such places as Asia or Latin America, the
universal access to farm land in Malawi tends to invalidate
this possibility.[8] The main stand taken in this study on
this issue is that , while farm size correlates with adoption
behaviour , such a correlation does not necessarily imply
causality. Because in the situation under review farm
size represents the total amount of land which a household
is able to cultivate, and not merely the amount of land under
its disposal, as is usually the case in the Asian or Latin
American cases, it is factors other than land availability per se ,
which play a crucial role in determining innovation adoption and
therefore total farm and household incomes. This study proposes
a number of such interrelated factors. A number of hypotheses
intended to explore these interrelationships are listed below.
In chapters V and VI, these are either confirmed or discarded
according to the evidence provided by the survey data.

1. a) A household's level of total revenue from sale of crops
       is likely to be closely associated with the type of crop
       enterprise undertaken (ie. adoption or non - adoption of
       the innovations offered by the project).

1. b) Adoption of the innovations offered is likely to be
       closely associated with a household's access to seasonal
       credit.

1. c) A household's access to seasonal credit is closely
       associated with its cultivated area.

2. a) Total farm income is closely associated with the size
of the cultivated area.

2. b) For a peasant household solely dependent upon family
labour (for agricultural work), the size of its
cultivated area is closely associated with the number
of family workers available to it (measured in adult
equivalents).

2. c) A household's cultivated area is likely to be related
to the household's ability to hire labour (measured by
total expenditure on hired labour).

2. d) The household's ability to hire labour is closely related
to the household's access to non-farm income earning
opportunities (measured by total non-farm receipts).

3. Cash purchases of inputs are likely to be associated
with a household's level of non-farm income.

SUMMARY AND OUTLINE

The main message coming from this study is that there is
a great need for a proper diagnosis of the problems facing a
particular group of smallholder farmers before any steps are
taken to rectify the situation. The study tries to point out,
using Malawian evidence, both from colonial and post - colonial
times, how an improper or incomplete evaluation of the problem
can lead to designing policies which may actually worsen the
situation. The study particularly emphasizes that labour
requirements of small scale farming in Malawi (and this could
be generalised to other countries in Sub-Saharan Africa) have
not been fully appreciated. It is generally assumed that
smallholder households, because of their emphasis on subsistence

production have surplus family labour which can be usefully utilised in the production of cash crops, and hence integrate the households into the market economy.[9] This assumption is reflected in the fact that the innovation packages are usually designed on the basis that families have enough family labour to cope with them.

However, evidence indicates that while the households may possess surplus labour on an annual basis, due to the sharp seasonality of the particular farming system (rain fed agriculture), many households actually suffer from labour shortages during the peak season.[10] It is actually these peak labour demands which are the main constraints to many smallholder households' farming activities in general, and innovation adoption in particular.[11]

The majority of innovations introduced in the Malawian small-scale agriculture (this also applies to African agriculture in general), are of the seed technology type. There is ample evidence which indicates that these are usually more labour intensive than the traditional crops they replace.[12] One puzzle associated with seed technology is that in the Asian sub-continent they have been seen to improve smallholder productivities quite substantially while in Africa, generally, their results have tended to be disappointing.[13] It is often overlooked that expansion of seed technology in Asia was largely accompanied by irrigation development (such as the expansion of the tubewell program in Pakistan)[14] What this irrigation appears to have done was to have raised productivity and at the same time reduced the risk often associated with rain fed agriculture, so that returns to labour were higher and more secure. In addition, irrigation seems to have introduced an element of flexibility in the crop labour demands. That is , although the new crops required more labour say per hectare, the irrigation facility meant that the household could reasonably cope with the extra labour demands by regulating the rate at which the field is flooded, to match with its labour supply,

an aspect which is impossible' with rain fed agriculture, which
predominates in Sub-Saharan Africa. Thus seed technology in
Africa has invariably meant higher risks as most of these new
crops tend to have specific environmental and input requirements,
as well as higher labour demands on the peasant households.
Unfortunately, because of the implied assumption of surplus
labour in peasant agriculture, experimentation with the new seeds
has been largely restricted to yield studies, soil conditions,
etc. Even in LLDP, where the introduction of seed technology
(improved maize and groundnut seeds) form the backbone of the
smallholder development strategy, labour requirement considerations
do not seem to feature prominently in the designing of innovation
packages.

The evidence that seed technology is relatively more
labour intensive , implies that for its adoption to be widely
based, it must be accompanied by some form of controlling
labour demands, to match them with family labour supplies, or
by the introduction of labour saving technology.[16] Results from
this study tend to indicate that the use of labour saving tech-
nology is very low in LLDP despite the apparent labour bottle-
necks. It appears that the option of labour saving technology
is largely frustrated by the extractive pricing policy pursued
by the state marketing agency in charge of purchasing smallholder
crops (ADMARC), which is a common phenomenon of African small-
holder crop marketing systems,, which tend to make investment
in smallholder agriculture unprofitable, and also by the
unavailability of appropriate technology.

It is therefore not surprising to see that the adoption
of seed technology in the African context has been largely
associated with increasing labour hiring and/or large family
work forces. Even the provision of input credit has not
succeeded in inducing a broad based adoption of innovations.
This thesis proposes two main reasons for this failure. The
first is that inputs are assumed to be the only serious
constraint among the small scale farmers and not labour. As
a result emphasis has been placed on providing input credit only
with the consequence that only those households for whom the
above assumption holds, have benefited from the credit package.

In the second place, allocation of credit is based on the
"ability to repay" criterion, ie. the ability to produce
a marketable surplus over and above family subsistence needs,
which is also closely associated with the amount of labour
available to the household (translated through the size of the
cultivated area).

The consequence of this oversight regarding the labour
availability problem is the fostering of an adoption pattern
that depends on labour hiring, which in the absence of proper
rural wages monitoring, is likely to lead to more rural
differentiation as the richer and more progressive farmers will
tend to hire the smaller and poorer farmers, with the likely
consequence that the latter group will be "crowded out" of
cash crop production, and probably leading to increasing land-
lessness among the rural community. Although this is likely
to happen sooner or later, given the fast population growth
in the country and the rising pressure on the land, it appears
that its emergence could be slowed down(while appropriate
solutions are being sought to deal with it when it finally
arrives) by trying to achieve a widely based adoption pattern.
It appears that the achievement of a broadly based adoption
pattern is prevented by lack of adequate information on the
part of planners regarding the exact developmental needs of
the various typologies of smallholder households.

This study therefore attempts to make two major contri-
butions to the study of small scale agricultural development.
The first contribution lies in the emphasizing the need for a
more carefull analysis of the factors associated with innovation
adoption and the need to investigate their interrelationships
so as to enable us to isolate those factors that are merely
associated with innovation adoption from those that are causally
linked with it.   The second, and most important contribution
comes from the survey findings which have indicated that in LLDP
(and this could be extended to other areas in rural Malawi),
female headed households (which comprised about 16% of the
sample), have been largely by-passed by the smallholder

agricultural development effort. The main reason for this
appears to be the deficiency in the family labour resource
associated with this group of households. This has led to
smaller cultivated areas and consequently restricted their
access to input credit. As a result these households tend
to increasingly rely on non-farm sources of income. But,
because of limited non-farm income earning opportunities in
the rural areas, the tendency for these households has been to
hire themselves out to the "innovating " households, with the
consequence that their labour problems are made worse, making
their dependence on wage labour more or less a permanent
phenomenon.

The study therefore argues that more insights into the
characteristics of the rural population (such as resource
constraints, sociological factors , etc.), would be gained if
the households were disaggregated into some form of typologies
based on one criterion or the other, rather than relying on
aggregate attributes of the entire beneficiary group. In this
way , it would be possible to design a range of innovation
packages that would cater for the needs of the various typologies.
In addition, it is likely that the limitations of a smallholder
development strategy as an overall means for alleviating rural
poverty, will be revealed, by indicating those groups who for
one reason or the other , cannot participate directly as farm
operators, such as the landless and near landless households.
As a result it will be possible to direct the attention of
planners towards more appropriate remedies for such households,
such as rural employment creation programmes.

The study is divided into two parts. The first part
which incorporates chapters II and III, looks at Malawi's small-
holder agricultural development problem in a historical context,
while the second part, comprising chapters IV to VI, is largely
devoted to an examination of the smallholder agricultural deve-
lopment effort in LLDP, as a case study.

In chapter II, Malawi's smallholder development strategy is
placed in a historical perspective, by looking at the country's
resources, which seem to dictate the need for an emphasis on
small scale agricultural development. This is followed by an
examination of the damage done to smallholder development
prospects by the colonial agricultural policy which emphasized
the encouraging of settler agriculture, and later attempts to
rectify the situation. Chapter III focuses on the current rural
development strategy in Malawi and how it relates to the overall
agricultural development programme (both estate and smallholder
development). The main conclusion emerging from this chapter is
that it appears that estate agriculture, despite the damaging
effect which it is seen to have had on smallholder agricultural
development prospects during the colonial era, has continued to
receive disproportional attention in post-colonial times. At
the same time, efforts at smallholder agricultural development
have tended not to be broadly based. A National Rural Develop-
ment Programme has been launched (since 1976/77) to try tò
initiate broad based smallholder agricultural development, but
has not attempted to alter the balance between estate and small-
holder development, thereby watering down its effect as a sectoral
corrective mechanism.

Chapter IV looks at a specific case of smallholder agricul-
tural development in the country. The aims and objectives of
the development effort are analysed in the light of prevailing
conditions in the area. The main conclusion emerging from this
chapter is that labour availability appears to be a more crucial
factor in innovation adoption in the area than is generally
recognised. Chapters V and VI attempt a micro-level analysis of
innovation 'behaviour, with the help of survey data collected
in LLDP. In chapter V, the survey data are described, and a
number of hypotheses to explain the observed pattern of innovation
adoption are examined. In chapter VI, a more penetrating
analysis of the survey data is undertaken, and the hypotheses
developed in the previous chapter tested against the evidence
provided by the survey data. Chapter VII, offers a summary
of the main findings of the whole study, and some policy

prescriptions regarding broadly based innovation adoption as
well as alternative and additional measures of reducing rural
poverty.

Notes - Chapter I

1. World Bank (1981a), <u>World Bank Report, 1981</u>; Washington,
    Table 1, p. 134.

2. Malawi, <u>Statement of Development Policies, 1971-80</u>;
    Government Press, Zomba, 1971,p. 1.

3. Malawi, <u>National Sample Survey of Agriculture,1968/69</u>;
    National Statistical Office, Zomba, 1970, Tables R6.11-
    R6.12.

4. See , Ghai, D. and Radwan, S. (ILO, 1980), " Growth and
    Inequality: Rural Development in Malawi, 1964-1978",
    <u>World Employment Research Programme, Working Papers</u>,
    Geneva, p.15

5. This is the analytical approach advocated by Mosher (1970),
    as the most helpful in terms of revealing those factors that
    are crucial in making subsistence farmers move into commer-
    cial production.   See, Mosher, A.T.(1970), "The Development
    Problems of Subsistence Farmers: A Preliminary Review", in
    Wharton, C.R. Jr.(ed.), <u>Subsistence Agriculture and
    Economic Development</u>, Frank Cass and Co. , London. pp6-11.

6. See, table 5.4a.

7. There is a large body of literature (largely pertaining to
    the experiences in the Asian Sub-Continent) which indicate
    that small farmers, on the whole , lag in their adoption of
    innovations. One of the main reasons for this appears to
    be the way the new technology affects the process of capital
    accumulation among the different farmers, and also the ability
    of the different farmers to take on the risks associated with
    the new innovations." See for example, Blair,H.W.(1978),
    "Rural Development,Class Structure and Bureaucracy in
    Bangladesh", in <u>World Development</u>, vol. 6. number 1,pp65-82;
    World Bank (1981b), "Adoption of Agricultural Innovations
    in Developing Countries: A Survey", <u>World Bank Staff Working
    Paper No. 444</u>, Washington; Ruttan,V.W.(1977), "The Green
    Revolution: Seven Generations", in <u>Internatinal Development
    Review</u>, Vol. 19,No. 4, pp 16-23;and International Rice
    Research Institute(1975), <u>Changes in Rice Farming in
    Selected Areas of Asia</u>; Los Banos, Phillipines.

8. Cohen, J.(1978), for example points out that :
        "foremost among the constraints that hold back smallholder
        innovation and skew the distribution of benefits towards
        the elites are the complex rules and institutions by which
        land is allocated, held, regulated and used."
    He goes on to argue that even where the customary land
    tenure system prevented concentrated ownership and tenancy
    problems, the introduction of modern technology introduced

some tenure systems and problems which prevented
the smallholding majority to acquire production credit or
land to participate fully in the new production techniques.
See, Cohen (1978),"Land Tenure and Rural Development in
Africa", Development and Discussion Paper No.44, Harvard
Institute for International Development, Massachussets. pp.1
and 6. While the present writer agrees with some of the
points raised by Cohen regarding the effects of modern
innovations on customary land tenure arrangements, he still
maintains that in Malawi the basic principle of customary
land allocation (to avoid destitution), accompanied by the
flexibility in the tenure system to re-allocate land among
the families in accordance with changing needs, farm size
as well as adoption of innovations are very much dependent
upon an individual household's ability to cope with the
resulting labour demands. However, this is likely to change
in the direction indicated by Cohen as the pressure on the
land continues without accompanying structural changes in
the economy.

9.   See World Bank (1975a),Rural Development : Sector Policy
      Paper, Washington, p.3

10.   Boesen and Mohele (1979), for example, in their study of
      smallholder production of tobacco in Tanzania, have clearly
      indicated that tobacco growers suffered serious labour
      bottlenecks in the peak season, and that they had to resort
      to labour hiring with the help of cash loans.   When poli-
      tical circumstances closed off the labour hiring option,
      farmers were forced in most cases to alter their land use
      pattern, opting for the relatively less labour demanding
      maize enterprise.   See, Boesen, J. and Mohele, A.T. (1979)
      The "Success Story" of Peasant Tobacco Production in
      Tanzania, Scandinavian Institute of African Studies, Uppsala.

11.   This point is particularly emphasized in Helleiner,G.(1975),
      "Smallholder Decision Making", in Reynolds,L.G.(ed.),
      Agriculture in Development Theory, New Haven and London,
      Yale University Press, pp.27-52.

12.   The World Bank (1981b :10), op.cit., cites evidence from
      a number of studies which indicate that adoption of seed
      technology (eg. high yielding varieties of wheat, or rice,
      etc.), increases seasonal demands for labour so that
      adoption is less attractive for those with limited family
      labour or with little access to hired labour. Among the
      studies cited are: Hicks, W. and Johnston, R. (1974),
      "Population growth and the Adoption of New Technology in
      Taiwanese Agriculture", Columbia: University of Missouri,
      WP in Economics No. E6; Harris, B. (1972), "Innovation
      Adoption in Agriculture - The High Yielding Variety
      Program", Modern Asian Studies No.1, PP71-98.

13   See. World Bank (1981 C), Acclerated Development in Sub-
      Saharan Africa, Washington, P.69.

14. See, Falcon, W.P. and Gotsch, C.H.(1968), "Lessons in
Agricultural Development-Pakistan", in Papanek, G.F.(ed.)
<u>Development Policy, Theory and Practice</u>,Harvard University
Press, Massachussets, pp.269-315.

15. This assumption still prevails in project design despite
the ample evidence cited above which contradicts this
assumption.

16. Adoption of ox-cultivation, for example, has been seen to
be particularly suitable to African agriculture (especially
where ground tilling activities have been found to be
critical). See Gemmill, G.T.(1972), "Economic and Social
Factors in the Diffusion of Farm Mechanization", <u>Mimeo</u>,
East Lansing : Michigan State University; and Weil, P.
(1970), "The Introduction of the Ox-Plough in Central
Gambia", in <u>African Food Production System : Cases and
Theory</u> ,(edited by McLaughlin), Baltimore, Hopkins, cited
in World Bank (1981b), <u>op.cit.</u>, p.4.

CHAPTER   II

A HISTORICAL BACKGROUND TO THE MALAWI ECONOMY

A proper understanding of the reasons behind the success or
failure of a country's development strategy , let alone
its emergence , is impossible without some knowledge of the
political and economic circumstances under which the strategy
developed, and is being pursued.   It is for this reason
that this chapter will be devoted to a brief historical
account of the political and economic developments in Malawi
during the colonial era, and up to , and immediately after
Independence, in order to put the development strategy in
perspective.   However, the objective will not be to provide
detailed history of Malawi, a subject which has been
covered with considerable detail by a number of writers,[1]
but rather to try to answer two main questions; viz:

> (a)   How did the current Malawian agricultural
>   development strategy emerge ?
>
> (b)   What impact has the strategy had so far
>   on rural welfare?

To provide answers to these two questions will require both
an assessment of the economic and political circumstances
pertaining to the Malawi economy,as well as a critical
evaluation of the agricultural development policies pursued
in Malawi todate.

The central theme of this chapter is that three main
factors contributed to the emergence of the particular
agricultural development strategy currently being pursued
in Malawi. These are:

> (i)   The nature of the country's resources.
>
> (ii)   The country's economic and political history.
>
> (iii) The country's development priorities as
>   seen at Independence.

It will be argued that, because of the nature of the country's resources, peasant agriculture offers the largest scope for improving rural wellbeing. However, despite the fact that this has been recognised both in pre- and post-independence times, the country's development record tends to indicate that peasant agriculture has either been largely neglected or relegated to a secondary role, with large-scale (or estate) agriculture getting priority. Consequently , there has been a general lack of a commitment to devise policies particularly appropriate to raising peasant productivity on a broad basis.

1. THE NATURE OF MALAWI'S RESOURCES

A. Natural Resources

(i) Topography

Malawi falls within the East African Rift Valley System. This has resulted in great diversity in topography, which in turn has produced a wide range of relief and elavation, rainfall, climate and soil fertility. The combined effect of all these variations is an agricultural diversity similar to that in Uganda, which ranges through tropical, subtropical and temperate crops, giving Malawi great agricultural potential in a number of crops.[2]

(ii) Land Availability

Malawi, which is completely land locked, has a total land area of 9.4 million hectares, of which 5.3 million hectares (56%) is said to be cultivable.[3] As Pike (1968) has observed, by African standards, Malawi soils are regarded as fertile although their nutrient status shows wide differences.[4] According to a survey carried out in 1968/69, only 1.4 million hectares of the potentially cultivable area (representing 26% of the cultivable land) were under permanent cultivation at the time.[5] This indicates that at Independence the country had great scope for increasing agricultural output through hectarage expansion. However, with the Malawian population

growing at about 3% per year, between 1966 and 1977,[6]
pressure on cultivable land has been mounting , reducing
the scope of hectarage expansion as an option for increasing
agricultural output.   This is shown in table 2.1.

Table 2.1   Population Density, 1966 and 1977

(Persons per square Kilometre)

Region		Year	
	1966	1977	% Rise
Northern	18	24	33.3
Central	41	60	46.3
Southern	65	87	33.8
All Malawi	43	59	37.2

Source: Population Census, 1977

In 1968/69, it was indicated that then, average holding
size (on customary land) was 1.5 hectares, with an average
of 4.6 persons per holding.[7]   Given the rapid population
growth between the two census years , accompanied by the
rapid expansion of the estate sector experienced during the
same period, it is highly likely that most of the cultivable
land has now been brought under permanent cultivation. This
implies that either more and more of the less suitable land
is being brought under cultivation, or that the growing
population is making itself felt through reduced hectarages
per household, or alternatively , through increased rural-
urban migration, or a combination of any of these.

Estimates of the Ministry of Agriculture, Land Husbandry
Section , based on the current land use pattern in the country
(see table 2.2), indicate that by 1983, only in the Northern
Region will there be some arable land still idle.   The Central
and Southern Regions are likely to have exhausted their
potentially arable lands.

Table 2.2 <u>Land Availability and Utilization.</u>

(' 000 hectares)

Region	Total Land	Potential Arable Land	Land Under Cultivation (1977)	Arable Land Still Availa- ble (1977)	Estimated Land Under Cultivation (1983)
Northern	2688.7	994.7	679.8	314.9	822.7
Central	3553.4	1314.6	1196.8	117.8	1448.2
Southern	3170.4	1172.9	1130.8	42.1	1368.4
All Malawi	9412.1	3481.8	3007.3	474.9	3639.3

Source: Land Husbandry Branch, Ministry of Agriculture and Natural Resources.

The results of the National Sample Survey of Agriculture carried out in 1980/81 , will have to be awaited before more information regarding the situation of sizes of holdings in the smallholder sector is made available. At the moment , there is growing speculation that in many parts of the Central and Southern Regions, the land frontier has either been reached or is being approached at a fast rate, and that the rapid expansion of the estate sector during the past decade has accelerated this process.[8] This implies that there is now very limited scope in Malawi for increasing agricultural output through hectarage expansion, therefore calling for greater reliance on the use of productivity raising inputs.

It would be erroneous to treat the land factor as though it was uniform throughout the country. The diversity in topography referred to above, has affected the regional distribution of arable land, and so have temperature, climate and other related factors. These in turn have affected the farming systems of different regions, and therefore their land utilization patterns. At the same time, the regional disparity in land

utilization is not merely a product of geographical factors,
it has political and historic factors as well.

(iii) Patterns of Land Use

Malawi can be divided roughly into three distinct zones
each with its own climatic, temperature and soil fertility
conditions, and therefore having different agricultural
potentials.[9] These are :

(a) The Plateaux Region - comprising the Shire
Highlands and Central Region Plateaux(Lilongwe and Kasungu
Plains, extending into Mzimba/Rumphi Plains and Chitipa). These
lie at an altitude of between 750metres to 1400 metres above
sea level. The region has a temperate climate, with mean annual
temperature ranging between 18^0C and 24^0C. Mean annual rainfall
is between 750 mm. and 1500 mm. This is the region of greatest
peasant agricultural potential. Maize, finger millet and pulses
are the main staples, while groundnuts and tobacco are the main
cash crops. Wherever rainfall permits , tea, and other
plantation crops are grown.[10]

(b) The Highland Areas - of Vipya,Nyika, Misuku and
Mafinga Highlands in the North;. Shire Highlands (Zomba,Mulanje)
in the South; and the Kirk Range and Dedza in the Central. Their
altitude ranges from 1400 to 2750 metres above sea level. They
have very good agricultural soils, and where the slopes are well
watered, legumes, potatoes,wheat and maize are grown. Their
warm climate (mean annual temperature just below 18^0C and a
mean annual rainfall ranging from 1300 to 4000 mm.), makes them
the most suitable for temperate crops and European settlement
and consequently it is the region where estate agriculture is
concentrated (especially the Shire Highlands) as a result of
its historic attraction to European settlers.

(c) The Shire Valley and Lake Malawi Littorals
rangig in altitude from 40 to 750 metres above sea level.
Rainfall is below 750 mm. (on average) per annum. Temperatures
are high, averaging around 24^0C. This is the region of least
agricultural potential. Periodic variations in water levels
in Lake Malawi and Shire River, add to water management problems.

However, successful implementation of water level control
projects would allow for irrigation schemes as well as reduce
the occurence of devastating floods, thus enhancing the region's
agricultural potential.   Nevertheless, bulrush millet, cassava
and rice are the main food crops in the region, while cotton
is the main cash crop.

This diversity in agricultural potential indicates that
there is no uniform solution to the country's agricultural
development problem, as the development needs of each region
are determined by different circumstances.   There is therefore
need for carefully tailoring of projects to the specific needs
of each region.   Indeed in some regions, agricultural develop-
ment may not offer an immediate solution .   However, these
differences should not mask the fact that overall, Malawi's
agricultural potential is quite substantial.   With a mean
annual rainfall of 1150 mm, ranging from 650 to3900 mm.,
Malawi is luckier than most other sub-Saharan African countries,
where long droughts are a perpertual hazard to crops and livestock.
In fact, only about 5% of the country is said to have an average
rainfall below 750mm.,which is considered to be the minimum
required for dry farming in the type of climate , making
most of Malawi cultivable for at least one type of crop or the
other, giving the country great scope for diversifying her
agricultural product mix, which could act as a cushion against
the disaster that usually follows as a result of total dependence
on one or two crops.[11]

(iv) Mineral Resources - Prospects for mineral
resources are very limited in the country as known exploitable
minerals are very limited, although exploration continues.[12]
Bauxite on Mulanje mountain may become extractable once,
or if ever cheap power becomes available, and so could pyrites
and pyrrhotic (sources of sulphur) near Lilongwe.[13] Consider-
able deposits of low quality coal are also said to be
available in the Northern region.   With escalating fuel prices ,
these could prove to be a valuable source of energy for industry.

However , extraction of such deposits at present appears to be uneconomic. It is only natural building materials such as sources of cement (marble, limestone and aggregates) and brick clays which occur widely throughout the country. Overall, mining and quarrying activities are not very significant in Malawi. Malawi thus does not have the fortune of relying on mineral resources to finance her development programmes, as is the case with other developing countries, such as Zambia, Zaire, Nigeria and others, hence placing the onus of generating investible funds on the agricultural sector.

(v) Water Resources - As already pointed out , Malawi is a landlocked country. This means that her only water resources are in the form of inland lakes and rivers. The absence of a sea coast has naturally affected her transport network (to the outside world), making her rely entirely on overland transport.

Lake Malawi, covering an area of some 2.4 million hectares is the most prominent feature in the country. Three other lakes (Chiuta, Chirwa and Malombe) lie wholly or partly within the country's boundaries. A skeleton water transport system operates on Lake Malawi and the upper part of Shire River(Lake Malawi's outlet to the Indian Ocean, via the Zambezi River). However, the largest contribution of Malawi's water resources is by way of providing the many part time and full time fishermen and fish traders with a considerable means of livelihood. In 1978, recorded landings of fish were estimated at 67,500 metric tons (valued at K8.1 million) , of these, 66,900 metric tons were estimated to have been consumed locally, with the remainder having been exported, at an estimated value of K398,000.

Malawi's greatest potential in terms of the water resources is hydro-electric power. The country's industrial power is mostly electrical. In 1978, about 70% of this electrical power was hydro,[14] with the bulk of it coming

from Nkula and Tedzani hydro-electrical power plants situated on the Shire River.

B. Human Resources.

1. Labour Force.

Any discussion of a country's agricultural potential is incomplete without an examination of labour availability in the country, especially when smallholder agriculture is the main subject under consideration.

With an average population density of 59 persons per square kilometre (mid-1977),[15] Malawi is one of the most densely populated countries in East and Central Africa.[16] This gives Malawi a large potential labour force. The World Bank (1981), estimated that in 1979, the total Malawian population was 5.8 million, 49% of which was eligible to work (being within the 15-64 years age category).[17] This implies that in 1979, the Malawian labour force was around 2.84 million. The Bank further estimated that the Malawian labour force would grow at the rate of 3.3% per annum, between the years 1980 and 2000.[18] Accepting these estimates (which seem reasonable, given that the Malawian population is growing at the rate of 3% per year,[19] while 50% of the population is in the 10-54 years age group (1977 census), the Bank's estimate that by the end of the century, the Malawian labour force will stand at about 5.62 million, sounds reasonable.

Between 1971 and 1977, total paid employment in Malawi is estimated to have risen from 172,000 to 275,600,[20] that is at an annual rate of about 9%. This represents a very fast rate of growth for any developing country. If, for the sake of argument, that rate is assumed to continue to the year 2000, then paid employment could reach 2.1 million at the close of the century. This could leave an estimated 3.52 million eligible workers outside the formal labour market. However, a closer look at the structure of employment in the country presents even a more gloomier picture than this.

Table 2.3 gives the structural pattern of paid employment for the years 1968, 1972,1976 and 1980.[21] The table indicates that total paid employment grew by 9% between 1968 and 1972, by 8.6% between 1972 and 1976 and by 5.4% between 1976 and 1980. The table also indicates that the agricultural sector is by far the largest employer of paid employment. During the period under review , the agricultural sector has increased its share of paid employment from 33% in 1968 to about 51% in 1980. This rapid growth of employment in the agricultural sector, has not been necessarily uniform during the whole period, as represented by the growth rates of 9.6%, 13.0% and 5.7% between the periods 1968-72, 1972-76 and 1976-80, respectively.

Table 2.3   Average number of Paid Employees by Industry
For 1968,1972,1976 and 1980.

Industry	'000 s				Annual growth rates(%)		
	1968	1972	1976	1980	1968-72	1972-6	1976-80
1. All Industries	134.5	189.6	264.1	359.7	9.0	8.6	5.4
2. Agriculture, etc.	44.1	63.7	103.9	182.7	9.6	13.0	5.7
3. Manufacturing	17.2	23.2	36.0	39.1	7.8	11.6	6.0
4. Construction	15.5	18.2	21.1	37.9	4.1	3.8	16.8
5. Wholesale etc.	9.4	15.9	20.7	19.5	14.0	6.8	- 7.9
6. Transport etc.	8.1	9.8	13.0	16.5	4.9	7.3	- 0.4
7. Community social and personal services.	37.4	54.2	61.9	49.2	9.7	3.4	2.6
8. Others	2.5	4.5	7.5	14.8	15.8	13.6	17.6

Source: Kydd and Christiansen (1982) , op. cit. p. 20

Two aspects are discernible from the above data. The first is that, although paid employment in the Transport and Manufacturing sectors has a pattern of growth similar to that in total employment, during the period under review, by and large, it is growth of employment in the agricultural sector, which has dictated the pattern of paid employment in the whole economy. The second aspect is that the trend of growth seems to be tailing off.

The rapid growth of wage employment in the agricultural sector, seems to have been a direct result of the fast expansion of the estate sector (more especially tobacco estates). The 1970s saw rapid expansion of the estate sector in the form of enlarging existing estates and opening up of new ones (especially by Malawian entrepreneurs). With the assistance of a low minimum wages policy, deliberately formulated to boost rural wage employment and curb rural-urban migration,[22] most of these estates used labour intensive production techniques, with the consequence that paid employment rose in this sector during the period.

But, as hinted above , by the late 1970 and early 1980s, the land barrier appears to have been hit in many areas, thereby reducing the scope for raising agricultural output through hectarage expansion. This means that most of the estates have had to turn to relatively less labour intensive production techniques, in order to raise land productivity(such as greater use of mechanisation and other more sophisticated techniques of production). At the same time, the liberal credit policy which was used in order to encourage indigenous participation in estate production of tobacco has led into a number of insolvencies forcing a number of estates into closing down or going into receiverships, thereby shedding labour.[23] The result of these developments has been a reduced labour absorptive capacity of the agricultural sector (as far as wage employment is concerned). It therefore appears that, unless some fundamental structural change occurs in the economy soon, an increasing proportion of the rapidly growing labour force will find themselves outside the formal labour market. This means that, only smallholder agricultural development (at least in the short run), holds the hope for their livelihood and welfare.

However, the low productivity in the smallholder sector, coupled with the growing pressure on the land, limit the opportunities people can get on the land.   This points to two possible courses of action:

(a) To improve productivity per hectare, via increased use of modern inputs, wide application of modern methods of agriculture and / or more intensive cultivation (eg. irrigation) to counter the declining fertility trend due to land pressure,

(b) Rapid creation of off farm income earning opportunities to reduce over dependence on agriculture.

Both options will be considered in the concluding chapters.

2. A BRIEF ECONOMIC AND POLITICAL HISTORY OF MALAWI

This section will attempt to briefly chart the main political and economic events in Malawi that helped to shape the current development strategy.   For purposes of clarity the historical analysis will be divided into three chronological periods, viz:

(i)   Colonial Period (1891-1953)
(ii)   Federal Period (1953-1964)
(iii) Post-Independence Period(1964 to date)

A.   The Colonial Period

The story of British administration in Malawi, began in the second half of the 19thCentury, when David Livingstone, a Scottish Missionary and explorer, driven by the desire to make an open path for commerce and christianity into the interior of Africa, and so end slave trade in the region, persuaded both the British Government and Christian bodies in England and Scotland to back his expeditions into Central Africa.   It was mainly his second expedition (1858-64) which subsquently led to the settlement of Europeans in Malawi.   The story of how events developed in the region, leading to the firm establishment of British rule in Malawi,is well documented elsewhere.[24] Here we shall only concern ourselves with how colonial agricultural policy evolved.

The main objective of Livingstone's expeditions was to facilitate European settlement in the area, which would in turn allow the inhabitants to apply themselves to industrial pursuits and to cultivation of their lands. In this way they would produce raw materials to be exported to England in return for British munufactures. It was hoped that by encouraging the natives to occupy themselves in the development of the resources of the country, a considerable advance might be made towards the erradication of slave trade.[25]

I   Introduction of Settler Agriculture in Malawi

As mentioned earlier, Livingstone's wish was that the inhabitants were to engage in industrial pursuits and agricultural production. This view was shared by most of the missionaries who followed his footsteps into Central Africa.[26] However, those people who were entrusted with consolidating British rule in the country viewed the situation differently. Instead they pursued a policy of encouraging European settlers and companies to take up agricultural production, with the natives playing the role of labourers. One argument put forward to justify such a move was that among the first Europeans to arrive in the country were a number who were primarily interested in the export of produce purchased from the Africans, but once the character of the indigenous subsistence economy became known, it was immediately realised that such a course of action was impossible and many Europeans turned to producing crops themselves.[27] However, there is no evidence to substantiate this claim. To the contrary, there is ample evidence to indicate that well before European settlement in Malawi, the "Maravi", were surplus agricultural producers, who supplied not only the Portuguese settlements on the coast but also other African groups.[28] Such evidence suggests that either the nature of the African system was misunderstood by the early administrators, or they had other pressing reasons for encouraging settler agriculture.

An examination of the available evidence suggests that both aspects were in play. In the first place, Johnston , the architect of British administration in Malawi, is quoted to have said that the African farming system was conducted on a heedless

system ruinous to the future interests of the country.[29] This
was in reference to the slash and burn method of shifting cultiva-
tion. No attempt was made to establish the rationality of the
system in the prevailing circumstances. Just because the
African's farming methods were different from those used by
his European counterpart, it was assumed that the African was
a bad agriculturalist. Yet many recent studies have established
the rationality of shifting cultivation and other aspects of
traditional agriculture.[30]

The most important reason for promoting settler agriculture
instead of peasant agriculture appears to have been Johnston's
desire to attract European settlers in the country. Krishnamurthy
(1972), points out that although Johnston believed that the future
of the country belonged to the African, he nevertheless, under-
estimated the capacity of the African to make any contribution to
the development of the protectorate in the immediate future. His
opinion was that the country would be developed by Europeans
without whom, he thought, Central Africa would be of no value.[31],
As Williams (1978), points out, to achieve this objective, the
administration had to provide conditions that would enable the
settlers in the Protectorate to achieve a degree of commercial
success sufficient to allow them to maintain a satisfactory
standard of living comparable to that enjoyed by settlers in
Rhodesia, Kenya, etc.[32] In turn the settlers were expected to
provide the basis of   a monetized economy on which the
administration would depend for most of its revenue. It was in
the pursuit of this objective that the development of settler
agriculture took priority, much to the neglect of peasant
agriculture, as will be indicated subsequently.

11. Tools Used in Consolidating Settler Agriculture.

Coffee was the first estate crop to be introduced in Malawi
(introduced in the 1880's), and it enjoyed considerable success.
In 1885 there were 16 hectares (40 acres) under this crop and
by 1896 it was covering an area of well over 4050 hectares
(10,000 acres), rising to about 7,000 hectares (17,000 acres)
by 1900. During this year, proceeds from coffee exports
(which comprised about 80% of total exports) amounted to

£62,000. However, after 1900, a combination of droughts and pests, plus stiff competition from Brazilian coffee, saw the decline of the coffee industry in Malawi, from which it has never recovered.[33] However, the main point is that encouraged by these early successes of the coffee industry, the administration was committed to attracting more European settlers into the Shire Highlands. Once these new entrants opened up estates , it was soon discovered , as Williams (1978), points out, that if these settlers had to succeed they needed :-[34]

 (i) A steady supply of cheap labour.

 (ii) Abundant cheap land.

 (iii) Adequate communications (particularly transport).

Thus, one of the main tasks of the adiministration during the early years of colonial rule in Malawi was to respond to these demands. The following tools were used to this effect :-

 (i) Taxes.

 (ii) Labour certificates.

 (iii) Restrictions on recruitment for work outside the country.

 (iv) Denial of opportunities to Africans to grow certain cash crops.

 (v) Forced labour and alienation of land.

(a) <u>Taxation</u> - was the first tool used by the administration to help the settlers with their labour problems. During the early years of his administration (1890s), Johnston introduced a hut tax of 3 shillings per annum (which was equivalent to the average monthly wage rate in the Protectorate). Although this was intended as a source of revenue for the administration, it was soon put to other uses.[35] Initially the tax was payable either in cash or in kind, but later in order to force people to work on the estates, only cash was accepted.

(b) <u>Labour Certificates</u> - Later, not only had taxes to be paid,
but a labour certificate had to be produced, duly signed by
an employer , stipulating that the holder had worked for a
specific period of time.   The tax rate was also raised to
8 shillings per annum in 1912, but a tax rebate of 4 shillings
was given on production of a labour certificate - thus encoura-
ging people to pay taxes out of wage labour.   At the same time
the settlers were allowed to pay taxes for their employees in
return for 30 days labour.[36]

(c) <u>Restrictions on Migration</u> - Due to the presence of
other cash earning opportunities, such as crop production ,
working as porters for the transporters,migration, etc., the
imposition of tax alone did not prove effective in making
labour available on the estates.[37]   The settler farmers
persuaded the Government to close these gaps.   Their first
request was for a ban on recruitment of labour from Malawi for
work outside the protectorate.   Secondly they urged the Govern-
ment that a railway line be built to ease the transportation
problem and therefore release labour from road - porterage.[38]
Missionaries in the country backed these requests on humani-
tarian grounds.   The result was that in 1908 a railway line
from Blantyre to Chiromo was opened and later extended to
Nsanje.   And in 1909, the Government introduced measures to
restrict labour migration.[39]

(d) <u>Forced Labour and Alienation of Land</u> - In addition to the
above measures the Government encouraged a quasi-feudal tenancy
system, whereby the settler farmers were empowered to exact
payment from the Africans residing on their estates.   This was
termed <u>Thangata</u>.[40]

The system of <u>Thangata</u>, was made possible by settler
control of land.   When Johnston embarked on the task of
building the Protectorate's economy , he was soon faced with
the problem of land disputes.   Most of the settlers had
acquired large tracts of land (mostly for speculative purposes),

through dubious negotiations with the traditional leaders, to
which they claimed ownership, much to the surprise and indig -
nation of the indigenous population, to whom individual owner-
ship of land was unthinkable. Thus naturally land disputes
between the settlers and the indigenous people arose.

Johnston had to act to resolve this comflict. However, he
was already committed to encouraging European enterprise, and he
strongly believed in the Western notion that individual ownership
of land was a paramount condition for land development. Thus in
his arbitration, he merely consolidated the position of the
settlers by issuing them with certificates of claim over the
lands they claimed. The amount of land involved in these claims
was enormous. For example, it is said that in 1903, the British
Central Africa Company claimed about 149,000 hectares (367,000
acres), but cultivated only about 2,000 hectares (5,000 acres).[41]
During this time, the African population was growing fast as a
result of the cessation of tribal hostilities, cessation of the
slave trade, and an influx of migrants from Mozambique. The
result was that there was pressure on the land and consequently
many people found themselves residing on European estates as
tenants.[42] Thus the system of Thangata developed. Of this
system, the Grant Commission of 1915 reported:[43]

> "The tenants system was that natives living on the land were
> compelled to work for a month in the wet season for rent and
> another month also in the wet season for hut tax, that is
> two months of work."

It must be pointed out that given the short wet season in
Malawi, ie 3 months on average, and the fact that the "ticket"
month of 30 working days, rather than the calender month was
employed, these tenants hardly had any time to tend to their
own farms. Consequently, this had disastrous effects on peasant
agriculture.

Thus it can be seen that through these policies and practices
a large number of Africans were condemned to work for the European
settlers, for very little pay and often very bad conditions.
Since both European and African agriculture were rain-fed and
heavily dependent on labour, it meant that their peak labour
demands (planting, weeding and harvesting) usually coincided.

The settler farmers, with the help of the above measures, got the labour, while the African farmers, because of the severity of the punitive measures taken in cases of non-conformity with the above mentioned policies and practices, had their fields inadequately attended to.[44] The economic implication was that these policies and practices led to the creation of a peasant labouring class, greatly dependent on estates for its livelihood. Not only was African cash crop production inhibited, but even their subsistence output was at stake. In addition, the strained relations on the estates contributed to the inefficiency of European production, which coupled with an inefficient transport system, made Malawi's produce less competitive on the world market.[45]

111 The Effects of Colonial Policies on the Development of Smallholder Agriculture

(a) Obstacles to smallholder production

As already pointed out above, the devices used in promoting European agriculture, undoubtedly had a negative impact on the development of peasant agriculture in Malawi. In the first place, they reflected the lack of commitment on the part of the Government to develop this sector. For example, the policy of land alienation, initiated by Johnston, had , in addition to those evils associated with Thangata, other inhibiting aspects on peasant agriculture. For one thing, Johnston omitted any special provision for African participation in the development effort, except that he pledged that he was prepared to encourage those Africans that were willing to buy or lease land on an individual basis.[46] But this was more of a token gesture than anything else. This is illustrated by the fact that a few years later (in 1910, when Alfred Sharpe was Governor), 47 Africans are said to have applied for land but the Government rejected their applications. In fact, the few Africans who were lucky enough to get Crown land under this provision, were only allowed 0.80 hectare (2 acres) or less, for growing cotton.[47] This contrasts sharply with the situation in Uganda, where peasant production was considered to be the backbone of the economy. There, peasants were allowed an average of 3.2 hectares (about 8 acres), of which 1.2 hectares were devoted to cotton growing,

while plantains and subsidiary crops took up 1.2 and 0.5 hectares, respectively.[48] Besides, those Africans who did venture into opening up agricultural estates, were not given the same privileges as their white counterparts. For example, they were denied the chance to benefit from the device of "labour certificates".[49]

In the second place, the policy of allocating land to settlers, had the effect of unbalancing the peasant farming system. Johnston had designated, virtually all the land not in private (European) hands as Crown Land, from which new allocations could be made to intending settlers. The only safeguard against total dispossession of the Africans was that land which was currently being used by the Africans could not be alienated. But during this time the mode of peasant cultivation was that of shifting cultivation. Thus, even if the people had secure tenure over the land they were currently using, once the soil was exhausted they had nowhere to shift to, the consequence was declining peasant productivity.[50]

However, it is only fair to mention that despite the administration's negative attitude towards smallholder agricultural development, a few attempts were made to encourage small scale production of cash crops, especially cotton and fire-cured tobacco, when the failure of the settlers to produce these crops efficiently became apparent. For example, in 1904, Alfred Sharpe,, Johnston's successor, offered tax rebates to Africans growing cotton, as an encouragement to grow the crop.[51] By far the biggest boost came from Manning, Sharpe's successor, when in 1912, he initiated the Crown Land Ordinance. For all practical purposes, this Ordinance was aimed at halting land alienation, by restricting the granting of freehold titles to European settlers.[52] In addition, he committed the British Cotton Growing Association to a policy of promoting cotton growing as an African peasant industry.

However, progress in this direction was impeded by a number of factors, such as :

(i) Land shortage.

(ii) Lack of funds for cash crop production.

(iii) Unfavourable marketing and price policies.

(iv) Inadequate transport services.

At the outbreak of the 1st World War, it is estimated
that about 15% of the arable land in the country was under
settler control this included most of the land in the Shire
Highlands.[53] Thus most of the Africans who grew cash crops,
did so as tenants on estate lands. Most of the estate owners
were hostile to this development, mostly due to the effect it
had on their labour demands. Naturally, they put many obstacles
in the way of the African cash croppers, such as outright bans
on cash crop production on estate land, requiring the peasants
to work on the estates during peak labour demands, etc. In
addition, most of those African growers had no source of inputs.
Hence, some of the estate owners took advantage of this situation
by providing the Africans with inputs, such as tobacco seeds (or
seedlings), watering cans, etc. In return, these "landlords"
reserved the right to purchase the crops from the tenants, at
very low prices, and auctioning the crops themselves, together
with their own produce. Also, lack of adequate marketing
facilities within commutable distances, forced these African cash
croppers to sell their crops to the estate owners.

(b) Some Progress Within the Smallholder Sector.

Ironically, evidence indicates that smallholder production
of cash crops (especially cotton and fire-cured tobacco) did
begin to flourish, at a time when European production of the same
began to decline, despite the above mentioned obstacles. For
example, at the outbreak of the 1st World War, it is estimated
that 10-15% of total exports (comprising mostly of tobacco and
cotton) were produced by smallholders.[54] After the war, small-
holder production of both crops continued to rise. It is
estimated that between 1922 and 1932, smallholder production of
cotton rose 7 fold in absolute terms, bringing the share of
smallholder output from 14% to almost 100%. Tobacco production
also went up, especially in Lilongwe, where in 1926, there were
about 13,000 registered African growers. It was only during the
depression of the 1930 s that there was a decline in smallholder
production, and this decline was much slower than that experienced
in the European sector.[55] This appears to have been noticed by
the colonial administration and other observers.

During the inter-war period, people had began to realise
that the future of the protectorate's agricultural industry lay
with peasant production. For example, the Secretary of the
British Cotton Growing Association is quoted to have remarked
that the introduction of white planters into tropical countries
like Nyasaland, brought difficulties and complications which
did not arise when the industry was solely in the hands of
natives.[55] And the Hammond Report of 1924, called for opening
up of opportunities for cash crop production.[56] As such, after
the 2nd World War, although support for European agriculture
continued, there was a marked move on the part of the Government
towards a policy of encouraging peasant cultivation of those
export crops which did not compete for resources with European
agriculture, such as cotton, tobacco and groundnuts - for by
this time, European agriculture was mostly concentrated in tea
production in the Shire Highlands.

(C) The Revolutionary Approach to Peasant Agricultural Development.

The underlying philosophy in this move to develop peasant
agriculture was that the African was a bad agriculturalist. What
was needed was to revolutionize his supposedly irrational
agricultural system. Emphasis was therefore placed on good
husbandry practices, such as soil and fertility conservation (to
counter the declining fertility brought about by the sudden
change from a shifting to a more permanent system of cultivation),
crop rotation, better spacing of crops, timely cultivation, etc.
And, as Kettlewell (1965) pointed out, the official policy was
one of concentrating on the most progressive individuals. The
policy was rooted in the belief that the foundation of a prosper-
ous agricultural industry would eventually depend upon the
individual "Yeoman" farmer with a secure heritable title over
sufficient land to enable him enjoy an improved level of living, [57]
thereby, neglecting the bulk of the peasant population.

(d) Labour Migration.

By far, the most serious threat to smallholder agricultural
production appears to have come from labour shortage. The main
consequence of the colonial policy of supporting settler
agriculture, was the emergence of a peasant labouring class, who
given very limited opportunities in cash crop production, was

forced either to seek work on the settler estates, often at
very low wages and unpleasant conditions, or to migrate and seek
their fortunes in the mines of South Africa, Zambia or on settler
farms in Zimbabwe. The available evidence tends to indicate
that the majority of poeple preferred to take the latter
altenative. The effect of labour demands by the settlers on
smallholder agriculture, have been considered above. It remains
now to consider those of outward migration. The process of out-
ward migration from rural Malawi, of unskilled and semi-skilled
labour which started at the beginning of the 20th Century,
continued throughout the whole colonial period, well into the post-
Independence era. This was despite various attempts to curb
it at the beginning of the century. The effects of this process
have been analysed from a number of stand points. Some analysts
for example, have looked at it from the humanitarian point of
view, which focuses on migrants' conditions at the places of
employ-ment. Others have taken a Marxist stand looking at the
process of proletarianization of the migrants, also in the
place of work. The only study which focuses on the adverse
effects of the process on the Malawian society emphasizes the
social consequences.[58] Data limitations and imperfections
have so far prevented any useful examinations of the effects of
this outward migration on peasant agricultural production.
However, there is reason to speculate that labour migration
dealt a severe blow to peasant agricultural development prospects.
The exodus of able bodied males was appalling.

During the post-war years, the annual average level of
migration was about 35,000 persons, which rose to a yearly
average of about 65,000 in the 1950 s. The upward trend only
ceased in the mid 1970 s due to official policy. Table 2.4 gives
the magnitude of the proportion of the labour force which was
outside the country at various times.

Table 2.4 Malawians Abroad as Percentage of Estimated de-facto
Population of Malawi - 1902-1972.

Year	Percentage
1903	1.1
1911	2.5
1924	2.5
1938	6.8
1948	5.6
1958	6.2
1972	10.3

Source: Calculated from Boeder (1974), see Kydd and Christiansen
(1982), op. cit. P8.

Given the labour intensive nature of peasant agriculture
(especially shifting agriculture which depended on a lot on the
initial clearing of the bushes by the male-folk), it cannot be
doubted that the absence of such a substantial proportion of the
labour force from the rural areas, did have a negative impact on
rural output. Although it is arguable that given the limited
opportunities for productive work in the rural areas, at the
time, earnings from migration did provide a positive contribution
to household income.[59] Consequently, this may have helped to
raise peasant agricultural productivity (by providing funds for
agricultural inputs), evidence to support this view is not
available. The evidence which one comes across is that most of
the migrants spent their money on consumer durables such as
radios , bicycles, blankets, clothes and the like, either in the
countries of employment or immediately upon return to Malawi -
most of them only to migrate again after a short spell at home.
The few who invested their money usually went into the retail
trade (opening groceries, canteens etc.) in local areas.[60]
Hardly any invested in agriculture.

Several reasons may be advanced for the failure of peasant
agriculture to attract migrant remittances. Firstly, the peasants
were prevented from growing those crops in which the European
settlers had a stake, thereby limiting their agricultural
opportunities. Secondly, marketing of peasant crops was controlled

by the Government. Prices were therefore deliberately depressed, either for purposes of extracting a surplus for the administration and/or in line with the policy of forcing the peasants onto wage labour on the European estates.[61] This acted as a disincentive to many would-be cash-crop producers. Thirdly, most of the migrants were male. The dependents left behind (women and children) were more concerned with meeting basic subsistence food requirements in their agricultural operations, while using migrant remittances to meet their other requirements such as school fees, etc. Besides, the absence of the male member from the household meant that the women folk, faced with domestic chores and sometimes involved in forced labour on the estates (to pay the tax for their huts in the absence of their male spouces), could not find adequate labour to engage in surplus agriculture production.[62]

(e) Summary.

Thus, in summary, it can be said that colonial agricultural policy in Malawi (as was the case in Kenya also up to the late 1950s),[63] was basically one of encouraging European farmers by giving them access to the best lands (eg. the Shire Highlands) facilitating them with a steady supply of cheap labour, providing them with the best veterinary and agricultural services and protecting them from competition from African farmers. The attempts at revolutionizing peasant agriculture, which were taken after the fallibility of European agriculture was exposed during the depression, did not work. This was largely because the administration failed to realize that the advancement of African agriculture was not constrained by the behavioural characteristics of the Africans, which it sought to revolutionize, but as Chanock pointed out, by the restrictions which the colonial structure had placed on the peasant population, such as restrictions on cash crop production, unfavourable agricultural prices and inadequate marketing facilities mentioned above.[64] The coercive methods used to enforce the new agricultural methods (which were actually caused by the sudden imposition of permanent cultivation by the land alienation policies) proved more harmful than helpful to peasant production.

The only option open to most people to improve their lot
was to migrate. By the 1930s, the Government began to
positively encourage outward migration. As Vail (1977) points
out, it was decided that in lieu of agricultural produce, the
country would export human beings. For example, the official
restrictions on labour recruitment in Malawi for work outside,
imposed in 1909, were lifted in 1934, when a Rhodesian firm was
allowed to recruit in Malawi.[65] As Tapela (1979) puts it, a
quasi-Government machinery was established to channel the
emigration in a way that would enhance the protectorate's
revenue.[66] For example, WNLA (Witwatersrand Native Labour
Association), the recruiting agent for the South African mines
of Witwatersrand made an agreement with the Government that
they would pay, en bloc for each recruit, a capitation fee of
10 shillings (later raised to 15 shillings), and an annual tax
of 6 shillings. In addition, 2/3 of the migrants earnings were
deferred and sent to Malawi. These proved to be a valuable
source of foreign exchange for the country, and in
addition, such monies boosted local retail trade. Furthermore,
the Protectorate's products of cotton goods, entered South
Africa free of charge.[67]

As a result, the country eventually came to be looked
upon by its neighbours as a labour reserve. This meant that
there were very few activities in terms of industrial develop-
ment taking place in the country that would have stimulated
agricultural production, and therefore induced the use of
productivity raising investments in agriculture (to counter
the loss of labour and declining soil fertility). It is there-
fore not surprising to find claims that colonialism created
rural poverty in the country, by destroying self-sufficiency in
peasant production through its policies of forcing the peasants
onto the labour market, and inducing outward migration.[68] It
was in this state of affairs, that Malawi was reluctantly drag-
ged into the now defunct Federation of Rhodesia and Nyasaland
in 1953.

B. <u>The Federal Period, 1953-1964.</u>

I. <u>Introduction.</u>

In this section the main argument is that the Federation
had a disruptive effect on whatever little progress had been
achieved during the colonial period in the field of peasant
agriculture. This was due to two main things:

(i) The coercive approach used by the Federal regime to
improve African agriculture.

(ii) The bias in federal agricultural policies towards
European agriculture.

The Federation of Rhodesia and Nyasaland (comprising of
present day Malawi, Zambia and Zimbabwe), was established in
1953. Although most of the underlying factors behind the move
were political, it was largely economic arguments which were
orchestrated by its proponents.

These issues will not be taken up here, suffice it to say
that most of the arguments were superficial and were merely
accepted at their face value at the time. It was only after
the Federation was established that some serious analyses of
the arguments became available and exposed the weaknesses in-
herent in many of them. For example, the traditional common
market argument, seems to have carried more weight at the time.
But as Hazelwood has pointed out, the creation of a wider
market does not necessitate political unity. After all, all the
countries concerned belonged to the Congo Basin Free trade area.(69)
And, such bodies as the EEC, EFTA, ECOWAS, etc, which are prima-
rily free trade areas, have been in operation for a considerable
period, while the participating countries have maintained their
political autonomy. It appears that the existence of good will
and commitment on the part of the participants is all that is
required to make the arrangement work. More important, it is
widely recognised that, although a free trade area, or a common
market (or any similar arrangement), may be advantageous, to a
whole region's industrial development, it does not imply that all
the participants will necessarily benefit equally from the arrange-
ment. In actual fact, some of the participants can become worse
off at least in a relative, if not in an absolute sense within

the Union than outside it, due to such aspects as trade diver-.
sion, etc.[70] unless special and appropriate compensatory
mechanisms are provided. But, as Hazelwood (1967) pointed out,
the Federal development strategy was biased towards Zimbabwe.
This was because territorial distribution of Federal funds was
based on the pattern of territorial distribution of the white
population in the Federation.[71] Zimbambwe, had in 1954, a
white population of about 158,000 (some 3% of its total
population). In contrast, Zambia and Malawi, each with a total
population of about 2½ million, had white populations of 53,000
and 5,000, which represented 2% and 0.2% of their respective
populations. As such, Zimbabwe got the lion's share of federal
funds.[72]

11. Consequences of Federal Agricultural Policies in Malawi.

The entrance of Malawi into the federation did not improve
matters for the peasant population in Malawi. If anything, the
situation seems to have deteriorated.

For Malawian agriculture, the federal period was character-
ised by a number of aspects, viz:-

    (i) The move to modernize peasant agriculture.

    (ii) Bias of agricultural research and extension towards
        settler agriculture.

  (iii) Continuation of outward labour migration.

(a) Attempts to modernize peasant agriculture.

In the previous section, the attempts made by the colonial
administration to improve African agriculture were considered,
and how these backfired, leading to a subsequent deterioration
on peasant agricultural production. During the Federal period,
the need to improve peasant agriculture was also realised. The
basic Federal agricultural policy was to increase crop product-
ion by use of good farming practices. This was to be achieved
through more effective instruction and supervision of peasant
cultivation - rather than by specific schemes - as was the
previous case. Two main approaches were taken in this direction,
namely, land reform and stepping up of extension efforts.

Land reform - Worried about declining soil fertility, due to
excessive soil erosion (the result of rising population pressure

on the land), the Federal Government initiated a land reform
programme (which featured in the 1957-61 Plan).[73] This re-
form took largely the form of land consolidation. The idea
was to introduce sound land use methods at the village, or
preferably larger unit, that is, land use was to be reorganised
by providing grazing, forest and arable areas in the most
appropriate enviroment. Arable land had to be planned and
conserved, and each individual within the planning unit would
be allocated a holding of approximately the same hectarage as
the total of the previous holding(s). It was anticipated that
security of tenure would be granted on such holdings (as was the
case in Kenya under the Swynnerton Plan).[74] Assistance was also
to be provided to consolidated land holders. By 1960, a number
of villages were established under this scheme.[75] In addition
to the land consolidation scheme, a land resettlement scheme was
initiated, whereby the Government acquired land from unused or
underdeveloped estate land and re-allocated it to rent paying
Africans on estates and to African Urban workers who could not
afford to live in urban areas.

Both schemes met with very little success. For one thing,
they involved a very small proportion of the peasant population.
Secondly, the resources available for the programme (barely 10%
of the planned expenditure) were not adequate to produce any
significant impact.[76]

The main thrust of this development effort was on the highly
selective Master Farmers scheme. Farmers were chosen on the
basis of their willingness to adopt innovations and given
incentives of various types (including cash) to consolidate
their land into a unit of not less than 3.2 hectares (8 acres),
to conserve soil, rotate crops and adopt high standards of
management.[77] But as the table below indicates, the scheme
only covered a very tiny proportion of the smallholding
community, and suffered the same fate as that suffered by the
two schemes mentioned above.

Table 2.5 Master Farmers 1954-1960

Year	Number of farmers	Hectarage
1954	53	.202
1955	129	851
1956	180	1219
1957	282	1410
1958	407	1910
1959	459	2023
1960	745	2546

Source: Nyasaland Report, 1954-1960, cited in Kettlewell, op cit.

Extension Services - In an attempt to foster good agricultural practices among the African farmers, three research projects were included in the 1957-61 Plan. These were for the purposes of investigating cash crop disease (eg. the Lower Shire River Farm Institute investigated cotton diseases). In addition, steps were taken to strengthen the extension services, by opening up agricultural schools (eg Colby School of Agriculture in Lilongwe) to train Africans for the agricultural and veterinary branches of the civil service.

However, these, worthy efforts were undermined by the coercive approach taken by the Agricultural Department to spread modern methods of agriculture. By concentrating efforts at changing the social institutions (land tenure) and enforcing new agricultural practices, rather than initiating gradual changes within the existing system, the Federal Government's attention, like that of its predecessor, missed the real economic issues that hampered African agriculture and therefore tended to introduce elements that made the situation worse. For example, in the face of the labour shortage in the peasant sector, already mentioned above, the new labour intensive practices made no economic sense. It is seen that apart from bunding, considerable routine effort was directed towards encouraging well made planting ridges, box ridging, stream bank protection, gully control and the protection of roads, garden paths and boundaries. Although those measures may have brought long term advantages,

in the short run, they caused a lot of hardships to many
families, leaving them very little time to perform vital far-
ming processes (such as weeding) and to attend to household
chores. The imposition of fines, prison sentences and other
penalties for non-observance of these regulations destroyed any
good intentions the extension staff might have had. The result
was widespread peasant defiance to any agricultural regulations
despite whatever merits these had. This could only lead to
decline in agricultural output in the peasant sector.

It must be mentioned that the over-emphasis on physical
means of soil conservation, were much to the neglect of other
alternatives, such as biological methods like crop rotation,
use of compost and other manures, and so on. From an economic
point of view, it appears that the costs associated with the
labour demands arising from the strategy were far in excess of
economic returns realised on the small farm, especially in the
short run-period. The misunderstanding or neglect of farm
labour requirements and economics of smallholder agriculture
coupled with the harshness with which it was enforced, meant
that the revolutionary policy was seen, at a time of great
political awareness, as a manifestation of the oppressiveness
of the Federal regime. It was therefore greatly resented and
opposed, despite any long term advantages it may have brought
to the small farm community. Coulson (1981) observes similar
peasant dislike for colonial agricultural policies, during a
contemporary period, in Tanzania, where he records that some
peasants went as far as planting cassava upside down as a
passive resistance against the compulsory planting of cassava
as an anti-famine measure. (78)

(b) Bias Toward Settler Agriculture.

Within the Federal arrangement, in Zambia and Zimbabwe,
non-African agriculture was under Federal jurisdiction, while
African agriculture, and all types of agriculture in Malawi,
were under territorial jurisdiction. This meant the non-
African farmers in Zambia and Zimbabwe were serviced by the
resource rich Federal Government, and therefore, enjoyed more
privileges than their counterparts in Malawi. (79)

Although development of agriculture was given plenty of
"Lip service" at the time, the available evidence suggests
that the situation was diffirent in practice. For example,
in the 1957-61 Development Plan, the agricultural sector was
allocated a mere 1% of the budgeted expenditure.[80] To make
matters worse for the African farmer, the bulk of the funds
allocated to agriculture went into provision of research
services for improving production of crops grown exclusively
by the European settlers, such as tea, coffee, tung, etc.
Very little research attention was given to African cash crops
(except cotton mentioned above). Up to the
mid-sixties, use of fertilizer or improved seeds, was almost
absent on the African farm. The result was that there was a
wide gap between the technologies used in European agriculture
and African agriculture,[81] with the likely consequence that
productivity (both land and labour) fell in the latter sector.

(c) Labour Migration.

As already indicated above, at the time when the Federation
was being established, labour migration from Malawi was already
substantial. During the Federation   migration tended to
..increase. This was largely for two reasons. The first is that
membership of Malawi in the Federation tended to depress the
development of domestic industry as most of the industrial invest-
ments took place in Zimbabwe. This meant that there were limited
employment opportunities at home, for the growing labour force.[82]
Secondly, the coercive approach to African agricultural develop-
ment adopted by the Federal Governement left the African population
with very little incentives to take agricultural production serious-
ly. The result was that for the able bodied males, their best
chance was to migrate. As Hazlewood (1967) pointed out, during
the Federation there were as many Malawian wage workers abroad as
there were working within the country – with about 75% of those
migrants working in Zimbabwe, where they were exempt from the
restrictions on employment of migrant labour in the territory.[83]

It therefore appears that due to the poor economic prospects
at home, both in industry and agriculture, Malawian labour had no
option but to migrate – thus the country   came to be continually
regarded as a labour reserve by her Federal partners, as Humphrey

(1973) has remarked.[84]   And this state of affairs did not improve the prospects of improving African agriculture.

C. POST-INDEPENDENCE DEVELOPMENT STRATEGY

At Independence (1964), as Humphrey (1973), has pointed out, the new Government of Malawi was faced with a legacy from the colonial Government, that was largely characterised by its neglect of economic development, the economy being predominantly based on low productivity agriculture.[85]   The foremost task of the new Government was therefore to embark on a programme of rapidly increasing agricultural productivity in order to:

(a) improve the welfare of the people, and

(b) to generate investible funds for overall economic development.

However, the main question was how to achieve this dual objective with a reasonable degree of balance.

1. The Dual Approach to Agricultural Development.

As has already been indicated in the previous sections, Malawi's agricultural industry was characterised by an export oriented estate sector (European owned) heavily dependent on cheap labour for its survival; and a basically subsistence oriented and largely neglected smallholder sector.

Thus at Independence, it was recognised that continuation of development on the basis of the structure inherited would, as Chanock (1977) put it, have led to the expropriation of the African peasantry by settler or company estates and the creation of landless rural class forced by circumstances into colonial towns etc.[86]   For this reason, some of the politicians advocated a populist approach to agricultural development, whereby the major concern was to improve the performance of the average farmer (as opposed to the Master Farmers scheme advocated earlier).[87]   This approach was reflected in the 1962-65 Development Plan, which although it was drawn during the Federal period, it embodied most of the elements contained in the Malawi Congress Party Manifesto of 1961.[88]   This plan, among other things, emphasized the need to stimulate production within agriculture and industry, with the requirement to provide income to the masses, and so reduce in-

equalities in the distribution of income, wealth and economic power.[89] In other words, the plan advocated total commitment to a rural development strategy based on mass participation, with a major expansion of the cooperative movement as a key element. However, evidence indicates that during the early years of Independence, there was hesitation about following this path, which as Chanock (1977), remarked, was regarded as a line of development by which no society had yet succeeded in enriching itself.[90] As such the strategy was never implemented as stated. This hesitation is apparent in the lack of a distinct commitment to a particular development path between 1964 and 1970.

Because of the predominant position of the agricultural sector in the economy, it was inevitable that if any growth was to take place in the economy, the impetus had to be provided by this sector. The immediate reaction was therefore to emphasize export production. Because of the neglect and disarray suffered by the smallholder sector prior to Independence, the decision to boost export production, in effect, meant propping up the estate sector so that it could continue with its traditional role of export production.[91] Within the smallholder sector, the main concern was to gain the confidence of the peasant population, regarding the intensions of the agricultural department. This confidence had been badly damaged by the coercive and punitive measures employed by the Federal and colonial regimes in an attempt to inculcate modern farming practices in the peasantry. The tendency was therefore to let this sector develop by itself aided by the provision of extension advice to those willing to accept it and improving the marketing and delivery systems. The philosophy behind this approach was that, contrary to the previous strategy of coercing peasants to adopt better farming practices, they had to be taught by education and persuasion.[92]

Under this approach, the Government's role, as far as small-holder agricultural development was concerned, was largely confined to the provision of an enviroment conducive to small-holder agricultural production (through provision of infra-structure and other facilities) and to let the spirit of individual self-determination play its role. It was envisaged that adoption of new husbandry methods would be rewarded by higher farm outputs

while non-adoption would show itself through poor results. The demonstration effect provided by the adopting farmers would eventually work itself through the whole economy and improve agricultural productivity.

It is very important to recognise the fact that direct Government intervention on smallholder agricultural production in the form of regulations etc, during the Federal and Colonial eras, had produced a traumatic effect on the peasants. This had been used by the politicians to gain massive rural support. Thus after Independence, any development strategy that would have meant the Government taking a strong interventionist role, such as the Villagisation Scheme introduced in Tanzania soon after Independence, or the establishment of state farms in Nkrumah's Ghana, was likely to arouse new suspicions among the rural people, and therefore may have proved counter productive, as seems to have been the case with the two examples quoted above.[93] This meant that the Government had to take a low profile (at least in the initial period), in the field of smallholder agricultural development, with the extension services (which was trying to acquire a new image), taking the "take it" or "leave it" approach. This fact appears to have been ignored by earlier, analysts (eg. Humphrey, 1973, Thomas, 1975), in their analysis of the reasons why Malawi opted for a smallholder agricultural development strategy that placed emphasis on individual betterment as opposed to say a co-operative or collective approach.[94]

Thus while the need to improve the lot of the rural masses, in a situation where agricultural production provided the only means to earn a livelihood for the majority of the people, dictated the use of a populist approach to agricultural development the need to generate investible savings cautioned against a wholesale transformation of the economy from its predominantly export oriented estate sector to a predominantly peasant one.

A balance was therefore arrived at by following a dual approach, whereby the estate sector would spearhead the country's economic development, through export expansion, while the smallholder sector would ensure the country's self-sufficiency in basic foodstuffs. While it is recognised that a proper understanding of how the Malawian agricultural strategy has performed

over the years, requires an analysis of both the estate and
smallholder subsectors, this study, with its emphasis on rural
development, concentrates mostly on the smallholder sector. It
is hoped that this will in no way dilute the importance of the
findings emerging from the study, especially as they relate to
rural development through smallholder agriculture.

11. <u>Smallholder Development Strategy</u>.

From what has been stated above, it can be said that
agricultural development in Malawi is viewed in terms of provid-
ing investible finances for overall economic development
(through export expansion) and raising the general level of living
of the rural masses by increasing rural output of both food and
cash crops. This imposes a "double bind" on agriculture, which
has resulted in the dual approach mentioned above which is said
to emphasize the achievement of a sustained rise in productivity
per unit of land, and to provide a growth climate for both small-
holder and estate production.

In the field of smallholder agricultural development, three
main approaches to improving smallholder productivity have been
tried. Two of them were attempted simultaneously as a "twin
strategy", between mid 1960s and mid 1970s, viz:-

(i) The Integrated Programme Approach, and

(ii) the more General Approach.

Since mid 1970s, the "twin strategy" has been replaced by
the:-

(iii) National Rural Development Programme (NRDP).

(a) <u>The Integrated Rural Development Package (IRDP)</u>.

Its main objective was to provide focal growth points in the
form of high productivity projects, such as land development;
and irrigation projects and settlement schemes. The approach was
mostly capital and management intensive, and largely externally
finaced, aimed at raising marketable produce (both food and non
food), among the smallholding community in selected high potential
agricultural areas where integrated rural development projects
were established. The major features of these projects were: (95)

(i) Provision of infrastructure (roads, markets, water and health facilities, etc).

(ii) Provision of land improvement and conservation measures,

(iii) Irrigation development

(iv) Improved extension and other facilities

(v) Provision of credit facilities.

Four projects were established under this approach, ie:

(1) The Lilongwe Land Development Programme (LLDP).

(2) The Shire Valley Agricultural Development Project (SVADP)ᵥ

(3) The Karonga-Chitipa Rural Development Project (KRDP), and

(4) The Lakeshore Rural Development Project (LRDP).

In addition, several settlement schemes were established to supplement the large scale projects, but dealing with specific crops, eg;

(1) The Kasungu Flue-cured Tobacco Authority.

(2) The Smallholder Tea Authority.

(3) The Smallholder Sugar Authority.

(4) The Smallholder Coffee Authority.[96]

The major Projects formed the main thrust of this approach. Between them they were meant to cater for about 20% of the Malawian smallholder population (at full development). By 1973/74 they were accounting for about 57% of the funds committed to agriculture, as table 2 indicates.

Table 2.6 Government Agricultural Expenditure.

	(K millions)			
	1964	1967	1970-71	1973-74
Total Agricultural Development	0.51	2.24	5.61	8.24
Large projects	Nil	0.70	2.76	4.66

Source: Malawi Government Development Estimates. Cited in Thomas (1975), op cit, P38.

(b) The More General Approach.

This approach was applied in those areas not covered by the major Projects or Crop Authorities and Settlement Schemes. It

relied on gradual improvements in extension, land husbandry and
farm training, supported by minor rural development projects to
improve smallholder productivity, such as ox-training (for draft
power), dairy and poultry improvements and tea development, plus
agro-support facilities and marketing.[97]

(c) The National Rural Development Programme (NRDP)

Results tend to indicate that the "twin strategy" represented
by the two approaches outlined above, did not prove particularly
successful in raising smallholder output. For example, little
growth seems to have taken place in smallholder output since the
late 1960s. The little evidence available, coming from the major
projects, tends to suggest that the approach of concentrating
resources on a limited number of people and geographical places
is neither cost effective nor egalitarian. The more general
approach also proved ineffective in dealing with the whole rural
population (outside projects) and degenerated into a spotty and
selective programme that was limited to a few progressive elements
in the rural society.[98]

By 1976, it was recognised that the strategy could not be
relied upon to have a significant impact on the productivity of
the majority of the Malawian smallholding community. Out of this
realization was born the concept of the National Rural Development
Programme (NRDP).[99]

The idea behind NRDP is to stimulate rural development in a
manner that will produce balanced development between rural and
urban areas, while also generating growth in all geographical
areas throughout the country. It is stated that the programme
intends to achieve as rapid an increase as possible in local
production along existing cropping lines, by utilization of mini-
mal inputs. At the same time, the programme aims at a gradual
transformation of the farming system from its traditional pattern
to one with a larger proportion of the farmer's resources being
devoted to production of cash crops. The emphasis of this programme
is on producing a fairly immediate impact on smallholder production,
ie, improving production efficiency on small farms through provision
of inputs and better services to smallholders. As such the develop-
ment period for each of NRDP projects is said to be 5 years (after

which each project is expected to become self-financing) as opposed to the earlier projects under IRDP, that had, on average 10-11 years of development. The whole programme is supposed to cover the whole of rural Malawi within a 20 year period.[100]

The development process is said to be in two phases. The first phase involves an intensive campaign by the extension services, both on an individual and group basis. During this phase, farmers are advised to follow recommended practices of cultivation. At the same time, an attempt is to be made to encourage the farmers to form local clubs (at village level) and action committees through which they are supposed to concert their response to information reaching them from the extension and other development agents. The main idea here being to promote a spirit of togetherness and self-help among the rural population and involve them in the decision making process concerning local affairs.

The next phase involves the provision of credit facilities for necessary inputs to interested farmers (provided they belong to recognised farmers' clubs). From this point, subsequent efforts will be taken to help the adopting farmers to become predominantly cash croppers.

NRDP is said to mark a significant shift in rural development philosophy in Malawi. The previous strategy laid emphasis on the use of improved seeds and other output raising inputs. Credit was used as the main weapon (both within and outside the projects) for encouraging the use of husbandry practices recommended by the extension personnel. However, as pointed out above, the strategy did not produce broadly based improvements in smallholder prductivity; which is the prime objective of rural development strategy. If this objective is to be attained under NRDP, then it must be ensured that those elements which prevented its attainment in the previous strategy do not recur in the present one.

I II. Smallholder Productivity Since Independence.

Analyses of the economic performance of Malawi since Independence indicate that the economy did extremely well in terms of overall growth (Humphrey, 1973: Thomas, 1975; Ghai and

Radwan, 1980; and Acharya, 1981). The main source of this
growth is said to be rapid expansion of crop production for
export especially in the estate sector. However, all these
studies (except Acharya) have expressed concern over the
pattern of income distribution which has resulted from the
growth. Thomas (1975) and Ghai and Radwan (1980), have noted
the poor performance of the smallholder sector, resulting
mainly from the policy bias in favour of large scale
agriculture and progressive elements ("Achikumbi" - a recent
equivalent of Master Farmers) among the rural community. A
more recent study (Kydd and Christiansen, 1982), has expressed
pessimism over the future performance of the smallholder sector
under the current agricultural development strategy which is
essentially biased towards the estate sector, especially in its
allocation of land and financial resources.[101]

From these studies, it is apparent that the dual strategy
of agricultural development, which necessitated the encouragement
of both estate and smallholder development has not been success-
ful in achieving a balanced course in that estate development,
has been viewed more favourably. This is supported by Ghai and
Radwan's observation that the estate sector doubled its share of
total agricultural output and increased its share of monetary
output from just over 25% to 37% over 1964-78.[102] However,
the above studies (apart from that by Ghai and Radwan) do not
give an indication of what the results of the smallholder
agricultural development strategy have been within the small-
holding community. No attempt has been made to evaluate the
constraints to higher productivity faced by the smallholders.
While the previous studies provide valuable information on the
imbalance between the estate and smallholder sectors, there is
need for more information about the state of affairs in the
smallholder sector, to enable formulation of more appropriate
smallholder agricultural development strategy. This study
therefore, intends to provide a step towards filling that gap,
by examining adoption behaviour in the Lilongwe Land Develop-
ment Programme, and how the programme has affected rural
welfare.

Notes - Chapter II

1. See for example, Pike, P. G.(1968), <u>Malawi: A Political</u>
   <u>and Economic History</u>, Pall Mall Press, London; Pachai, B.
   (1972), <u>The Early History of Malawi</u>,Longman, London;
   Williams, T.D. (1978), <u>Malawi, The Politics of Despair,</u>
   Cornell University Press, Ithaca and London; Rotberg, R.
   (1966), <u>The Rise of Nationalism in Central Africa,</u>
   Harvard University Press, London and Nairobi.

2. Most of the information on the topography of Malawi is
   taken from Agnew,S. and Stubbs, M. (1972), <u>Malawi in Maps</u>,
   University of London Press.

3. See, <u>Malawi Statistical Yearbook, 1979</u>, National Statistical
   Office, Zomba.

4. See, Pike J.G. (1968), <u>op.cit.</u>

5. See, <u>Malawi Statistical Yearbook,1979</u>, op.cit., p.59.

6. See, Malawi, <u>1977 Preliminary Census Report</u>, National
   Statistical Office, Zomba. The intra-census period rate of
   population growth is given officially as 2.9% per annum
   however, this includes an element of internal migration,
   therefore the natural rate of growth (which is net of inter-
   nal migration) of 2.6% per annum, is sometimes quoted in
   official reports as the appropriate rate of growth for this
   period.

7. See, Malawi, <u>National Sample Survey of Agriculture</u>, 1968/69,
   op. cit., Tables R4.1 - R4.3

8. Kydd, J.G. and Christiansen,R.(1982), "Structural Change
   in Malawi Since Independence: Consequences of a Development
   Strategy Based on Large Scale Agriculture", in <u>World</u>
   <u>Development</u>, Vol 10, No. 5, pp.355 - 375.

9. Malawi, <u>National Sample Survey of Agriculture</u>, op. cit., p.2

10. After Independence, this region (especially the Lilongwe
    and Kasungu Plains) has experienced a rapid expansion of
    estate agriculture, as the country has tried to expand the
    production of tobacco.

11. It must be mentioned that Malawi's traditional export
    crops, tea, tobacco, cotton and,to a certain extent,
    groundnuts, have served the country well in terms of
    foreign exchange earnings. However, there is growing
    concern that the country has not done all that it could
    have done in order to diversify into new crops and new
    rural activities. The emergence of sugar cane as one of
    the major crops, over the past decade, is a welcome
    development, and it holds some potential for smallholder
    participation.

12. There is growing speculation that deposits of oil may be present under Lake Malawi.

13. Agnew, S. and Stubbs,M., op.cit.,p.14

14. See, Malawi, Statistical Yearbook, 1979, op.cit., p.89.

15. Based on 1977 Preliminary Census Report, op.cit.

16. Comparable figures on population density (mid 1979) for other East and Central African countries are as follows:

country	Number of persons per sq. Kilometre
Zambia	7.4
Tanzania	19.0
Zimbabwe	18.2
Kenya	26.2
Mozambique	13.1

NB. Calculated from World Bank (1981 a), op.cit., Table 1, p. 143.

17. See, World Bank (1981 b), op.cit.,Table 19.

18. Ibid.

19. 1977 Preliminary Census Report, op.cit.

20. See, Statistical Yearbook, 1979, op.cit., p.53.

21. Adopted from Kydd and Christiansen.(1982), op.cit, Table 8 p. 368.

22. See, Ghai and Radwan, op.cit.

23. See, Kydd and Christiansen (1982), op.cit..

24. See note 1.

25. For an account of Livingstone's expeditions in Central Africa, see, Livingstone, David (1887), Expeditions to the Zambesi and its Tributaries,1858-1864,John Murray, London; Pachai, B. (1973), Livingstone Man of Africa:Memorial. Essays, 1873-1973, Longman, London.

26. Alexander Hetherwick (a Scotish Missionary who began work at Blantyre), expressed the view that the hope of British Central Africa was in the cultivation of its own soil by the hands of its own children, in a letter to the Editor of the Scotsman, 17th, February, 1903.

27. See, Pike (1968), <u>op. cit.</u>, p.173

28. See, Alpers, E.A. (1975), <u>Ivory and Slaves in East and Central Africa: Changing Patterns of International Trade to the Late Nineteenth Century</u>, Heineman, London.

29. See, Chanock, M.L. (1977), "Agricultural Change and Continuity in Malawi", in <u>The Roots of Rural Poverty in Central and Southern Africa</u>, edited by Palmer, R. and Parsons, N ., Heineman, London, p.400.
     Johnston's comments on African agriculture seem to be rather inconsistent. From another source, he is quoted to have stated that the Natives of Nyasaland were a peaceful and industrious people, excellent agriculturalists and great smiths. See, Tapela, H.M.(1979),"Labour Migration in Southern Africa and the Origins of Underdevelopment in Nyasaland 1891-1913," in <u>Journal of Southern African Affairs</u>, Vol. IV, No. 1, pp.67-80.

30. Boserup, for example, has clearly indicated the economic rationality of the slash and burn system of shifting culti-vation, in a land surplus situation, which prevailed in Malawi at the time. See, Boserup, E. (1965), <u>The Conditions of Agricultural Growth</u>, Allen and Unwin, London.

31. Krishnamurthy, B.S.(1972), "Economic Policy, Land and Labour in Nyasaland,1890-1914", in Pachai, B.(1972), <u>op. cit.</u>, (pp.384-404), p.385.

32. See, Williams (1978), <u>op. cit.</u>,p.57

33. See, Pike (1968), <u>op. cit.</u>,177.

34. See, Williams (1978), <u>op. cit.</u>,p.59.

35   See, Palmer, R.H.(1972), "Johnston and Jameson: A Comparative Study in the Imposition of Colonial Rule",in Pachai (1972), <u>op. cit.</u>, see also, Williams (1978), <u>op. cit</u>, pp.73-4. To illustrate the point that taxation was deliberately used to persuade Africans to work on the estates, Tapela quotes:
     ---"in order to make the result more certain, the cost of the Native's living is to be increased by taxation, so that they will be compelled to work for the white man in order to earn sufficient money to pay taxes. It may be added that in British Nyasaland this system has already been adopted."
     See, Tapela (1979), <u>op. cit.</u>, p.67, quoted from <u>Native Labour Commission</u>, British East Africa (Kenya), 1912.

36. See, Williams, <u>op. cit.</u>,p.85; Krishnamurthy, <u>op. cit.</u>,p.394; Vail, Le Roy (1977),"Railway Development and Colonial Underdevelopment: The Nyasaland Case", in Palmer and Parsons (1977), <u>op. cit.</u>,p.374.

37. See, Tapela (1979), op cit., p.69.

38. Vail (1977), argues that contrary to the belief that
    railway development would be beneficial to the protect-
    orate's economy, it actually hampered the country's
    progress mostly due to the large debt it brought about,
    and also the priority given to the interests of the railway,
    vis-a-viz all other considerations. See, Vail (1977),
    op cit.,pp. 365-395; and also Vail (1975), "The Making of
    an Imperial Slum: Nyasaland and its Railways, 1895-1935",
    in Journal of African History, Vol. 16, pp.89 -112.

39. This was done through the Employment of Natives
    Ordinance of 1909; see, Krishnamurthy (1972), op cit.,
    p.397, and Williams (1978), op cit., p.76.

40. "Thangata", was a quasi-feudal arrangement under which
    peasants had to supply labour to the estate owner in exchange
    for use of a plot of land. See, Kydd and Christiansen (1982)
    op.cit. p. 5. For a more elaborate account of the
    mechanisms of "Thangata" in colonial Malawi, see Kandawire,
    J.A.K.(1979), Thangata: Forced Labour or Reciprical
    Assistance? , Research and Publications Committee, Univers-
    ity of Malawi, Hether-wick Press, Blantyre.

41. See, Rotberg (1966), op. cit. p.34.

42. For example, Williams (1977:66), mentions that on the
    65,000 hectares of the Bruce Estates, there were about
    350 tenants in 1895, about 15,000 in 1920 and over 30,000
    by the end of the second World War. A figure of 173,000
    Africans (about 49,000 families) living on estates as
    tenants in 1946, is quoted by Pike (1968), op. cit. p.188,
    quoted from the Report of the Nyasaland Land Commission
    (The Abrahams Report), Government Printer, Zomba, 1946,
    pp.15-17.

43. See, Nyasaland, Report of the Commission Appointed by H.E.
    The Governor to Enquire into-----the Native Rising Within
    the Nyasaland Protectorate, Government Printer, Zomba, 1916,
    p.5.

44. Failure to conform to the labour requirements of the "land
    lord", or to pay tax to the Government, usually resulted in
    the peasants' huts being burnt and/or their crops being
    destroyed by the tax collectors. In extreme cases wives
    and children were held as hostages. See, Palmer (1972),
    op. cit., p.306; also Rotberg (1966), op. cit., p.45.

45. For example, Vail points out that during the 1930s, it
    cost 97 pence per lb. to transport Malawian tobacco by rail
    from Limbe to Beira, while it cost 17 pence per lb. to
    transport Rhodesian tobacco by rail over a similar distance.
    See, Vail (1977), op. cit. p.387. Similarly, the tea
    industry suffered the same problems. Vail (ibid.),

reports that at one time, it was cheaper to transport tea by road from Limbe to Mocuba (in Mozambique) than by rail to Quilimane, making a saving of 14 shillings and 6 pence per ton. The Portuguese had promised further freight reductions that would bring the savings to 42 shillings and 11pence per ton, but the railways urged the Government to close the border to prevent further competition.

46. See, Krishnamurthy (1972), op. cit., p.385.

47. In most cases, the income from such hectarage was just sufficient for meeting tax obligations.

48. See Krishnamurthy (1972) op. cit., P 390.

49. Oral evidence from field work.

50. In actual fact, the problem of soil erosion and other associated aspects, which are the consequences of rising land pressure, were partly the result of the land alienation, that is, the peasants were using cultivation practices which were suitable in a shifting cultivation context, when actually permanent cultivation was imposed on them by land scarcity.

51. See Krishnamurthy (1972), op. cit., P 390.

52. See Rotberg (1966), op. cit., P 32.

53. See Williams (1978), op. cit., P 85.

54. Ibid, P 85.
Williams attributes most of this boost in peasant production, despite the many impediments, to the availability of cheap consumer goods, mostly from Japan, which acted as an incentive to higher peasant production. Ibid, P 89.

55. Krishnamurthy (1972), op. cit., P386.

56. The Hammond Report was the result of a commission of enquiry set up to investigate how to initiate development in the Protectorate following the disturbances of the 1915 Native Uprising, and the effects of the 1st World War.

57. See Kettlewell, R.W. (1965), "Agricultural Change in Nyasaland: 1945 - 1960", in Food Research Institute Studies, Vol.5, No. 3 (PP229 - 285), P 243.

58. For more detailed discussions of the effects of migration
    on the Malawian economy, see, Boeder, R.B. "The Effects
    of Labour Emigration on Rural Life in Malawi" , in _Rural
    Africana_ , Vol. 20, PP 37-46; Read, Margaret (1942),
    "Migrant Labour in Africa and its Effects on Tribal Life",
    in _International Labour Review_, Vol. 45, No. 1; Sanderson,
    F.F. (1960), _Nyasaland Migrant Labour in British Central
    Africa,1890-1939, M.A. Thesis_, University of Manchester;
    Tapela, (1979), _op. cit._

59. This is the line of argument adopted by Oberái ,A. and
    Singh,M. (1982), in their analysis of the effects of
    migration on the rural economy. See, Oberai , A. and Singh,
    H. K . Manmohan (1982), "Migration, Production and
    Technology in Agriculture: a Case Study in the Indian Punjab",
    in the _International Labour Review_, Vol. 121, PP.327-343.
    However, their analysis refers largely to rural urban
    migration within the same country, whereby some linkage
    effects exist between the two sectors. But where the
    outward migration is to another country, as is mainly
    the case in consideration, there is a leakage which breaks
    or weakens this linkage effect, thereby preventing the
    positive effects of migration from having full effect in
    the rural areas. See, Chapter VI for a more developed
    discussion of this issue.

60. Personal observation.

61. For example, following the depression of the 1930s, the
    administration deliberately depressed tobacco prices (one
    of the crops in which African participation was tolerated)
    each year, to provide funds for price support should need
    arise. Such acted as an inhibiting factor to peasant
    tobacco expansion. See, Chanock (1977), _op. cit._, P.406.

62. This is supported by the evidence provided by Kettlewell
    (1965), _op. cit._, P.239, when he cites estimates that in
    the late 1950s, some 20 - 25% of the adult male population
    was engaged in wage employment outside the protectorate,
    and that in some districts, it was as much as 60%.

63. See, Smith, L.D. (1976), " An Overview of Agricultural
    Development Policy in Kenya", in Heyer et al (eds.),
    Agricultural Development in Kenya, Nairobi, PP.111-151.
    See also Acharya,S.N. (1981),"Perspectives and Problems
    of Development in sub-Saharan Africa", in _World Development_,
    Vol. 9, No. 2, PP.109-147.

64. See, Chanock (1977), _op. cit._,P.406.

65. See, Vail (1977), _op. cit._,P389.

66. Tapela (1979), _op. cit._,P.72.

67. _Ibid._ P.75

68. See, Chanock (1977), _op. cit._, P.398.

69. For a detailed discussion of the economic arguments for the Federation, see Hazlewood, A.(1967), " The Economics of Federation and Dissolution in Central Africa", in Hazlewood (ed.), _African Integration and Disintegration_, Oxford University Press, London,PP.185-250.

70. These issues are well discussed by Viner, J.(1950), _The Customs Union Issue_, New York. See also Sodersten,B. (1970), _International Economics_, the Macmillan Press, London, PP 431-7.

71. See, Hazlewood (1967), _op.cit._,P.213.

72. _Ibid_, PP.195-8 and 213-4.

73. See, _Nyasaland, Capital Development Plan,1957/61_,Govenment Printer,Zomba,1957.

74. See, Heyer,J. (1975), " Agricultural Development Policy in Kenya, from the Colonial Period to 1975", in Heyer et al, (1981), _Rural Development in Tropical Africa_, Macmillan Press, London; see also Kettlewell (1965), _op. cit._ P. 244.

75. These village schemes were established in the Southern and Central regions, largely as experimental exercises in the diffusion of new farming practices. See Kettlewell (1965), _op. cit_. P.244.

76. _Ibid_.P. 254.

77. _Ibid_. P.275

78. See, Coulson, A. (1981), " Agricultural Policies in Mainland Tanzania, 1946-76", in Heyer et al, _op. cit_. P.56.

79. See, Hazlewood (1967), _op. cit_. P214.

80. See, _Nyasaland, Capital Development Plan_, 1957/61, op. cit. Appendix A, P.18. Only £126,000 of the £12,817,000 estimated expenditure was allocated to agriculture.

81. See, Chanock (1977), _op. cit._, P.403.

82. During the Federation, there was an increasing tendency to employ Europeans at all supervisory and managerial levels, both in the civil service and in industry, thus relegating the Africans mostly to labouring and other petty jobs.

83. See Hazlewood (1967) _op. cit._, PP 221 - 222. This applied only to those in paid employment.

84. Humphrey,D.H. (1973) "Malawi's Economic Progress and Prospects", _East African Economic Review_, Vol. 5 No. 2 PP71 - 104.

85. <u>Ibid.</u> P 71

86. See, Chanock (1977), <u>op.cit.</u> P 407

87. Thomas (1975), attributes this populist approach to Development to Dunduzu Chisiza, who is considered to be one of the main architects of the 1962-65 Development Plan, see, Thomas (1975), " Economic Development in Malawi Since Independence", in <u>Journal of Southern African Studies</u>, Vol. 2, No. 1,(PP 30 - 51), pp 34 and 37.

88. The Malawi Congress Party took control of the Government in 1961 after it had a sweeping victory in the Pre-Independence elections held in August 1961.

89. Thomas, <u>op. cit.</u>, P 35.

90. Chanock, <u>op. cit</u>, P 407.
For a different view of the reasons for the discontinuation of the populist approach and the adoption, instead of the individual approach, See Humphrey, (1973), <u>op. cit.</u>, P 72, also Chanock, <u>op. cit.</u>, P 407.

91. The Malawi Finance Minister in 1965 is quoted to have said that the Malawi Government would give every facility and encouragement to the production of agricultural commodities by large estates with commercial capital. See, Chanock, <u>op. cit.</u>, P 405.

92. See Pike (1968) , P 159.

93. See Acharya (1981), <u>op. cit.</u>, P 122.

94. Both Humphrey and Thomas are of the opinion that the individualistic approach was adopted because of the strong respect for the virtues of private enterprise and individual achievement by the Political leadership, see Humphrey (1973) <u>op. cit.</u>, P 33.

95. See Malawi, <u>National Rural Development Programme: Policies, Strategy and General Features,</u> 1978.

96. <u>Ibid</u>, PP 31-36.

97. See Kliest, I.J. (1980), "Development Policy and the Small Farmer in Malawi: The Growth of Inequality", <u>The Rural Agricultural Sector,</u> Institute of British Geographers - Developing Areas Study Group (Papers presented at the New-Castle Upon Tyne Meeting, April 1980, Edited by E.S. Simpson PP 37-46.

98. This view is shared by both Thomas (1975: 38-39) and Kliest (1980: 37-38).

99. See <u>NRDP: Policies, Strategy and General Features,</u> op.cit.
P 47.

100. <u>Ibid</u>, P 47.

101. Kydd, J.G. and Christiansen, R (1982), <u>op. cit.</u>,

102. Ghai, D. and Radwan, S. (1980) <u>op. cit.</u>

CHAPTER III

MALAWI'S RURAL DEVELOPMENT STRATEGY

1.   The Concept of Rural Development

A.   The Case for Rural Development

Rural development as a specific strategy of development
has found general acceptance in the developing world.   This
seems to be for two main reasons:-

(a)   The apparent failure of the industrialisation or
       "modernization" strategy to spread the benefits of
       development to the majority of the population in
       the developing countries.[1]

(b)   The need to raise resources for overall development
       (especially industrial development) in these
       countries where the rural sector predominates in
       the economy.[2]

It has been claimed that the pursuit of the "industrializa-
tion" strategy in the developing countries over the past two
decades or so (1950-1970), has been characterised by:[3]

(a)   A slow rate of transfer of people out of low pro-
       ductivity agriculture and related activities into
       more rewarding activities.

(b)   A vast majority of people in the rural areas
       experiencing poverty.

(c)   Existence of underutilized resources in rural areas
       which could be used to improve rural welfare.

Because of the observation that a vast majority of the
poor people in the developing world(especially Asia and Africa)
live in rural areas, there has been an increasing demand for an
approach to development planning in the third world which
emphasizes the improvement of the standard of living of rural
people.   Thus rural development has become a strategy designed
to improve the economic and social life of a specific group of
people, "the rural poor".[4]   Its aims are said to be, among other
things:-[5]

(a)   To create the long term economic social and political
        viability of rural communities whose existence is
        based on a principle of self reliance.

(b)   To expand opportunities for productive work in rural
        areas, ie. diversification of the rural economy.

(c)   Continued up grading and improvement of the natural
        environment of rural communities.

(d)   Providing for the satisfaction of locally determined
        needs.

(e)   Achieving balanced rural-urban development.

It has been suggested that since rural development is intended
to reduce poverty, it must be clearly designed to increase
production and increase productivity.[6] Because agriculture
is the predominant activity among rural populations, in most
developing countries, agricultural development has become a
"sine qua non" of rural development,[7] although such aspects
as health, education, improved nutrition, etc., are recognised
as being not only necessary for improving physical well being
and quality of life of rural people, but also as indirectly
enhancing the productivity of rural people and improving their
ability to contribute to the national economy.[8]

    From the above, it could be said that the concept of
rural development attempts to integrate growth and welfare
economics concepts for the purposes of the development of the
third world whose development problems and circumstances are
viewed to be different from those which the present day
developed countries faced at the time they were embarking on
the development path.[9]

B.   Critique of the Rural Development Strategy.

    The strategy of rural development is not without criticism.
Although its exponents (the World Bank in particular) have
stressed the above reasons for its pursuit, the critics have
not entirely accepted all of them as genuine.

(a) <u>External Intervention.</u>

Heyer et al (1981), for example, argue that rural develop-
ment tends to imply "planned change by public agencies based
outside the rural areas", who represent development of the
rural sector as an impossibility without their intervention.[10]
They also allege that rural development agencies tend to regard
themselves as developing or emancipating the rural poor whom
they accuse of being obstacles to their own development, or
unable to grasp the benefits of development until exposed to
persuasion that it is indeed in their interest. Due to this
interventionist tendency, it is argued that the idea that rural
people can in fact initiate rural development is not considered,
nor are the efforts of the rural poor to do so always welcomed.
Such conceptions, according to the critics , are not justifiable
as they in fact contradict historical evidence, and are only
used to mask the real motive behind the need for this
external intervention.   According to this group of critics,
the intervention is necessary to fulfil the need for govern-
ments and international companies, etc, to control the conditions
under which peasants sell and produce their crops, in an attempt
to replace peasant production by capitalist production.[11]

(b) <u>Incompatibility Between Means and Objectives.</u>

It is argued that, with some exceptions, it has always been
observed that the strategy of rural development does not achieve
its objectives.   This failure to achieve objectives has been
largely attributed to incompatibility, first between the object-
ives themselves , and secondly between the objectives and the
means used to promote rural development.[12]

(c) <u>Assumption that Improved Peasant Production for the Market
will Improve Peasant Welfare.</u>

It is further argued that in the rural development strategy
is implied the assumption that increasing peasant production for
the market will:[13]

    (i)   Improve the welfare of the rural people.

    (ii)   Increase their contribution to the national economy
         (supposedly restricted by isolation), and hence aid
         the task of national development.

The critics point out that such an assumption implies that poverty is the consequence of isolation, which is not valid.[14] They cite evidence of persistent or increasing rural poverty in some circumstances despite substantial increases in productivity and production for the market.[15] It is therefore argued that in fact, enhancing the contribution of the rural poor to the national economy becomes the means by which rural development is to be achieved, ie. :

> "Thus those involved in rural development are concerned to increase agricultural production to supply urban and international markets. They are concerned to earn foreign exchange and to extract revenue to finance public and private consumption and investments. This is not necessarily compatible with the interests of rural producers."[16]

According to this line of argument, there is a form of collusion between national Governments and international agencies who finance rural development, against the rural poor. As such, the rural poor may not necessarily be the beneficiaries of rural development.[17] In other words, rural development becomes a means through which peasants are made to finance industrial development to serve the needs of the domestic elite as well as those of the capitalist world.

(d) Other Criticisms.

Other people view the rural development drive as a deliberate attempt by the "Western" or "industrialized" world to pre-occupy the developing nations with agricultural production in order to fend off competition for their manufactured products.[18]

By far the most serious criticism of rural development (in this author's view), is the implied assumption that once an area has been designated as a rural development area, and a rural development project put under way, then all the inhabitants of that particular area will benefit from the rural development effort.[19] But as Stewart(1975), rightly points out, the "net discounted rates of return", which are meant to measure the benefits of the development effort to the whole community, ignore the fact that the costs and benefits do not necessarily refer to the same people. Poor peasants are not usually among the beneficiaries.[20] This is the theme picked up by this study in analysing rural development in Malawi.

Despite these strong criticisms of the rural development strategy, this study takes the view that a rural development strategy, if properly planned, implemented and monitored, can go a long way towards meeting the development needs of the rural poor. A review of the rural development literature indicates that while the basic objective of the strategy is to promote increased agricultural productivity among the rural poor, what has happened is that resources (such as modern inputs, farm credit,etc.), have been channeled towards the relatively better off, leaving the poor unaffected, or in some cases, worse off.[21] To say that because the rural development strategy has not always benefitted the rural poor as anticipated, then it must be a bad strategy and should be abandoned, is certainly an overe- action akin to throwing away the dirty water together with the baby. What is needed is to ask the question similar to the one posed by Lele(1975), ie., if the aim of promoting peasant agricul- tural productivity is to alleviate rural poverty, then how can the development effort be extended to the low income subsistence population.[22]

It is today generally agreed that for agricultural develop- ment to stimulate overall development, it must be broadly based.[23] This means that it should not be used to ensure only that agricul- ture fulfils its traditional functions in the development process (provision of food and raw materials for industrial expansion, provision of labour and capital to industry and provision of a market for industrial goods),[24] although these functions are still important. In addition, agriculture should provide a vehicle through which the majority of the rural population can participate in the development process. Kotter (1974), has argued that the main problem of rural poverty is that the majority of the rural poor do not participate in the development process, whether passively as recipients of goods and services or actively as producers; in particular, they do not participate in the decision making process.[25] Chinn(1979), seems to echo Kotter's argument when he points out that a common diagnosis of rural poverty appears to be that agricultural productivity is low on the small farms- because of the limited access to inputs

by these small farmers. The main reason for this is said to
be that farm households find it impossible to generate sufficient
surplus funds over and above consumption needs to purchase
productivity raising inputs.[26]

What emerges from the above analyses is that most of the
rural development efforts fail to enlist the participation of
the rural poor. Such a finding suggests that if the participation
of the rural poor in the development efforts is to be enhanced,
their purchasing power must be raised so as to facilitate their
access to productive resources and essential services. This is
the issue to which this study will address itself in analysing
the rural development effort in LLDP.

2. <u>Smallholder Agriculture and Rural Development in Malawi</u>

A. <u>The Rural Development Policy Outlined</u>

At the attainment of Independence in 1964, or to be more exact, at the attainment of internal self-government in 1962, the foremost task of the Malawi Government was to launch a Development Plan (the 1962-65 Development Plan), which for all practical purposes, was committed to rapid agricultural development, with the aims of:

(a) improving rural welfare.

(b) generating investible funds for overall economic development.[27]

In the previous chapter, a brief outline of the strategies adopted to pursue these objectives, was presented. In this chapter, a detailed examination of the current smallholder agricultural development strategy (which forms the basis of Malawi's rural development strategy) will be attempted. Particular emphasis will be placed on examining the impact of the smallholder agricultural development strategy on the elimination of rural poverty. However, before doing this, it will be usefull to examine the aims and objectives of both rural development and smallholder agricultural development in Malawi. For it is only after these two issues have been clearly understood (from the Malawian point of view) that a proper appreciation of the Malawian strategy of development can be made.

I. <u>Aims and Objectives of Rural Development in Malawi.</u>

In Malawi, like in most of the developing world, rural development occupies a prominent position in the national development plans. But, although every Development Plan for Malawi since the 1962-65 Plan, has stressed the priority of and need for rural development, it is only in 1978 that the aims and objectives of the country's rural development strategy were spelled out.

According to the <u>National Rural Development Programme:</u>
<u>Policies, Strategy and General Features</u> (1978), rural
development is said to be:

> "....the primary social and economic objective of
> Government. Beyond the aim of raising agricultural
> productivity, it is also conceived as an effective
> vehicle for Government's objective of redistributing
> incomes in favour of the rural poor".(28)

Thus rural development is considered to have both growth
and redistribution objectives. However, from the stated
objectives of NRDP, which represents the current rural develop-
ment strategy, this conceptualization does not appear to come
through. The main objectives of NRDP, are said to be:

(1) " To increase the general level of the Malawian smallholder
production, in particular to increase the production of
cash crops for export and to feed the growing urban popula-
tion.

(2) To provide inputs and services necessary to allow small-
holder production increases, with particular emphasis on
productivity per unit area.

(3) To preserve natural resources........." (29)

The striking feature about the objectives of NRDP is that,
although it is stated that the redistribution of income in
favour of "the rural poor" is part and parcel of the overall
objective of rural development (which NRDP is meant to serve),
it does not feature in the specific objectives of NRDP. At the
same time, no definition of the rural poor is provided, nor is
an outline of how NRDP intends to carry out the redistributive
function given. This omission of the definition of the target
group and the absence of a clearly defined strategy for achieving
an egalitarian income distribution in the rural sector can be
interpreted in two ways. In the first place, it can be interpreted
to mean that overall low productivity in the rural areas is taken
to be synonymous with rural poverty in the Malawian context, and
that raising overall agricultural productivity is an aspect of
primary concern while the distributional aspect occupies a sub-
sidiary position. This view is supported by a number of official
statements eg:

"The vast majority of Malawi's population depends for its
livelihood on peasant farming. Out of an economically
active population of aproximately 1.5 million, less than
150,000 are in paid employment in Malawi and about 250,000
are working in neighbouring countries. This leaves over
one million workers and their dependents - whose only
income is derived from small scale agriculture. It is in
this sector that the national development,effort is being,
and must continue to be, concentrated."(30)

In addition, it is stated that:

"A statement of more detailed objectives must therefore be
concerned primarily with increasing agricultural product-
ivity. " (31)

These statements imply that in the situation under review,
the whole smallholder sector was the target of the development
effort, and that raising overall smallholder productivity was
seen as the main way to combat rural poverty. Considering the
state of affairs in the smallholder sector at the time the above
statements were made (1971), there can be very little disagree-
ment with this view. At the time, the whole smallholding
community was an impoverished mass (as the historical review
has suggested), and therefore the objective of raising overall
smallholder productivity was foremost in the rural development
strategy.

The World Bank (1975a) defines the "rural poor" as the
group which
"includes small scale farmers, tenants and the landless". (32)

In Malawi, it is seen that due to the abolition of Thangata
in 1962, and the prevalence of the costomary land tenure system
(covering about 80% of arable land), there was hardly any land-
lessness in the rural sector during the early years after
Independence. At the same time, there was no tenancy arrange-
ment which could be said to have been causally linked with rural
poverty. Thus it seems quite plausible to suggest that in Malawi,
at the time, the "rural poor" were exclusively small scale farmers
(even agricultural workers were heavily dependent on their family
plots, for most of their livelihood). Hence the whole smallholding
community, which up to the time was hardly undifferentiated (apart

from a few elements who were the remnants of the colonial Master
Farmers' Scheme), was the target group of the rural development
effort. This tallies with the populist approach to agricultural
development emphasized in the 1962-67 Development Plan.[33]

Secondly, the above omissions could be interpreted, as implied
by critics of the Malawian development strategy, as a clear mani-
festation of the lack of intention, on the part of the development
planners to initiate broad based development. The country is
alleged to have deliberately promoted an "elitist" approach to
agricultural development, which emphasizes the provision of
resources to a few selected individuals.[34] This view is advocated
mostly with regard to the pattern of development that has emerged
in the country.

However, this author is of the opinion that the situation
warrants a more careful analysis. The fact that a particular
pattern of development has emerged does not necessarily mean that
it was willed right from the beginning. It could be due to a
number of reasons. For example, initiating broad based develop-
ment, among the then undifferentiated rural sector within a
growth context may have been the genuine aim of the Government.
However, studies of the "green revolution" have indicated that
innovation adoption, by its very nature spreads differentially
among the rural people.[35] This is largely due to the fact that,
although the rural sector may seem to be economically undifferent-
iated, there are bound to be interhousehold differences in such
aspects as say labour availability, soil fertility, proximity to
commodity and input markets etc. These differences imply that
some households will have an advantage in innovation adoption over
others. And, if the programme which fosters the innovation
adoption is not properly monitored or implemented, rural different-
iation is likely to occur as it is alleged to have done in the
situation under review. Thus the end result of a policy need not
be due to the policy itself, it could be the result of implement-
ation or monitoring failures.[36] In Chapter VI we shall attempt,
with the help of a number of models, to indicate how interhousehold
differences in labour availability could have affected the adoption

behaviour of various household categories, and hence their income
and welfare positions.

B.   NRDP and its Implications for Rural Poverty Elimination

I.   NRDP and IRDP Compared.

Although it is stated in the policy statement that NRDP is
less capital intensive than the IRDP which preceded it, in terms
of total development costs, the available data does not bear this
out.[37] As table 3.1 indicates , the costs per farm family, per
year, for the four earlier (IRDP) projects - excluding LLDP Phase
iv, range from K22 to K30 (1978 prices), assuming that all
families within the project areas participate. The corresponding
figures for NRDP - phase I projects fall within the range K17-59
(also 1978 prices), here again, assuming that everybody partici-
pates. However, in reality the participation rate in the IRDP
projects was very far from 100%. The appraisal estimates of
participating households ranged from 11.6% of households in
KRDP to 38.5% in LRDP, giving annual development costs per
participating family that ranged from K67 in SVADP to K219
in KRDP.[38]

Thus unless NRDP achieves a much higher participation rate
(say in excess of 50% of households in the project area), the
development costs per participating farm family may not be signi-
ficantly lower than those for the IRDP projects- as is indicated
in tables 3.1 and 3.2. This means that NRDP's success will very
much depend on the extent to which it will embrace the farm
population. This in turn , will depend on the system of input
distribution and the type of agricultural activities being
supported. The importance of these two aspects on the extent
of farmer participation will be illustrated in chapter VI with
the experience of LLDP.

Table 3.1 The Four Major Integrated Rural Development Projects

Name	Total costs at Development (K.Mn.)	No. of Years	Estimated No. of Farm Families	Cost/Farm Family Per Year (K.)	Estimated No. of Adopters	Estimated Cost per Adopter (K.)
LLDP. (I-III)	23.3	10	103,600	22.2	31,000 (30%)	74.1
SVADP	106.4	14	72,700	26.1	28,000 (38.5%)	67.3
LRDP	22.9	14	54,645	30.0	21,000 (38.4%)	77.9
KRDP	12.6	12	41,350	25.4	4,800 (11.6%)	218.7

Source: NRDP, Working Paper No. 38, P.2

Table 3.2 NRDP Projects (Phase 1)

Name	No. of Years	Estimated Total Cost at Development (K.Mn)	Cost/Farm Family per Year (K.)	Estimated costs per Adopting Family	
				With 40% Adoption (K.)	With 60% Adoption (K.)
LLDP.-IV	5	8.4	104.4	260.0	175.5
Ntcheu	5	3.5	17.0	42.5	28.3
Thiwi-Lifidzi	5	2.9	17.0	43.1	28.8
Mzimba	5	2.9	37.3	93.3	62.2
Henga	5	3.2	59.0	147.6	98.4
Ntchisi	5	3.7	36.9	92.4	61.6
Phalombe	5	6.0	27.0	67.6	45.0
Mwanza	5	3.1	48.0	120.8	80.5
Kawinga	5	3.9	28.2	70.4	46.9

Source: NRDP, Working Papers No. 38, Table 3.

II. A Critical Review of Rural Development Strategy in Malawi.

NRDP is said to mark a significant shift in rural development philosophy in Malawi, as pointed out earlier. Up to 1976, the main emphasis was on the integrated projects approach, whose main aim was to stimulate rapid production increases of particular crops (eg cotton in SVADP, maize, groundnuts and tobacco in LLDP, and rice in KRDP), to meet the national objectives of food self-sufficiency and expansion of export production. Emphasis was laid on the use of improved seeds and other output raising inputs. Credit was used as the main weapon for enforcing recommended husbandry practices among the smallholding community in the project areas. Outside the project areas the extension services were relied upon to disseminate information on improved crop and animal husbandry practices.

However, due to insufficiency of extension personnel, and the emphasis on rapid productivity increases, there was a tendency for the extension services to be concentrated on the more progressive elements of the rural population the aim being to bring about a demonstration effect. However, as already indicated above, the available evidence tends to suggest that smallholder production during this period was rather disappointing both on a national and project basis. For example, between 1964 and 1978, smallholder production (at constant prices) is said to have grown at about 3.9% per annum, against a population growth rate of about 3%, thus giving a per capita growth rate in smallholder output of 1.0%.[39] This compares with an annual rate of growth of about 11.1% achieved in the estate sector, during the same period.[40] One important aspect is that the said growth in agricultural output (in both sectors) was more a result of hectarage expansion than rising labour and/or land productivities. This meant that as population continued to grow, more and more marginal land was being brought into cultivation - therefore resulting in declining productivities.

This meant that there was limited scope for smallholder output growth being higher than population growth without a widespread adoption of innovations in the smallholder sector.

It was therefore necessary to broaden the base of smallholder development beyond that covered by the few projects and the selective general approach, to that envisaged by the scope of NRDP.

Although NRDP represents a new approach to smallholder agricultural development in Malawi, in terms of say, extent of geographical coverage and the intensity of activities, the overall agricultural strategy remains intact, that is, to increase the production of cash crops for export and meet growing urban food demand.[41] This implies that smallholder agricultural development in Malawi is strongly linked to the industrialisation strategy, with the further implication that rural welfare aspects occupy a secondary position. This is reflected in other national policies that have a strong bearing on NRDP's success such as:

(1) The export promotion policy - to boost foreign exchange earnings, and

(2) Farm output pricing policy.

All these have wider implications on rural welfare. The success of NRDP to improve rural welfare will very much depend on how well reconciled these other policies are to those of NRDP.

C. The Impact of Other National Policies on NRDP.

1. Export Promotion Strategy: Its Implications on Smallholder Agricultural Development.

Table 3.4 indicate that between 1964 and 1977, Malawi's agricultural exports rose from K22.9 million to K178.6 million (at current market prices). However, it is seen that the smallholders' share of agricultural exports declined from 53.4% of total exports in 1964 to 34.3% in 1977, and there was a corresponding rise in the estate sector. This reflects, more than anything else, the rapid expansion of the estate sector. While it could be argued that at Independence the country had ample idle resources of both land and labour, and that the expansion of the estate sector had little or no effect on smallholder

agricultural production, now more than 10 years later, a stage
might have been reached (or is about to be reached) whereby
the two sectors compete for the same resources of land and
labour, and to some extent, financial capital. For example,
estate production of Burley and Flue-cured tobacco (under the
visiting tenant system) has expanded considerably in the Central
Region (including LLDP) and this is the traditional smallholder
tobacco growing area. Such an expansion given the rising pressure
on the land , is likely to have led to smallholder producers
being pushed onto more marginal land, where productivity is low.
At the same time the technological gap between the two sectors
brought about by colonial policy of favouring settler farmers
and the current emphasis on increasing productivity per unit
of land, has meant that the estate sector has had a lion's share
of the available resources thus perpetuating the gap in
productivities between the two sectors. Unless the NRDP strategy
does contain some elements of positive discrimination in resource
allocation towards the smallholder sector , so as to redress the
traditional technological bias, an export promotion strategy
per se , which merely lets the two sectors   operate side by
side, may actually undermine the smallholder agricultural deve-
lopment strategy with the estate sector "crowding out" the
smallholder sector from export production.[42]

It seems that the present bias in the field of export
crop production in favour of the estate sector, apart from being
a hangover from colonial legacy, has no economic justification,
especially when we consider the type of crops involved. Tea,
tobacco and sugar-cane, the main estate crops and leading
exports of the country have all been seen to be produced
successfully by smallholders in other countries.[43] Kenya, which
shared the same colonial legacy as Malawi, has managed to res-
tructure a good deal of the export crop production from the
estate sector to the smallholder sector, and is today hailed
as one of the success stories of smallholder agricultural
development in Africa.[44] After all , evidence from Malawi,

indicates that Burley tobacco, one of the country's leading export crops, was a smallholder crop from 1948 to 1952.[45]

This implies that smallholder expertise for its production already exists, but it is only hindered by lack of financial resources.

Table 3.3 _Agricultural Exports   1964 - 1977_[a]

(K. Million , Current Market Prices)

Sector /	Year						
	1964	1970	1973	1974	1975	1976	1977
Smallholder	12.2	17.9	27.6	32.0	31.0	46.4	61.2
Estate	9.8	19.7	35.5	50.8	65.4	86.8	107.6
other Exports	0.9	3.1	5.7	6.7	7.6	8.9	9.8
	22.9	40.6	68.8	85.5	104.0	141.0	178.6

(a) From 1978, the sectoral composition of the agricultural exports is not available.

Source: Economic Reports, 1974-1977, EPD.

11. <u>Pricing and Marketing Policy and Smallholder Production</u>

(a) <u>The Role of Agricultural Marketing and Pricing Policy in the
Development Process: The General Case</u>.

Agricultural pricing and marketing policies, occupy a very
prominent position in the development strategy of any developing
country. This is for two main reasons:-

(i) The marketing system is the channel through which
agricultural surpluses are mobilised, largely for general
economic development.

(ii) The price system determines the terms of trade, which are
the means through which inter-sectoral transfers of
resources take place.

These two aspects influence agricultural marketing and pricing
policies in LDCs. In the first place, because agriculture
occupies a prominent position in the economies of most LDCs, it
is looked upon as the main source of growth. Experience from
Western Europe has indicated that industrialization has provided
the path towards rapid economic growth. This has led many
developing countries to pursue policies which are aimed at ex-
tracting resources from the agricultural sector to finance
industrial development, such as the use of extractive price
policies (ie. very low producer prices as compared to world
prices, high export taxes etc), so as to extract finances for
investment in industry. In addition, the need for rapid
industrial expansion has led to an emphasis on export crop
production (to get the foreign exchange required for industrial
development). This has led to the need to keep food prices
low, both as a means to direct resources toward export crop
production, as well as to ease the pressure on the industrial
wage bill.[46]

On the other hand, because the majority of the rural
population in developing countries depend on agricultural
production (either as own producers or as agricultural workers),[47]
and agricultural prices are subject to wide fluctuations, it is
thought that stabilizing farm prices is one of the ways which
could contribute to stable agricultural incomes.

All these aspects have led to the widespread practice, in the developing world, of controlling the marketing of small-holder crops, usually through the use of para-statal organisations. However, experience from the developing world tends to indicate that this control is mostly undertaken for surplus extraction.[48]

There is a wide body of opinion which expresses the view that the significance of agriculture's contribution to the industrilization process in the industrialized world has been over-emphasized. Other factors such as access to growing markets (domestic and foreign), wealth from the colonial empire (in the case of Britain and Japan), etc, played a major role in the industrialization process of these countries.[49] It is argued that present day developing countries lack these factors. In fact, the pursuit of an extractive price policy, may not succeed in initiating industrial expansion. Because of the proportion of the population dependent on agricultural incomes, depressing farm prices may reduce agriculture's contribution to industry by reducing the purchasing power of the farm population, thereby, retarding industrial expansion.[50] In addition, it may also deter peasants from producing market-able surpluses. This is where agricultural price policy becomes a very important component of the development strategy. While it is true that a number of the so called Newly Industrialized Countries (NICs) have achieved export led growth, it is equally true that their internal markets also expanded rapidly as a result of improvements in rural incomes.[51]

(b) Agricultural Marketing and Pricing of Smallholder Crops in Malawi.

As a general rule, marketing of agricultural produce in Malawi is in two distinct categories, ie. estate crops and smallholder crops. Estate crops are marketed directly by the producers either to consumers (mostly industrial users) or at the auction floors. The marketing of smallholder crops, on the other hand, is largely the responsibility of the Agricultural Development and Marketing Corporation (ADMARC), which exercises control over the trade in commercial crops, and has a regulating function in the trade of food crops. That is, ADMARC has purchasing monopoly of smallholder export crops, such as tobacco

cotton, coffee, rice etc., while it also buys surpluses of food
crops, either directly (through bush and permanent markets) or
indirectly through licensed traders. However, only a very small
proportion (10 - 40%) of the food crops (maize, pulses etc)
produced on the smallholder farms are purchased by ADMARC, (.52)
the bulk being disposed of through such channels as:

    (i) barter

   (ii) unlicensed traders

  (iii) local and district council markets

   (iv) Urban centre markets

    (v) border trade (illegal).

This means that the marketing of non-export produce is more
or less under free market conditions (with ADMARC acting as a
floor price sett-er) while the marketing of export produce is
under the control of ADMARC.

Table 3.4 Quantity of Smallholder Agricultural Production and its
Destination in 1969.

Crops	Net Production ('000 S.Tons)	Destination of Net Production			
		Own consumption at farm ('000 S.tons)	Total Sales		
			('000 S.ton)	% of Net Prod.	Of which Exported (S.tons)
Maize	1166	1002	164	14	52
Pulses	141	113	28	20	18
Groundnuts	133	86	47	35	38
Cotton Seed	21	1	20	95	13
Paddy	19	8	11	58	-
Tobacco(a)	15	-	15	100	16(b)

Notes: (a) includes estate tobacco

     (b) includes previous year's stock.

Source: Table 8.3, Malawi Statistical Yearbook, 1972.

(i) <u>Marketing of Smallholder Produce Through ADMARC</u>.

The control of smallholder export crop marketing in Malawi
dates back to colonial times. During the early years of small-
holder participation in export production (see chapter 2),
which was largely restricted to production of some varieties of
tobacco, and cotton, the African producers could only sell their
produce to the European settler farmers, who in turn, either
re-sold it at the auction floors or exported it directly to the
outside world.[53] This was resented by the Africans.

In 1926, the Tobacco Marketing Board was set up, followed
by the Cotton Marketing Board and Produce Marketing Board.
These were established for two main purposes:

> (a) "to encourage the production of better quality crops
> and to introduce marketing schemes with strict grading
> of products purchased, inorder to ensure uniform
> standards of goods offered for sale;

> (b) to organise an export market for graded primary products
> which would bring in revenue for the country." (54)

These Boards established rural markets in the export crop
producing areas. It is pointed out that up to 1956, the policy
of these Boards was to pay such producer prices which were
considered to give the producer a "reasonable" return and no
more. This policy, is said to have inhibited improvements in
crop husbandry since it was realised by the farmer that most of
the profits of good farming were taken up by the Boards.[55]
In 1956, the three Boards were amalgamated to form the
Agricultural Production and Marketing Board (A.P.M.B.), which
was later renamed the Farmers Marketing Board (FMB) and given
statutory powers, including monopoly rights for the marketing
of smallholders' export crops. Among its price policies,
featured aspects of guaranteed minimum prices and price
stabilization (with the help of a reserve fund, from which price
support was paid to farmers in bad years). After 1967, the
Board was instructed to operate on a commercial basis. By
operating on a "farmer prices plus marketing costs below sale
price" basis, the Board was able to generate funds for other
development efforts and subsidies on improved farm inputs. In
1971, the Agricultural Development and Marketing Corporation

(ADMARC) came into being, taking over the responsibilities of
FMB.

As already indicated above, ADMARC, has a purchasing
monopoly of smallholder export crops, and buys surpluses of non-
export crops. In addition, it acts as a pace setter in the
pricing of smallholder produce, while at the same time it has
control over the issue of traders licences. As such ADMARC
pricing policies have a very strong bearing on smallholder farm
production. In addition ADMARC influences smallholder product-
ion through its function of distributing inputs to the small-
holders. ADMARC's buying and selling prices are controlled
being set annually in consultation with the Government. [56]
ADMARC proposes the guaranteed minimum prices for each small-
holder crop, and these are announced by the Ministry of
Agriculture, once agreement has been reached, at the beginning
of the year. The prices are uniform throughout the country.
The traders are offered a higher price at the main depots than
paid to farmers at the bush and permanent markets, to allow
them a reasonable profit margin after meeting transport expenses.

In its formation of price policy, ADMARC seems to have
inherited the extractive strategy pursued by its predecessors.
This can be well illustrated by examining the aims and object-
ives of the price policy. The stated aims and objectives of
ADMARC's price policy are said to be:-

    (i) To ensure a "reasonable return" to the farmer.
    (ii) To enable ADMARC to earn a surplus to support national
           development programmes.

A closer examination of these aims and objectives reveal a
number of interesting aspects. In the first place, the first
objective is an inoperative concept as it stands, in that it
does not provide any basis on which a "reasonable return" to
the farmer is calculated. All that is said is that ADMARC aims
at a gradual increase in farm prices over the years.
Whether it is real or nominal prices that are at issue, is not
specified. The strategy is justified as a means to stabilize
farm prices on a long term basis, with the view to stabilizing
farm incomes. However, it appears that although the strategy
may have succeeded in shielding farmers from fluctuations and

uncertainties on the world commodity markets, its main effect
has been a gradual fall in farmers real prices of most export crops
As Tolley (1982), has pointed out, price stabilization alone,
at the farm level, does not necessarily stabilize farm incomes, (57)
other factors such as price of inputs, cost of manufactured
items, etc, also have an impact on the level of farm income.
For example, since 1973, ADMARC has withdrawn input subsidies
from the smallholders. Table 3.5 below, indicates that the real
price of maize paid by ADMARC to producers, has been more of
less static between 1971 and 1978, while that for tobacco actually
fell below its 1970 level between 1971 and 1974, and began to
rise gradually in 1975. It was only in 1978 when it rose above
its 1970 level.

Table 3.5 ADMARC Producer Price Indices For Maize and Tobacco
1970 - 1978.

| Year | Maize | | Tobacco | |
	Nominal (Tambala/kg)	Real	Nominal (Tambala/kg)	Real
1970	100.0	100.0	100.0	100.0
1971	142.5	131.6	133.0	122.8
1972	142.5	126.9	111.3	99.3
1973	142.5	120.7	102.3	87.1
1974	199.5	146.6	103.3	77.3
1975	199.5	126.9	127.2	80.7
1976	256.5	155.4	145.3	88.6
1977	256.5	150.0	164.8	96.4
1978	256.5	133.0	206.0	111.1

Notes: The Real prices are calculated by deflating the prices
by the Low Income Consumer Price Index for Blantyre,
which although not particularly appropriate, is used in
the absence of any other better indicator of the cost of
living of the rural households.

Sources: Malawi Statistical Yearbook, 1979, PP69 (Table 8.11)
and 137 (Table 16.3); and NRDP, Policies, Strategy and
General Features, Annex 12, Table 2.12.

The observation that the strategy of price stabilization has been accompanied by a decline in the real prices of the smallholder questions the genuine concern of the strategy to farmers' wellbeing. This points to the overriding importance of the second objective, ie, that of accumulating investment funds, which is reflected in ADMARC's annual trading accounts as indicated in the table below.

Table 3.6 ADMARC Crop Trading Accounts - Net Profit [(a)] as a % of Farmers Receipts

Crop	1972	1973	1974	1975	1976	1977
Cotton	33	38	74	92	16	64
Tobacco	139	76	71	146	243	270
Groundnuts	54	48	48	24	24	106
Rice	(15)	(10)	9	36	(82)	(46)
Maize	(5)	(3)	75	8	(49)	(45)
Total Trading	62	38	57	65	49	98

Notes: (a) The bracketed figures represent losses.
Source: NRDP, Phase I. Selected working papers, 1978, Vol.1
        Table 1, P23. Adapted from ADMARC Reports.

Table 3.6 indicates that ADMARC has allowed itself a very high profit margin on almost all the smallholder crops, while occasionally making losses on the major food crops, mostly through subsidizing urban consumers. This overemphasis on the extractive function by ADMARC reflects the fact that it views itself as essentially fulfilling a developmental function, ie to use its price policy as an instrument for speeding up the process of development in the economy. Consequently, most of the surplus extracted from the smallholder sector has been invested in development activities such as providing loans for the development of estates by Malawian entrepreneurs (especially flue cured and burley tobacco), introduction of new crops like cashew and macadamia nuts on estates, managing small scale projects for evaluating the feasibility of other crops such as citrus, pyrethrum, etc., and mantaining a reserve supposedly for price support,[58] and investment in industrial activities.

While it could be argued that the development function is worthwhile for the whole country, it should be pointed out that the high level of surplus extraction may have some adverse effects on the development process. In the first place, it could be counter productive in that it could act as a disincentive to higher smallholder production, thereby, reducing the volume of smallholder exports.[59] As already indicated in the previous section, the share of smallholder exports declined from 53% of total exports in 1964 to 34% in 1977 (see Table 3.3). Although such a decline is partly explained by the rapid expansion of the estate sector, it nevertheless represents an underlying slowing down of the growth in smallholder export production.

(ii) Smallholder Response to Price Incentives in Malawi.

The role of price policy in influencing smallholder agricultural production is largely an unresolved issue in Malawi. The main issue at hand is to find out the exact nature of the relationship between agricultural prices and smallholder agricultural production. A number of studies have been undertaken with the aim to establish whether smallholders in Malawi respond strongly to price changes. If this is proven to be the case, then prices provide a powerful policy instrument for influencing agricultural production in accordance with national priorities. On the other hand, should the response be found to be weak, this will imply that more emphasis should be placed on other factors that affect smallholder productivity, such as farmer education through extension services, and other incentive schemes such as input subsidization, etc.[60]

Four main attempts at getting empirical evidence on the response of Malawian smallholders to price changes will be briefly reviewed here. The general appoach of these studies has been to examine crop production over a period and try to explain production variations by means of factors such as technological change, levels of experience with the crop, etc. Dean (1966) focused his investigation on tobacco sales between 1926 and 1960.[61] He found four main explanatory factors of variation in production (estimated by tobacco sales), namely;

(i) The previous year's tobacco prices (real).

(ii) A weighted index of the overseas wage rate in the previous year.

(iii) An index of the consumer prices in the previous year.

(iv) the weather.

He estimated a price elasticity of supply of 0.48.

Minford and Ohs (1968), examined the response of smallholder total output to real price changes between 1949 and 1968.[62] They too found all the four variables identified by by Dean, plus an unofficial export variable (for border trade), as strongly related to the value of crop sales. Their estimates of price elasticity of supply were around 0.60. The fact that total price elasticity of supply is positive signifies that during the period under review, the smallholder sector had ample idle resources of say land and surplus labour that a properly balanced price policy could achieve rises in output of almost all smallholder crops, as there was apparently no strong competition among the various crops for the available resources.

Coleman and Garbertt(1973), dealt with the cotton supply response in the Lower Shire, between 1955/56 and 1970 [63]. Producer price, deflated by the consumer price index and lagged by one year, and rainfall, were found to be strong determinants of supply (also as represented by sales figures), and a very high price elasticity of supply of 2.36 was obtained. In addition, the study also indicated that smallholders were more interested in maximising net revenue per labour unit rather than per unit of land, suggesting that labour was a more critical constraint in the circumstances, than land.

Gordon (1971), focused his study on investigating the supply response of groundnuts, by looking at the changes in acreage planted with the crop in response to changes in real producer prices, also lagged by one year.[64] His estimate indicated that the price responsiveness of the supply of groundnuts was as high as 2.3.

All the above studies indicate high price elasticities of supply in the Malawian smallholder agricultural sector. One

limitation of the above studies is that they all used crop
sales to ADMARC (except that by Gordon which used changes in
area planted to groundnuts) as a proxy for the supply of the
marketed output of the crop concerned. As indicated earlier,
ADMARC purchases represent a small proportion of the marketed
output of smallholder crops, especially those which happen to
be both food crops and cash crops. Thus although they may
give a close indication of total marketed output of the export
crops, for which ADMARC has a purchasing monopoly, eg cotton,
tobacco and say, sunflower seeds, they may not do so for the
other crops. More important, the rigidity of ADMARC producer
prices (see table 3.5) does not allow for a proper examination
of smallholder response to price changes.

These few positive results of smallholder response to
producer prices, coupled with ample evidence from other
countries which has indicated that smallholders do respond
positively to price incentives [65], are indicative of a number of
things. First they indicate that price policy does indeed have
a role to play in influencing smallholder agricultural product-
ion decisions. For example, a relaxation of the extractive
price policy pursued by ADMARC with regard to export crops,
would likely lead to higher output of export crops by small-
holders than is the case at present. This would lead to higher
rural liquidity and thus provide a market for industrial goods,
thereby aiding the industrialization programme. Secondly, the
aim of the smallholder agricultural development effort is to
encourage farmers to adopt more profitable, high yielding crop
enterprises, however, many smallholders have fixed amounts of
resources (land, labour, capital) etc, at least in the short
run. This implies that the new crops and old crops represent
competing demands on these resources. And, if indeed the
Malawian smallholders respond positively to price changes, then
variations in relative prices will play a very important role
deciding how farmers allocate their resources between the
various crops. This is an area in which price policy could be
particularly useful in achieving a desired product mix.
Tolly et al (1982), give the example of Korea as a country

which has achieved self-sefficiency in rice partly due to
Government price policy (ie. provision of price support to paddy
rice growers).[66] In a way, it can be said that price policy in
Malawi has contributed towards the apparent self-sufficiency
in foodstuffs. As already pointed out, smallholder export crop
marketing is under the monopoly of ADMARC price policy. On the
other hand, the bulk of smallholder non-export crops, which are
largely food crops, such as maize, pulses, etc., are disposed of
on what may be termed a "free market". A survey in 1977,[67]
indicated that private traders offered prices which were on average
40%, 30% and 60% above those offered by ADMARC for rice, maize and
mixed beans, respectively (see table 3.7), thus partly accounting
for the low share of ADMARC purchases of these crops. At the same
time, table 3.6 has indicated that between 1972 and 1977, ADMARC
extracted relatively lower surpluses from food crops than from
export crops. This implies that considering actual prices, the
barter terms of trade between food crops and cash crops turned in
favour of food crop producers. As a result, more people tended to
allocate more of their resources to the production of food crops
than export crops, with the consequence that the production of
such cash crops as cotton and groundnuts declined, while that of
food crops such as maize and rice rose, thereby making the country
more or less self-sufficient in food crops. This aspect is well
supported by the evidence in LLDP which indicates that up to 1977/78,
the hectarage under maize continued to rise in the project area, in
contrast to say, that of groundnuts (the crop which was considered
to be the main cash crop - unlike tobacco which was under quota
controls) which declined over the same period.[68] This point will be
examined in more detail in chapters iv and v.   But the above
evidence clearly indicates that the price policy pursued with
regard to smallholder export crops is at variance with the export
promotion objective of IRDP.

Table 3.7 Comparison of ADMARC Buying Prices With Mean Local
Market Prices - 1977.

Crop	Mean Local market price (Tambala/kg) (a)	ADMARC buying price (Tambala/kg) (b)	(b/a) %
Rice Paddy	12.8	7.7	60
Shelled groundnuts	47.7	15.4	32
unshelled groundnuts	22.4	9.9	21
Beans	26.6	11.0	41
Pigeon peas	11.9	6.6	56
Cow peas	16.9	5.5	32
Maize	7.0	5.1	70

Notes: These mean prices may not highlight the whole magnitude of
the discrepancy between the ADMARC and local market
prices as they are more likely to represent the prices
obtainable during the ADMARC crop purchasing period
(say June to October), and not a weighted average for
the whole year.

Source: NRDP, Selected Working Papers, Vol. 1 1978, Table 13,
P 24.

Finally it should be emphasized that price policy has a
vital role to play in encouraging the adoption of particular
innovations. It is not enough to provide the smallholders
with improved seeds, teach them good crop and animal husbandry
methods and provide them with farm credit, without ensuring
that the smallholders are actually going to derive financial
benefits from the innovations.

111. The Impact of the Incomes Policy on Smallholder
Agricultural Production.

According to Ghai and Radwan (ILO, 1981), the incomes policy
pursued in Malawi has three major objectives:[69]

(a) To control rural - urban migration through reducing the
incomes gap between peasant and urban unskilled workers.

(b) To promote wage employment, particularly in the
agricultural sector.

(c) To maintain economic stability.

In order to achieve the first two objectives, the strategy
has been to firmly control the statutory minimum wage rate,
while the achievement of the third objective has necessitated
a relaxation of control on higher wage incomes, and profits or
dividends.

Table 3.8, indicates that between 1968 and 1972, the
statutory minimum daily wage rate (in money terms) was constant,
just to be increased by a mere 5% in 1973, and remained constant
at that level up to 1978.[70] However, in real terms, the
minimum wage rate shows a decline of about 54% between 1968 and
1978.[71] It is mostly in the estate sector where most of this
decline in the real wage rate has been felt, because of the
majority of the workers are employed on a seasonal basis and are
therefore usually paid the minimum wage, unlike in the non-
agricultural sector where employment tends to be more permanent
and basic wages tend to rise with length of service.

Table 3.8 Statutory Minimum Daily Wage Rate For Blantyre-Limbe,
as at 1st January, 1968 - 1978.

Year	Nominal		Real (a)		Price of (b) maize Index
	Tambala/ Day	Index	Tambala/ Day	Index	
1968	38	100.0	38.0	100.0	100.0
1969	38	100.0	37.6	99.0	98.7
1970	38	100.0	34.2	90.0	137.2
1971	38	100.0	31.7	83.4	144.5
1972	38	100.0	30.6	80.5	158.5
1973	40	105.3	30.5	80.2	155.4
1974	40	105.3	26.7	70.2	171.3
1975	40	105.3	23.0	60.5	261.6
1976	40	105.3	22.1	58.2	282.3
1977	40	105.3	21.2	55.8	251.8
1978	40	105.3	19.5	51.3	NA

Notes:
  (a) The real daily wage rate has been calculated by deflating
     the nominal wage rate by the low income consumer price
     Index for Blantyre (shifted from 1970 to 1968).

  (b) Adapted from Ghai and Radwan (ILO. 1981), Table 5, P 14.

Source: Malawi Statistical Yearbook, 1979, PP 58 and 137

The conseqences of this low wages policy have been mixed.
In the first place, it has led to the encouragement of the use
of labour intensive production techniques, both in agriculture
(estate sector) and industry. This has led to the relatively
fast rate of employment growth in the country already referred
to in chapter 11. Secondly, it has contributed to keeping
rural-urban migration at a moderate rate. According to World
Bank (1981a) estimates, urban population grew by 6.6% and 6.8%
between 1960 and 1980, respectively.[72] Most of the internal
migration in the country has been of the rural - rural type,
rather a rural - urban type, as people have tended to move from
those areas with little agricultural potential, say the Lower

Shire, to those areas where a lot of estate development has
been taking place, such as the Central Region.

On the other hand, the low wages policy has had an effect
on ADMARC's price policy. That is inorder to maintain the low
wages, ADMARC has resorted to keeping food prices down, as
table 3.5 indicates. And it could be argued that this low
food prices policy had a bearing on the price ADMARC offered
for export crops, as a relatively higher export prices would
have had the effect of reducing the production of food crops
as farmers would tend to allocate most of their resources
towards the more profitable export crops, thereby causing food
prices to rise and thus putting pressure on the wage rate. In
this case the low wages policy had a negative impact on both
smallholder export crop production and surplus food product-
ion. More important, the low wages policy was formulated with
a view to encouraging the expansion of wage employment, as
already indicated. Inorder for this to take place, the return
to labour in wage employment had to be higher than that in
smallholder production (otherwise the estates would not be able
to attract labour), and this necessitated a low farm prices
policy. This particular point is very important for it explains
the paradox observed in the Malawi economy (see Ghai and Radwan,
ILO, 1981   ), whereby between 1968 and 1978, employment in
the estate sector continued to rise despite the apparent fall in
the real wage rate. The explanation for this is that real in-
comes in the smallholder sector must have been more badly affected
by the low farm prices policy. In actual fact the returns to
labour in smallholder agriculture (using official ADMARC producer
prices) were very close to those in the estate sector. For
example, in 1978, the statutory minimum wage rate was 40 tambala
per day, which if we assume an 8 hour working day, works out to
be 5 tambala per hour. This compares to returns to labour of
between 4 and 7 tambala per hour, obtainable from smallholder crops, as indicated
in table 6.10.[72] Given the high risk associated with smallholder
agriculture as compared with estate employment, households with
surplus labour over and above subsistence food production require-
ments, or facing acute problems with smallholder agricultural
production(eg. lacking adequate land and/or labour), would opt
for estate employment instead of trying to produce marketable

surpluses. This tends to indicate that the prices and income
policies in Malawi are closely linked up with the general
objective of expanding estate production of export crops, thus
accounting for the fast expansion in paid employment in the
agricultural sector referred to above, to the detriment of
smallholder production. It therefore appears that although
efforts to encourage smallholder agricultural production are
not lacking there are internal inconsistencies in the overall
strategy, which tends to inhibit smallholder agricultural
development.

Notes - Chapter III

1. See, Lipton, M. (1977), <u>Why the Poor Stay Poor: A Study</u>
    <u>of Urban Bias in World Development</u>,Temple Smith, London,
    P 14; and also the World Bank (1975), op. cit. , P 16.

2. World Bank, (1975a), <u>op.cit</u>

3. <u>Ibid.</u> P3

4. <u>Ibid.</u> P 3.

5. See, Friedman, John (1981), "The Active Community: Towards
    A Political Territorial Framework For Rural Development in
    ·Asia", in <u>Economic Development and Cultural Change</u>, Vol. 29,
    No. 2, PP 235-262.

6. World Bank (1975a), <u>op.cit.</u>

7. See, Massignon, N.(1973), "Rural Development in the Third
    World: A Vital Need and a Challenge to Aid Programmes". in
    <u>OECD Observer</u>, No. 67.

8. World Bank (1975b), <u>op. cit.</u>

9. For example, most of the the third world countries face
    faster population growth rates than those faced by the
    developed countries a century or so ago, this means that
    the developing countries require large GDP growth rates
    just to keep in pace with population growth. The absence
    of fast growing markets (both overseas and domestic),
    as those faced by say , Britain in the 19th Century, makes
    their development the more difficult.

10. See, Heyer et al (1981), <u>Rural Development in Tropical</u>
    <u>Africa</u> , Macmillan Press, London. PP 1-13.

11. <u>Ibid.</u> P 11.

12. <u>Ibid.</u> P 1.

13. <u>Ibid.</u> P 2.

14. <u>Ibid.</u> , another typical view along these lines is that
    expressed by Myint (1964), when he says that :
        "The typical problems of the present-day underdeveloped
        countries arise, not because these countries are in the
        traditional state of isolation, but because they have
        been "opened up"to outside forces, in the form of
        foreign trade, investments, etc.,and colonial rule. The
        expansion of export production and the spread of the
        money economy have disrupted in varying degrees the
        the economic self sufficiency of the traditional
        "subsistence economy."
    See, Myint, Hla (1964), <u>The Economics of the Developing</u>
    <u>Countries</u>, Hutchinson and Co. , London, P 23.

15. Heyer et al (1981) op. cit.

16. Ibid. P 3.

17. See, Williams, G. (1981), "The World Bank and the Peasant Problem", in Heyer et al (1981), op. cit. P33.

18. Sinha, R. , a commment made at a seminar.

19. Williams (1981), op. cit. P 21.

20. See Stewart, F. (1975), " A note on Social Cost-Benefit Analysis and Class Conflict in LDCs", in World Development, Vol. 3 , No. 1.

21. World Bank (1981b), op. cit.

22. See, Lele, U. (1975), op. cit. P 21.

23. See, Massignon, N. (1973), op. cit.

24. For a fuller discussion of the functions of the agricultural sector in the development process, see Thornton, D.S. (1979), "Contribution of Agriculture to Industry", in Journal of Agricultural Economics, Vol. 30, PP 227-229.

25. See, Kotter, H.R. (1974), "Some Observations on the Basic Principles and General Strategy Underlying Integrated Rural Development", in Monthly Bulletin of Agricultural Economics and Statistics , Vol. 23, PP1-12.

26. Chinn (1977), op.cit.,

27. Nyasaland, Development Plan, 1962-65, Government Printer, Zomba, 1962.

28. Malawi, National Rural Development Programme, NRDP. Policies, Strategy, and General Features, op. cit., P 1.

29. Ibid, P 48.

30. Malawi, Statement of Development Policies, op. cit., P 3.

31. Ibid, P 2.

32. World Bank (1975 a), op. cit., P 3.

33. Nyasaland Development Plan, 1962-65, op. cit., This view is particularly stressed by Thomas, S. (1975), op. cit., PP 34-37.

34. This view is strongly put forward by Chilibvumbo, a Malawian living in Zambia. See Chilibvumbo, A (1978), "On Rural Development A Note On Malawi's Programmes of Development for Exploitation", in *African Development*, Vol. 3. No. 2, PP41-54.

35. For a more comprehensive summary of the findings on this issue, see World Bank (1981 b), *op. cit.*

36. The fact that the outcome of a programme need not be the result of a deliberate policy is supported by the evidence provided by Adelman (1974), for Korea. Adelman expresses the view that, the development strategy of Korea was chosen primarily on purely economic growth considerations, the favourable equity consequencies, while now welcomed, were not recognised at the time. See Adelman, I (1974), "South Korea", in Chenery et al, (1974), *Redistribution With Growth*, op. cit., P282.

37. One important aspect to bear in mind about Malawi's agricultural development financing is that, up to now, most of this financing has come from the Development Account, which is largely financed by external loans, grants etc, (███████████████) and this has naturally led to heavy external indebtedness - servicing charges for Government debt alone, for 1982, were estimated at 20% of export receipts, this rises to about 30% of export receipts, when debt servicing of public corporations is added. However, it is stated that each NRDP project will be transfered from the Development Account after its fifth year of development. The effect of this will be to put pressure on local resources in order to maintain the projects, as well as to service the debt so contracted. Unless the revenue generated from these projects exceeds the recurrent costs, NRDP may prove to be a burden on the national economy, once this external financing is removed.

38. See table 3.1. Much lower figures are quoted for 1974 by Chilibvumbo (1974), *op. cit.*, P 46.

39. See Ghai, D and Radwan (ILO, 1980) *op. cit.*, P 10.

40. *Ibid*, P 9.

41. Malawi, *NRDP, Policies, Strategy and General Features*, op. cit., P 48.

42. One of the reasons why wage employment has expanded very fast in the estate sector, despite declining real wages, could well be due to the fact that prospects in the smallholder sector, have been increasingly getting worse. See Kydd and Christiansen, *op.cit.*

43. Cotton in Tanzania, Tea in Kenya and Coffee in Uganda, are some of the few examples.

44. See World Bank (1981 c), *op. cit.*, P 5. See also Heyer, S and Waweru, J.K. (1976), "The Development of Small Farm Areas", in Heyer et al (1976), *op. cit.*, PP 187-220.

45. NRDP, working Papers No. 1, Annex , 2. P 3.

46. Food prices to the urban workers are subsidized mainly
    through the controlling of the prices at which maize
    flour and rice are distributed by the Grain Milling
    Company, a parastatal organisation.

47. According to World Bank (1975 a) estimates, about 80% of
    the poor are estimated to live in rural areas, and
    agriculture is the principle occupation of 80% of them.
    See World Bank (1975 a), op. cit., P 4.

48. See Tolley, G. et al (1982), Agricultural Price Policies
    and the Developing Countries, Hopkins University Press,
    Baltimore.

49. The procurement policy of the Soviet Union is the most
    quoted example. See for example, Shaffer, H.G. "Soviet
    Agriculture: Success or Failure", in Shaffer (1977)
    editor, Soviet Agriculture, an Assessment of Its
    Contribution to Economic Development, Praeger, London.
    PP 56-105.

50. Sinha, R, personal communication. Also writers such as
    Nove and Miller are very sceptical of the view that
    Soviet agriculture was the main generator of funds for
    the industrial expansion programme. They argued that in
    fact overall agricultural production actually declined
    after collectivisation thereby undermining its contribution
    to industry. See, Miller, J.R. and Nove, A (1976) "A
    Debate on Collectivisation: was Stalin Really Necessary?"
    in Problems of Communication, July-August 1976, PP 49-62,
    cited in Shaffer (1977), op. cit., P 1

51. This is particularly true of countries like Taiwan, Korea
    and Japan. See Chenery et al (1974), op cit., PP 280-290;
    also Chinn (1979), op. cit, PP283-301.

52. See NRDP, Working Paper No. 38.

53. See Rotberg, R. (1966), op. cit, P 33.

54. See Malawi, Marketing of Smallholder Agricultural Produce
    in Malawi, Vol. 1, Agro-Economic survey, Ministry of
    Agriculture and Natural Resources, Lilongwe 1975. P 18.

55. Ibid, P 18.

56. See NRDP, Selected Working Papers, Vol. 1 , op. cit., P 23.

57. See Tolly et al (1982), op. cit., P 3.

58. Ghai and Radwan (ILO, 1981) point out that ADMARC's increasing element of investments has had no connection with the smallholder sector whilst through its loan and equity policies some element of transfer of funds from the smallholder sector to the estate or industrial sector has taken place. See Ghai and Radwan (140, 19810, op. cit. P. 30.

59. It has actually been observed that production and exports of seed cotton have actually fallen over the past few years due largely to the low producer prices paid by ADMARC, which appear not to provide a sufficient incentive to farmers, see NRDP, Selected Working Papers, op. cit., P 20.

60. Ibid, P 39.

61. Dean, E. (1966), The Supply Response of African Farmers: Theory and Measurement in Malawi, North Holland Publishing Co., Amsterdam.

62. Minford, P. and Ohs , P. (1968), Supply Response of Malawi Labour, mimeo, Zomba, Also published in East African Economic Review, 8, 1976,.

63. Colman, D.R. and Garbett, G.K. (1973), Economic and Sociological Issues in The Development of Lower Shire Valley. (unpublished).

64. Gordon, J.G. (1971), A Model for Estimating Future Agricultural Production in Malawi, Wye College, Report No. 4.

65. Tolley et al (1982), op. cit., P 3.

66. Ibid, P 3.

67. Malawi, An Analysis of Agricultural Produce Prices at Local Markets, Agro-Economic Survey, MANR; Lilongwe, 1977.

68. See chapter 11.

69. Ghai and Radwan (ILO, 1981) op. cit., P 30.

70. It was raised to 50 tambala per day in 1980.

71. The decline in the average monthly wage rate for the same period is reported to have been 17%, see Ghai and Radwan (ILO, 1981), op. cit., P 14.

72. World Bank (1981 a), op. cit., Table 20, P 172.

73. See table 6.4.

CHAPTER 1V

SMALLHOLDER AGRICULTURAL DEVELOPMENT IN THE LILONGWE LAND
DEVELOPMENT PROGRAMME (LLDP).

This chapter addresses itself to two main issues.

(i) An investigation of the factors associated with raising
small scale agricultural productivity in LLDP.

(ii) An examination of the impact of the smallholder agricultu-
ral development effort on rural welfare in the project
area.

The analysis will begin with an examination of the aims and

objectives of LLDP, to find out how they compare with the generally
proclaimed aims and objectives of rural development. This will be
followed by an examination of the strategy that was employed in
LLDP in an attempt to achieve the stated objectives, and how the
strategy relates to the socio-economic conditions obtaining in the
area.

1. BACKGROUND ON LLDP.

The Lilongwe Land Development Programme (LLDP), was launched
in 1968/69, by the Malawi Government, with the help of the World
Bank (at an estimated cost of K24.4 million). It was originally
a three phase 13 year development programme. In 1979/80, it
entered its 4th phase, in the 1st phase of the newly launched
National Rural Development Programme.

As Kinsey (1974) has pointed out, LLDP typifies one of the
World Bank's two principal strategies for integrated small-
holder development programmes, namely, that of focusing on a broad
concept of development including a wide range of activities to
support production for both subsistence and for the market.[1]

(I) Aims and Objectives of LLDP

Although LLDP is classified as an integrated Rural Develop-
ment Programme (IRDP), it was essentially a crop productivity
project whose principal aim was to raise yields of maize, ground-
nuts and tobacco, (the principal crops in the area) on a large
enough scale to produce an impact on the National economy. [2]

Among the benefits which were originally expected to accrue from
the project, were the following:

(i) An increase in net family income (among the participating
farm families) of about K52.0 million per year.

(ii) Production of an exportable surplus valued at K4.6
million per year.

(iii) An increase in Government revenues from taxes and other
; charges (e.g. interest on loans for inputs).

(iv) Establishment of a stable pattern of agriculture, comme-
rcially oriented, with built in incentives to greater
production and investment by the farmers.

(v) Formation of a corps of particularly experienced agricu-
ltural development officers, some of whom could be avail-
able for the subsequent planning and execution of similar
projects elsewhere in the country.

(vi) Realisation of an internal rate of return (IRR) to the
national economy of about 16% over a 20 year period.

(vii) Transformation of the attitudes of the farmers. [3]

Over the years most of these objectives have been modified
and revised, and the programme has evolved towards a more widely
based integrated approach to rural transformation, although the
emphasis on productivity still persists.

II. Natural Characteristics.

The project area surrounds the city of Lilongwe (Malawi's
capital) - except on the North East, where the Lilongwe North East
Agricultural Development Project is in progress. It lies at an
altitude of between 1,100 and 1,230 metres above sea level. It
consists mostly of gently undulating plains with slopes seldom
exceeding 2 to 3%. The annual rainfall ranges between 640 to 1090
millimetres (falling between October and February), while its
temperature is within the $15^{o}C$ to $23^{o}C$ range. Its soils, generally
red clay to sandy loam are moderately rich and well suited to the
growing of maize, tobacco and groundnuts.[4] At the commencement
of phase iv (1979/80), the total area covered by LLDP was
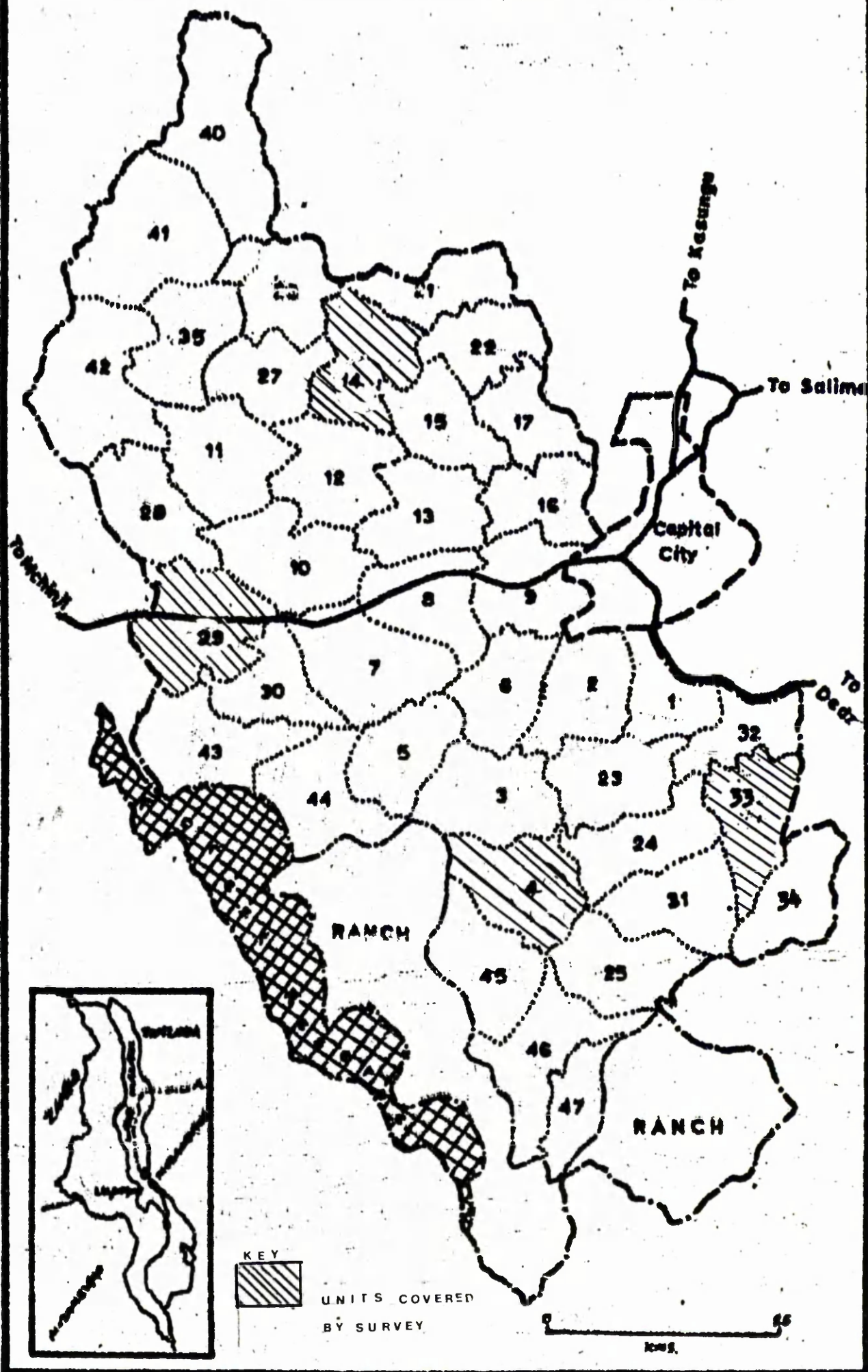
MAP 1 : LLDP Development Units in situ.

approximately 485,000 hectares (about 5% of total land area of
Malawi), of which some 348,000 hectares were available for small-
holder agriculture. Of the balance, some 65,000 hectares were
devoted to the Dzalanyama ranch (an integral part of LLDP,
intended to boost smallholder livestock production). By mid 1977
it was estimated that a total of 103,600 farm families , with mean
household size of 4.8 persons , were within the project boundaries
(about 3% of the Malawian smallholder population).[5]

111. Development Strategy in LLDP.

Maize, groundnuts and tobacco (fire-cured), are the main
peasant crops in the area. While maize (the local varieties) is
predominantly. grown for food purposes, groundnuts and tobacco are
the main cash crops. As already pointed out, the initial object-
ive of LLDP was to raise output of the main crops in the area.
The strategy to be employed with regard to each crop was as
follows:

(i) Maize - to raise yields per hectare, through intensive
use of fertilizers, new and improved seeds (mainly hy-
brid varieties) and modern crop husbandry methods -
while reducing hectarage planted to maize.

(ii) Groundnuts - also raising output per hectare, through
use of improved seed varieties and modern farming methods
as well as expanding hectarage.

The experience of LLDP indicates that the strategy did not
work out exactly as intended. For example, the proportion of
maize hectarage did not decline as anticipated. This appears to
have been for two main reasons:

(i) The uptake of improved maize varieties did not reach
appraisal projections partly due to seed shortages and
partly as a result of the inappropriateness of the
improved maize varieties (especially the hybrids) for
subsistence purposes.

(ii) The rapid growth of the city of Lilongwe - necessitated
a higher growth in maize production (the staple food)
than could be sustained by the new technology being

introduced - and the natural way to meet this rising demand for maize was through hectarage expansion.

This meant that a substantial number of farmers were increasingly growing the local maize varieties (with lower yields) and therefore, not releasing land as anticipated.

On the other hand, groundnut yields and hectarages were declining, contrary to expectations. For example, the land cultivated with groundnuts fell from 21% (of total cultivated area) in 1969/70 to 16.5% in 1978/79. The reasons for this decline have been largely attributed to such factors as low farm prices, managerial practices, labour availability problems and many others. We shall take up these issues in chapter 5.

Parallel to the developments in maize and groundnuts production, was the rising role of the tobacco enterprise. Between 1969/70 and 1978/79, the proportion of land planted to tobacco in LLDP more than doubled, increasing from 7.3% of total cultivated to 15.9%. Such developments in the land use pattern must have had a profound influence on the income distribution pattern that emerged in the area. However, lack of appropriate time-series household survey data prevents a more detailed analysis of the development model in LLDP. The present picture (from the survey results reported in chapter 5) indicates that those households who grew either tobacco and/or improved maize, have higher farm and total incomes than those that did not.

Table 4.1 Proportion of Cultivated Land Under Maize, Groundnuts and Tobacco in LLDP - 1969 to 1979

Year	Crop (percentage)		
	Maize (all varieties)	Groundnuts	Tobacco
1969/70	63.6	20.8	7.3
1970/71	64.6	22.2	.6.6
1971/72	62.6	21.5	9.8
1972/73	69.6	21.7	9.0
1973/74	65.7	18.4	10.7
1974/75	60.0	24.4	12.0
1975/76	57.0	24.4	12.7
1976/77	63.1	21.6	11.0
1977/78	64.0	15.3	16.0
1978/79	64.0	16.5	15.9

Source: (i) Up to 1975/76, LLDP; Some Facts and Figures, Lilongwe
1977, P6.

   (ii) From 1976/77, LLDP: Phase 111 Completion Report, P 20
Table 5.1

1V. Innovation adoption Behaviour.

As pointed out above, the main concern of this chapter is
to investigate the factors which were associated with the adoption
of particular innovations in the area. The main hypothesis being
investigated is that labour availability could have been a crucial
factor that affected the pattern of adoption of innovations in
the area, implying that interhousehold differences in labour
availability (family and/or hired), had profoundly affected the **pattern**
of income distribution, through its influence on the land use
pattern. More important, in this chapter, we raise the issue
that, the innovation "packages" through which higher farm output
and incomes were expected to come from (such as adoption of
modern crop husbandry methods, which include use of improved
seed varieties, proper application of fertilizers and other in-
puts,etc), were of a labour intensive nature. Especially, as
the success of these innovation "packages" depended very much on
timeliness of operations, in a rain fed agriculture, this meant

that only those households which were able to provide the required labour at the appropriate time, either because they had large family labour forces, or could be able to hire labour were able to take on the innovations. But the issue will be discussed in detail in chapters 5 and 6.

2. Production Conditions in LLDP.

A. Level of Capital Stock and Availability of Capital Finance.

For well over 90% of the small scale farmers in LLDP, hoes, axes and pangas are the only instruments used in farming operations. In a survey conducted by the Evaluation Section of LLDP, in the 1977/78 season, it was revealed that only 2.1% of the households interviewed had ridgers, less than 1.5% had cultivators and about the same proportion had ploughs. Only the ox-cart (for farm transport) was relatively more popular with about 8% of the sampled population owning one.[11] This indicates that the level of capital stock (in the form of farm implements) available in the area is very low.[12]

It is rather paradoxical that in an area with apparent labour shortages, the level of adoption of labour saving farm implements should be so low. How can this apparent paradox be explained?

1. Lumpiness of Mechanical Implements.

It is often argued that the size of the farm limits the use of mechanical implements.[13] For example, the World Bank (1981 b) quotes Gemmill's study in Malawi which revealed that adopters of ox-cultivation cropped larger areas and significantly, larger farms.[14] Similar findings are reported for Gambia, by Weil (1970).[15] However, experience has indicated that this problem is not insurmountable. Again, the World Bank (1981 b), cites evidence from Green (1973), which indicates that in Thailand, smaller farms overcame an initial lag in use of tractors by using hired tractor services.[16] The present author observed that in Bimbi area (a rice growing area, along lake Chilwa, in Southern Malawi) that this process of hiring out extra plough-time by the wealthier farmers, to the smaller farmers, was going on with great success among rice growers, such that hand prepara-

tion of the ground is almost a thing of the past for a majority
of the farmers. This indicates that lumpiness of mechanical
implements per se, need not account for a low level of adoption
of mechanical implements by small farmers, as there is always
scope for hiring out extra-time. Nevertheless, where timeliness
of operations is crucial, such as in the weeding process, hiring
in and out, of extra mechanical implement time has its limitations
in reducing labour bottlenecks.

11. Lack of Financial Capital

Shortage of financial capital in the Malawian small scale
sector has been recognised for a long time by the agricultural
planners and various efforts have been made to rectify it. For
example, as early as 1958, the Nyasaland Loans Board (the first
body to grant agricultural credit to African Farmers), granted
loans for oxen and livestock, farm carts, items of farm equip-
ment, fencing and other farm requirements.[17] Cash loans were
sometimes granted in connection with improvements and capital
development.[18] The Central Farmers Loans Board, continued to
provide supervised credit for purchase of oxen and ox-driven
implements. However, all these loan schemes had a definite bias
against small farmers. As such, they tended to affect only a
very small proportion of the smallholding community, as table 4.2
indicates.

Table 4.2 Loans Given to Farmers, 1958 - 1960

Year	Number of Farmers	Total Value of Loan	Average Loan/farmer
		(K)	(K)
1958	57	8300	146
1959	208	23700	114
1960	214	24000	112

Source: Nyasaland Reports - 1945 - 1960. Cited in Kettlewell
(1965) "Agricultural Change in Nyasaland: 1945-1960",
Food Research Institute Studies, Vol. 5 No. 3
PP229-285.

. .· The launching of LLDP seems not to have altered the situation
considerably for farmers within the project area. Although
agricultural credit was regarded as vital and essential for the
success of the programme, seasonal, rather than medium or long
term credit, was given priority (taking up over 90% of the
resources available). The uptake of medium term credit, for
farm equipment was very low, as table 4.3 indicates. This could
have been due to two main problems:

    (1) Low return on capital.

    (2) Inappropriate technology.

Table 4.3 Seasonal and Medium Term Credit in LLDP - 1968/69 to
1976/77

Year	Seasonal Credit		Medium Credit
	Total Amount K'000	Average/Farmer K.	K'000
1968/69	5	7.4	NA
1969/70	7	12.3	NA
1970/71	83	18.4	NA
1971/72	343	16.6	31
1972/73	392	18.6	36
1973/74	488	14.2	48
1974/75	736	29.1	28
1975/76	860	25.3	4
1976/77	1001	26.9	-

Source: LLDP, Some Facts and Figures,1977, pp 10 and 15

(a)   Low Returns on Capital

Medium term credit, because of the size of the loan
(average loan per farmer between 1971/72 and 1973/74 was K430),
carried with it rather stringent conditions. For example,
a down payment of between 25-33% of loan value, plus some
form of collateral of up to 150% of the loan was required

before the loan could be secured.[19] This meant that if a household wanted to purchase say, an ox-cart, whose average price during the 1973/74 period was K400, it needed to raise a deposit of about K100 - K120, and/or provide collateral of up to about K600. Livestock and other forms of rural wealth were accepted as a collateral, to make things easier for the farmers. But even then, the collateral required was in the region of up to 5 or 6 head of cattle (needless to mention the countless head of goats, sheep or pigs), and as our survey (reported in chapter 5 - see table 5.5.b) indicated, only 5% of the sample owned cattle, implying that the majority of the farmers could not meet the collateral requirements. At the same time, the relatively short duration of the loan (up to 3 years) necessitated that borrowers undertook projects which yielded high returns within relatively short periods. As such, farm implememts like ploughs, groundnut lifters, etc, whose returns were relatively low due largely to the depressed farm prices mentioned in the previous chapter, were not considered good invest-ment risks. For example, using the gross margin analysis data presented in the 1977/78 Project Completion Report [20], a 1.8 ha farm (which is slightly above the average farm size in the region), growing improved maize, improved groundnuts and improved tobacco, would provide a net revenue of K494 (at 1978 prices), in three years. Implying that at the given farm gate prices and production costs, if the household took say a K400 loan for a farm implement, all its farm revenue for three years (net of cost for fertilizers, insecticides transport etc), would go towards meeting the loan and interest charges. As Kinsey (1974) observed, the majority of medium term loans in LLDP were for maize hammer mills which yielded **high profits** due to the deliberate action of LLDP in restricting their supply[21].

(b) Inappropriate technology.

Mechanical implements are generally used for substituting capital for labour, especially in labour scarce conditions. However, they are not a perfect substitute for labour, the degree of substitutability depending on several factors, such as the type of crops grown, type of operations being undertaken, etc, all of which depend on the type of farming system. If mechanical implements are to be adopted, they have to be suitable for the

operations on which labour availability is a binding constraint.
In the situation under review, weed control during the crop
establishment period (December/January) appears to be the most
labour demanding and time specific operation for all the crops
concerned (see the crop labour demand schedule in chapter 5).[22]
If mechanical implements are to alleviate the labour bottleneck
associated with this process, then they must be appropriate for
this purpose. However, the majority of the mechanical implements
which have been introduced in the area (eg the ox-ploughs, ridgers
cultivators, groundnut lifters, etc), do not appear to tackle the
binding labour constraint. In actual fact, use of mechanical
implements for ground preparation has tended to increase cultivated
area thereby increasing the labour demands for weeding.

Thus, it appears that not only is the unavailability of
capital finance to the majority of the smallholder farmers that
is responsible for the low level of use of mechanical implements
in LLDP, but also the relatively low returns to capital, brought
about by the output price structure and the inappropriateness of
the available range of farm implements to operation(s) on which
labour availability is a binding constraint. However, due to
the overall low level of mechanical implements in the area, they
do not constitute a significant source of interhousehold differ-
ences in farm incomes. As such, they will not feature in our
analysis of interhousehold differences in incomes in LLDP.

B. Impact of LLDP Strategy on Farm Productivities.

Yield studies conducted in Lilongwe District, before LLDP was
launched indicate that average maize yields in the area were around
7 bags (about 740 kg) per hectare, while groundnut yields averaged
about 750 kg of kernels per hectare. Timeliness of planting and
weed control were said to be the main determinants of output.[23]
When LLDP was launched in 1967/68, it sought to improve yields
mostly through the introduction of improved seed varieties and the
use of non-farm inputs (fertilizers, etc). Evidence indicates
that between 1969/70 and 1972/73, average maize yields were
consistently higher in the developed area, while groundnut yields
were higher on the developed areas only for two out of the four
years.[24]

Table 4.4 Maize and Groundnuts Yields in Developed and
Undeveloped Areas in LLDP, 1969/70 - 1972/73.

                    (kg/hectare)

| Year | Maize | | Groundnuts | |
	Developed Units	Undeveloped Units	Developed Units	Undeveloped Units
1969/70	1226	1116	534	651
1970/71	1437	1281	469	600
1971/72	1636	1225	463	456
1972/73	1314	1139	298	254

Source: LLDP, Yield Reports and Data supplied by the Evaluation
        Unit. - cited in Kinsey (1974), op. cit., Table 31, P 152.

Although the above data tends to indicate a positive contri-
bution of the project to yields in the area, there is some need
for caution. As Kinsey (1974) has pointed out, the apparent
increase in the maize yields over the years, within the project
area, seem to have been enhanced more by the incorporation of
more productive areas into the project, during the later years,
than mere project impact as such. He goes on to add that there
was no significant evidence to support the view that yields were
significantly higher within the developed units than outside, as
bivariate regression models indicated that inclusion or non-
inclusion of an area in LLDP explained only some 2 to 3 percent
of the variation in yields.[25] Thus up to the end of phase 1
(1967/68 to 1972/73), the available data do not provide any
conclusive evidence that smallholder productivity within the
project area was higher with project support than without.

Ten years after the launching of the project, an interesting
pattern of development seems to have emerged in the area. The
1977/78 Sample Survey of Smallholder Agriculture conducted by
LLDP (Evaluation Section), indicated that the mean yield of maize
(all varieties) was 1206 kg/hectare.,[26] which was lower than
the average annual yields obtained during the 1969/70 to 1972/73
period, in the "developed" areas of LLDP. However, as table 4.5
indicates there was a great deal of variation in the mean yields

obtained for each of the varieties grown in the area.

The table indicates that the productivity improvement enjoyed by a farm operator was very much dependent upon the variety of maize grown. For instance, those farmers growing hybrid maize, obtained on average, a yield level which was about 3 times higher than that achieved by those growing local maize. This means that the mean yield figures presented in the earlier studies (which lump together all varieties) do not provide us with any helpful indication of how the alleged productivity improvements were distributed among the farmers.

Table 4.5 A Comparison of Mean Yields of Different Maize Varieties in LLDP.

Variety	Mean Yield (kg/ha
Local maize	1075
Synthetic maize	1436
Hybrid maize (SR52)	2998
Composite maize (UCA)	1227
Mixtures	1367
All varieties	1206

A recent study by Kydd (1982), indicates that adoption of improved maize varieties (the major improvement introduced in LLDP), although initially high (in the 1969/70 season), has since declined, being mostly confined to two groups of farmers, viz, the "commercial maize farmers" and the "richer tobacco farmers".[27] This indicates that although yields per hectare obtainable from improved maize varieties were quite high, they were only attain- able by a limited number of people, while productivity per hectare on the majority of small scale farms was still low.

3. The Problem of Labour Availability and its Consequenc es on Smallholder Agricultural Development.

A. Labour Availability and Farm Size.

It is generally agreed that the World's rural poor (apart from the landless) are mostly small scale farmers whose very

smallholdings (less than 1 hectare per family in most cases),
cannot provide enough to sustain their basic subsistence
needs.[28] With evidence obtained mostly from Latin America
and Asian experiences, it has been inferred that lack of land,
mostly due to either, inequalities in land distribution or high
population pressures on the land, is at the heart of the rural
poverty problem in the Third World.[29] The improvements in
rural productivity and welfare that have taken place in countries
like Japan, Taiwan and Korea, after egalitarian land reforms were
undertaken, are cited as examples that support this view.[30]
Hence the question of access to land has been at the centre of
rural development discussions.

It is thus perhaps surprising to see that low smallholder
productivity has been experienced in countries with or without
acute population pressures as well as in those countries with
or without land tenure arrangements that restrict access to
land.[31] This observation serves as a cautionary note against
the universal applicability of the popular belief that the
correlation between low farm output and small farms observed
throughout the Third World suggests a direct causal link
between farm size and poverty resulting from limited access to
land. In sub-Saharan Africa, for example, there is a prevalence
of customary land tenure arrangements (which safegurd against
landlessness), and population pressures, even in the most densely
populated countries, are not as acute as those obtaining in most
of Asia. In circumstances like these, farm size, which is a
measure of worked land rather than available land, is more likely
to be a manifestation of poverty than a cause of it. Recent
studies in Africa tend to indicate that African farms achieve
lower productivities per unit of land largely because they
organise their production activities in such a way that they
maximise returns to labour, which is often scarce relative to
land.[32]

Such findings tend to suggest that in order to understand
the causes of rural poverty in situations where arable land can
be said to be more of less universally accessible, there is need
to seek altenative causes other than land availability per se.
In Malawi for example, the general agreement among researchers,

is that there are no significant barriers to access to land,
such as restrictive land tenure systems that favour land
concentration.(33)   This is because the customary land tenure
system (under which about 80% of the land falls)[34] tends to
favour even distribution of land.   Even in LLDP, where most of
the land has been demarcated and certificates of claim issued
to family heads (on behalf of their families), the basic
principle of allocating land for individial use remains un-
altered within the family structure.   Thus overall, it could be
said that in Malawi, the land tenure system operates against
land concentration per se, as farm size is largely determined
by the households' ability to work the land. [35] Although
there is very little evidence to support this claim, that avail-
able seems to be affirmative. Kydd (1979, for example, in his
study of Namwera (an area in Southern Malawi), investigated the
distribution of cultivated land among the rural households. He
obtained Gini-Coeffients of the order 0.36 - 0.38 and 0.29 to
0.32 for Lorenz curves constructed on per-capita and per-adult
basis of distribution, respectively.[36] Both measures indicate
that the cultivated land is fairly evenly distributed in the
area. But the fact that the per-adult measure depicted a more
even distribution of cultivated land among the households than
the per-capita one, suggests that cultivated land was distributed
more according to a household's ability to use it (as expressed
by household's potential workforce, ie number of adults) than
mere land availability per se.

Further evidence of land distribution among smallholders, in
accordance to ability to farm it, is provided by the National
Sample Survey of Agriculture, 1968/69. This survey indicated
that only 1.38 million hectares of the 5.3 million hectares
of arable land (representing 26%) were being cultivated then,
and yet the majority (63%) cultivated areas of under 1.6
hectares.[37]   At the same time, the average cultivated area
per household in the sparsely populated Northern Region
(24 persons per sq.km) was 1.4 hectares, while that in the
densely populated southern Region (87 persons/km^2) was 1.3
hectares.[38]   More interestingly, this survey indicated that

32% of the holdings in the Northern Region and 36% in the
Southern Region were under 0.8 hectares, and in both cases, the
average number of persons living and working on such holdings
was 2.3.[39]

B.   Labour Availability and Smallholder Credit.

There is general support to the Schultzian hypothesis that
the small farmer responds to his opportunities with considerable
economic rationality.[40]   However, it is felt that small farmers
have not shown an impressive response to technical opportunities
in production that promise high economic rewards. As such, it
is pointed out that most traditional small farmers are producing
close to their capacity ceiling given the level of technology
they have access to (Goyoso, 1973).[41]   According to Chinn
(1979) a common diagnosis of the problem is that

> "agricultural productivity is low on small farms because of
> limited access to controlled water supplies, chemical
> fertilizers, pesticides, mechanical implements and other
> inputs..." [42]

It is felt that credit can be the facilitating input that
allows effective access to new inputs and technology.[43] Thus
most smallholder development projects have tended to incorporate
a credit programme as part and parcel of the whole development
effort. In such circumstances, the issue of smallholder credit
becomes central in the discussion of input use by the small
scale farm community.

1.   Smallholder Credit in Malawi

In Malawi, the agricultural sector is composed of two main
sectors , as already indicated, ie the smallholder sector, and
the estate sector. The former which consists of some 1.1 million
smallholdings (most of them below 2 hectares) accounts for over
85% of the agricultural production and supports over 90% of the
population, while the latter exports over 60% of the total
agricultural exports(NRDP, Policies,Strategy---, op. cit. P1)

Prior to Independence (1964), institutional agricultural
credit was almost exclusively available to the estate sector,
which was predominantly European owned. It was not until 1958
that institutional agricultural credit became available to

African farmers,[44] when the Nyasaland Loans Board (operating through Local District Committees) started to issue loans of up to K500 (£250) with a minimum of K40 (£20) at an interest rate of 5.5% per annum.[45] Such credit was available mostly for agriculture, housing, commercial and industrial purposes. These loans which were in cash for improvement and capital or in kind, for seeds, fertilizer, oxen and other livestock, farm carts etc, were mainly short-term, as they depended on the character of the farmer for collateral. In 1964, the Central Farmers' Loans Board (CFLB) was established as a supervised agricultural credit programme, which in addition to seasonal loans, also provided medium and long-term loans for specific purposes related to capital development of farms.

However, these facilities only benefited a small proportion of the smallholding majority. In the first place, before a farmer could get a loan he had to satisfy the Loans Board that he had a farm enterprise capable of benefiting from the investment and that he had experience and ability to utilize the loan effecively - to increase productivity and efficiency. In other words, a farm plan, was a prerequisite to obtaining a loan. In the second place, short-term credit to individuals for fertilizers, seeds, etc., were not favoured because of the administrative difficulties associated with them. As Kinsey (1974) pointed out, there was a definite bias against small farms, as it was felt that small farm units would be unable to support the burden of loan repayment.[46] As such, up to the introduction of Integrated Projects in the country (1968/69), agricultural credit was only available to a handful of farmers (mostly Master Farmers), for oxen and carts.

11. Types of Credit

During the late 1960's and early 1970's, three main types of agricultural credit operated in Malawi.

(a) Supervised Credit - this was largely provided to farmers in the projects, crop authorities and settlement schemes and administered by the authorities running the particular projects.

(b) Unsupervised Credit - provided outside the project areas and administered by the Government Loans Board.

(c)   <u>Commercial Bank Credit</u> - only available to large

farmers on leasehold land.

It is only (a) and (b) which are of direct relevance to
smallholder agricultural development. The seriousness with which
the question of providing credit for smallholder development was
taken during the post-Independence era, is reflected in the
general principles outlined in the 1972 "proposal for the for-
mulation of Agricultural Supply and Credit Organisation of
Malawi (ASCOM)". It was thus stated:

(i)   The needs of smallholder and estate agriculture in
      respect of credit and input supply are different -
      suitable arrangements for each should be considered
      separately.

(ii) The provision of credit to farmers is not an end in it-
      self - but only one of a number of means toward increas-
      ing the value of farm production.

(iii) The usefulness of credit in achieving this end depends
      on the availability of other complementary factors, in
      particular extension advice, ready availability of
      farm inputs and crop marketing opportunities.

(iv) As a general rule, therefore, credit will normally be
      restricted to small farmers falling within the orbit
      of projects and settlement schemes, or those otherwise
      recommended by the extension service as being credit-
      worthy.

(v)   The provision of credit to farmers should as far as
      possible aim to avoid any element of hidden subsidy,
      unless specifically intended, the restriction of credit
      in general, to farmers in projects will help to lessen
      costs and hence keep credit charges down to an accept-
      able level to the farmer.

(vi) Since virtually all credit is and will continue to be
      provided to the farmer in kind and not in cash, the
      question of arrangements for credit cannot be divorced
      from procurement, stocking and supply of farm inputs.
      It is therefore desirable that credit and inputs be
      handled by the same organisation.[47]

Several developments have emerged from these guidelines;
a major one being the "package" approach of smallholder credit.
That is credit is offered in the form of input "packages" which
are supported by "extension advice". This linking of credit,
input supply and extension has both its advantages and dis-
advantages. On the positive side, it could be argued that such
an arrangement takes advantage of the complementary nature of
three services. On the other hand, it can result in cumbersome
procedures in assessing credit worthiness, as will be discussed
later on. In addition, the multiplicity of objectives (as each
service has its prime objective) may lead to difficulties in
arriving at an optimal strategy. We shall demonstrate this
point with reference to the experience of LLDP in the next
chapter.

111. Performance of the Credit Programme in LLDP.

(a) - Objective of Credit Programme.

At the commencement of LLDP it was envisaged that within the
existing structure of smallholder farming, the anticipated
improvements in productivity could not be realised unless specific
inputs were used. This was based on several assumptions:

(1) That farmers in the programme area would not otherwise
use the recommended inputs, either at all or in the
prescribed manner, or

(2) that credit would enable a larger group of farmers to
participate in the programme than would otherwise be
the case,[48]

(3) that the necessary credit was not available from the
private sector.[49]

Provision of inputs on credit was therefore used as an
incentive for farmers to use inputs and follow recommended
husbandry practices, as the extension staff were able to use
the leverage created by the farmers' indebtedness to ensure that
extension approved techniques were used.[50] What was the
strategy used to achieve this objective, and how successful was
it?

(b) - LLDP Credit Strategy and its results.

According to Goyoso (1973), smallholder credit programmes
can be usefully assessed on two main criteria:

(1) Has the programme been successful in improving the economic viability and degree of participation of those individuals it has reached?

(2) Has the programme succeeded in improving the economic viability and degree of political participation of a substantial proportion of the small farm population sufficient to make a difference in the make up of society? [51]

In other words Goyoso suggests that we can usefully evaluate a credit programme on whether or not it has led to high farm productivity (and incomes) among the credit recepients, and on its coverage of small scale farming community. This approach will be adopted here in trying to evaluate the credit programme in LLDP.

(i) Impact of Credit on Smallholder Farm Productivity and Incomes.

The impact of credit on smallholder farm productivity and incomes is very difficult to determine mostly because many factors determine the level of these variables. Such factors include farm size, land quality, level of technology used, administrative skills of the farm operator, etc. While credit can enhance access to technology, its effectiveness in raising productivity will also depend on the other factors.

It is very important to recognise that different small-holdings are at different levels of economic viability. While credit can usefully enhance the economic position of some categories of farmers, it may not do so for others. [52] In such circumstances, a useful way to assess the impact of credit would be to disaggregate the smallholding community into several categories (using one criterion or the other, which represents the levels of economic viability of the differnt groups) and then examine the role of credit on each of these categories.

Goyoso (1973, op cit), suggested that a useful way of evaluating the farm households would be to divide them into the following categories:

(1) Those households which are already operating as profit-able enterprises.

(2) Those which have the potential to operate profitably but lack inputs.

(3) Those with such poor resources that improved technology would not mean anything.[53]

Such a breakdown would clearly show the policy measures appropriate for each group. For example, Goyoso argued that the above breakdown of the smallholding community would indicate that if the aim of a rural development effort, in such circumstances, was to attain economic viability of the small scale farmers, then the appropriate strategy would be to aim at:

(1) Maintaining the viability of the first group.

(2) minimising the time period needed for farmers in the second group to become viable, and

(3) designing special programmes such as rural employment programmes, resettlement schemes, etc, for the last group - as credit alone would not solve its problem.[54]

It is the opinion of the present writer that, the way the credit programme has operated so far in LLDP, tends to assume that those who have not been able to benefit from the "packages" offered, were at fault (eg. uncreditworthy , lack of enterprise, etc.) and therefore have themselves to blame. As such the programme is mostly geared to help those who can help themselves with little or no effort being made to meet the special needs of the very needy farmers. This issue will be highlighted when we discuss the survey results in the next chapter.

C. Distribution of Seasonal Credit in LLDP.

Up to the 1979/80 cropping season, seasonal credit in LLDP was distributed via two channels;

(i) Individual credit.

(ii) Group credit.

While individual credit was the norm in the standard units, group credit (introduced in 1973) was initially restricted to what were referred to as the Modified Input Areas (MIA - ie areas with low agricultural potential - within LLDP). It eventually spread to other areas, becoming the only form of credit available to farmers, outside the projects, settlement schemes and

crop authorities, where it was administered by the Government
Loans Board. However, the high administrative costs associated
with individual credit, coupled with the willingness of farmers
outside the project areas to "gang up" (with the encouragement
of ADMARC) and act as a group in order to get inputs on bulk at
a discount, has led to the adoption of the group credit approach
in the entire programme area from the 1980/81 season.

(i) Individual Credit.

For a person to qualify for seasonal credit he/she had to
satisfy two basic criteria.

(1) Managerial ability criterion.

(2) Credit worthiness criterion.

Managerial Ability - the person had to possess a certain
standard of managerial ability in order to achieve the potential
benefits and high returns from "packages" of new non-farm inputs.
That is, he/she was judged on individual ability of cultivation
practices and such husbandry aspects as ridging, planting,
spacing, fertilizer use, weeding and harvesting. Each of these
were rated by the Extension personnel as poor, average, good
and excellent. Any farmer with more than 3 poor ratings was
considered ineligible for credit.

Credit worthiness - had to be established before an indivi-
dual could be issued with credit. The rating was based on a risk
criteria related to five farmer typologies, as indicated below:

(1) Men, born, living and farming in the village or else-
where in LLDP.

(2) Women born, living and farming in the village but whose
husbands (if married) were living elsewhere.

(3) Men born outside the village but married and farming in
the village.

(4) People with farms outside the programme area.

(5) People with farms in the programme area but living out-
side it.

These five typologies of farmers clearly indicate that the
risk factor was related to the person's tenurial position with
regard to the piece of land he was farming. Only groups 1 to 3

which had reasonably secure tenure on their lands (within the customary tenure system) were considered reasonable credit risks - and not the last two groups.

(ii) <u>Group Credit</u>

The main objective for the introduction of group credit in LLDP was to reduce lending costs, by transfering most of the administrative, accounting, and collection responsibilities from project - management to the groups. Each member of the credit group had to satisfy the above criteria for individual credit. In addition, the credit group (with a membership of 10-30 farmers) must have been approved by LLDP. A down payment of 11% was required (10% as security plus 1% administrative charges), before the group loan could be secured. Interest on group credit was 10% per annum, while that on individual credit was 15% per year.[55]

The performance of group credit in LLDP seems to indicate that the scheme had been a major success from the point of view of the Project Administration. For example, the scheme had maintained an almost 100% repayment record (as against an average of 98% between 1972/3 and 1977/78, for individual credit). This high repayment rate had been achieved because of the sanction placed on the group, ie, the group could not secure input credit if any of its members defaulted the previous season. Thus any defaults were made good from the 10% security fund, which was replenished once the defaulter had been pressurized by his fellow members, who were eager to secure credit - and in most cases, such defaulters were expelled from the group.

However, the problem with this tendency was that the credit groups, because of their keenness to preserve their credit-wothiness, seemed to be highly selective, accepting only those who were very likely to repay credit, to the exclusion of the poorer and needy farmers. Perhaps it was a realisation of this aspect by the planners, that a new philosophy in group lending has emerged in LLDP. This philosophy involves the replacing of credit groups by farmers clubs, which are supposed to perform other development functions other than being mere channels for

credit. These farmers clubs are discussed in more detail in the next chapter.

Table 4.6   Individual and Group Credit in LLDP

Year	Individual Credit		
	No. of Borrowers ('000)	Amount of Loans (K'000)	Loan/ Borrower (K)
1972/3	21.1	382	18
1973/4	23.9	460	19
1974/5	20.5	601	29
1975/6	24.6	624	25
1976/7	23.5	627	27
1977/8	14.6	453	31
1978/9	23.1	656	28

Table 4.6 Individual and Group Credit (continued)

Year	Group credit				
	No. of Borrowers ('000)	No. of Groups	Borrowers Per Group	Amount of Loans (K'000)	Loans/ Borrower (K.)
1972/3	-	-	-	-	-
1973/4	1.8	94	19	21	12
1974/5	4.6	242	19	136	30
1975/6	7.6	410	19	235	31
1976/7	13.3	670	20	385	29
1977/8	27.9	1267	22	839	30
1978/9	28.4	1217	23	805	28

Source : Schaefer-Kehnert (1980), P. 333, Tables 1 and 2.

(d) <u>Coverage of Credit Programme in LLDP</u> .

Within LLDP, the initial programme policy was to issue as much credit as possible, since credit was used as a weapon to ensure a widespread of adoption of technology.[56] Credit rose from K4,826 in 1967/68 to K390,991 in 1972/73, with average loan per borrower rising from K7.4 to K17.3 during the same period.[57] Von Pischke (1973), cites evidence of how in some units in LLDP (3, 4 and 5), the number of borrowers in 1967/69 ranged from 68 to 133 but increased by more than 10 times by 1972/73.[58] The result of this rapid expansion was that some non-creditworthy farmers were included in the programme, with the consequence that the credit repayment rate fell from 100% in 1967/68 to about 56% in 1972/73, and this was despite the fact that all credit was provided in kind (to minimise diversion) and was supervised (to ensure effective use.)

This seems to indicate that while wide coverage of the credit programme (in terms of number of borrowers involved) can be a useful measure of the impact of the credit scheme, on the smallholder community, it may have some undesirable effects. In the case of LLDP, it led to a high default rate. The project officials, concerned about the economic viability of the credit programme had to resort to harsh measures (eg legal proceedings) to enforce repayment and this dealt a severe blow to the credit-lity of the programme.[59]

In addition, an increase in the number of borrowers <u>per se</u>, may not necessarily indicate the extent of coverage, in terms of the different categories and/or needs of the farmers. The small-holding community does not constitute a homogeneous group in terms of say, land resources, managerial ability, labour resources etc. As such different types of farmers have different needs. And this applies to credit as well. A credit programme that aims to enhance the access of a substantial proportion of the small-holding community to modern production inputs, should therefore begin by assessing the credit requirements of the various typo-logies of farmers so that the different categories can be catered for according to their needs. It appears that LLDP, in its initial attempt to facilitate a widespread adoption of technology, interpreted coverage in terms of absolute numbers.

As a result there was no attempt to tailor the credit "packages" offered to the needs and resources of the recipients, with the consequence that for people whom the "packages" offered were inappropriate, the desired productivity results did not materilise and this led to their inability to repay credit.

Results from a survey conducted by the Evaluation Section of LLDP in 1971/72,[60] indicated that there were significant relationships between:

(1) default rate and type of package taken, and

(2) defaulting and the mean labour units available to the household.

Growers who included groundnuts in their credit "packages" for example, although they constituted less than 10% of the sample, made up over 20% of the defaulters. At the same time, the mean labour unit per defaulter was found to be about 20% less than that of the non-defaulters as table 4.7 indicates.

Table 4.7 Borrowers Labour Units and Dependent Food Units.

Category	Average Dependent Food Unit	Average Labour Units
Defaulter	4.28	2.44
non-defaulter	4.70	2.98
All households	4.64	2.84

Source: LLDP (1972) Survey Credit Borrowers 1971/72 Cropping
        season, annex, p8 Table 2.8.

These results suggest that some households were offered packages which were not appropriate to their resource endowments. For example, it could be argued that some labour deficient households were offered labour intensive packages, which they were unable to attend to adequately, leading to poor yields. These poor yields, coupled with low farm prices (discussed in chapterIII) led such households to default.

C. Labour Availability And Adoption of Innovations in LLDP.

In the previous sections, it was pointed out that the main objective of the smallholder development effort in LLDP, was to raise smallhouseholder productivity of the market-able surplus. The production conditions within which this objective was to be achieved and the strategy to be employed were considered. From the above discussion, lack of modern productivity raising inputs was considered to be the main constraint to higher farm output among the households. This lack of inputs was presumed to be due to lack of purchasing power among the rural people. Credit was therefore used as the main instrument for encouraging innovation adoption in the area. However, the experience of LLDP indicates that not all households were able to take up the innovations offered in the area (as will be indicated in the next chapter) and therefore, not all households were able to raise their farm outputs and farm incomes as a result of the innovations introduced in the area.

In this section the main argument to be considered is that labour availability was very important factor that affected the pattern of innovation adoption among the households in LLDP, and that interhousehold differences in labour avail-ability profoundly affected the pattern of income distribut-ion that emerged in the area.

(I) Labour and Peasant Production

Chayanov (1966), argued that in a "purely peasant" situation because peasant production was the most predominant economic activity, differences in household incomes were mostly a result of how each household allocated its most important resource, family labour. Hence income distribution in peasant societies followed from the determinants of household family labour.[61] He further argued that labour (number of workers in a family) proportionate to the size of the family was the stable element which determined changes in land area used by the farm family. This implies that larger families (in terms of active labour force) cultivated more land and implicitly got more farm out-put than smaller ones. In such a situation, the size of the

farm was not so much the determining factor of peasant activity but rather an expression of it. He produced empirical evidence that showed that in the observed correlation between farm size and family size, the direction of causality was from family size to farm size - ie. labour availability and not land availability was the main constraining factor to household incomes.[62]

The Chayanovian model of peasant production has been subjected to many criticisms, among which are:-

(i) <u>Lack of Universality</u>- It is generally argued that the model addresses itself to peasant conditions in 19th Century Russia, and that these conditions no longer obtain in many of the peasant societies today.[63] As such any conclusions or predictions emerging from the model cannot apply to these circumstances. While it is true that present day peasant societies are not a replica of Chayanov's "pure peasant economy" it is important to realise that Chayanov presents a theoretical model and that the usefulness of a model does not lie in the fact that it should accurately describe every case to which it is applied, but rather that it should be able to illuminate differences and similarities between the case in question and that represented by the model. This should provide a basis for a search for alternative explanations. In addition, Hunt (1978 and 1979), showed that where the main assumptions of the Chayanovian model hold (universal access to farm-land, dominance of non-wage family economic units, universal access to a given level of technology, and predominance of subsistence production, etc.), the model did accurately describe family resource allocation.[64]

(ii) <u>Economic Differentiation among Peasant Households</u> - Harrison (1975 and 1979), criticises Chayanov on the issue of economic differentiation.[60] Harrison's main concern is what happens to peasant production under a capitalist structure. He is of the view that the peasant system (or smallholder production) is vulnerable to capitalist expansion, and that Chayanov and his colleagues were not able to perceive this problem because of their obsession with the "small is beautiful" vision of the peasant institutional framework. Harrison took the Marxist stand that "the peasant who produces with his own means of

production, will either gradually be transformed into a small capitalist who also exploits the labour of others, or he will suffer the loss of his means of production ....and be transformed into a wage worker". By excluding his "pure peasant" family from employing labour, Harrison argues, Chayanov fore closed this possibility.[66] This is a very valid argument which is backed by many examples of smallholder development (including that in LLDP) which has been accompanied by an increasing tendency for the progressing farmers to hire labour.

Notes - Chapter IV

1. .Kinsey (1974), op. cit. P1

2. Ibid. P 33

3. Ibid. PP 30-31.

4. Ibid. P 33.

5. LLDP, Phase III Completion Report, Lilongwe, 1979, P 2.

6. Kinsey (1974), op. cit. P80.

7. Ibid. P78

8. Ibid. PP 150-162.

9. LLDP, Sample Survey of Smallholder Agriculture, 1977/78, op. cit. P 29.

10. Kydd, J.G. (1982), Measuring Peasant Differentiation For Policy Purposes: A Report on Cluster Analysis Classification of the Lilongwe Land Development Programme, Malawi, For 1970 and 1979; Department of Economics, Chancellor College, Zomba, Government Printer, Zomba. P230.

11. See, LLDP (1979), Sample Survey of Smallholder Agriculture, op. cit., Table 22, P26.

12. This could very well be one of the reasons why farm output is low in the area.

13. See, World (1981 b), op. cit.,P 4.

14. Ibid., P 4. See, also Gemmill, Gordon T. (1972),"Economic and Social Factors in the Diffusion of Farm Mechanization", Mimeo, East Lansing: Michigan State University.

15. Weil, P.M. (1970), " The Introduction of The Ox-Plow in Central Gambia", in African Food Production Systems: Cases and Theory, edited by McLaughlin, Peter F.,Hopkins Press Baltimore. Also Binswanger, H.(1978), The Economics of Tractors in South Asia,An Analytical Review, New York: Agricultural Development Council and the International Corps Research Institute for the Semi-Arid Tropics, quoted in World Bank (1981 b), op. cit.,P5.

16. Ibid. P 5. The study quoted here is that by Green, Brook A. (1973), " Rate of Adoption of New Farm Practices in the Central Plains of the Thailand", Cornell International Bulletin, No. 24, Ithaca, Cornell University Press.

17. Kinsey (1974), op. cit.,P 80.

18. Ibid. P 80.

19. Ibid.P 78.

20. See, LLDP, Project Completion Report, op. cit., Annex V(e), P 4.

21. Kinsey (1974), op. cit., P 107.

22. Ibid. PP 146-7.

23. Ibid. PP 151-2.

24. Ibid. P153.

25. See, LLDP, Sample Survey of Smallholder Agriculture, 1977/78. op. cit.

26. Kydd, J.G.(1982), op. cit.

27. The World Bank (1981 b), op. cit.,P 11. Here it is pointed out that a number of studies have indicated that the operative constraint in African Farming systems is the peak season labour-scarcity. See, Helleiner G.K (1975), "Smallholder Decision Making: Tropical African Evidence," in Agriculture in Development theory, ed. L.G. Reynolds; New Haven Vale University Press, P 28.

28. See World Bank (1975 a), op. cit., P 4 and also World Bank (1981 d), World Development Report, 1980, Washington P 33.

29. See Chinn, D.L (1979), op. cit., P284.

30. Ibid, P 284, also Chenery et al (1977), Redistribution With Growth, Oxford, P 255.

31. World Bank (1975 a), op. cit., P 4.

32. See Cohen, J. (1978), "Land Tenure and Rural Development in Africa", in Development Discussion Paper No. 44, Harvard Institute for International Development, Massachusets, P 5. And also Castro, A.P. and others (1981), "Indicators of Rural Inequality", World Development, Vol. 9, No.5, P 402.

33. See for example Ghai, D and Radwan, S. (1980), op. cit., P 11 and also Kliest T.J (1980), op. cit., P 29.

34. Malawi Statistical Year Book, 1979,

35. However, with a rapidly growing population (about 3% per annum) and a rapidly expanding estate sector, the availability of land to smallholders is likely to be restricted.

36. Kydd, J.G.(1979), "Namwera, An Investigation into the Economic Structure of a Smallholder Community in Malawi", Occasional Paper No. 3, University of Malawi, Department of Economics. A similar figure was also presented by Ghai, et al (ILO, 1979), Rural Poverty in the Third World: Trends, Causes and Policy Rerientations, Geneva, P 22.

37. Malawi, National Sample Survey of Agriculture, 1968/69, op. cit., P 3 Table R4.5.

38. Malawi Statistical Year Book, 1979, op. cit, P 9.

39. Malawi National Sample Survey of Agriculture, 1968/69, op. cit., PP 76 and 78, Tables D4.3 and D4.1.

40. Chinn (1979) op. cit.

41. Gojoso (1973), "A Typology of Small Farmer Credit Programs," in AID. Spring Review, Vol. XIX.

42. Kinsey (1974), op. cit., P 80.

43. See Nankumba, J. (1980), Agricultural Credit: An Evaluation Study of Supervised and Unsupervised Agricultural Credit Systems in the Lilongwe District of Malawi, University of Malawi, Bunda, Lilongwe.

44. Prior to 1958, loans to Africans farmers were available from local sources - however, as Kettlewell pointed out, the machinery was cumbersome and funds were inadequate to have any substantial impact on smallholder productivity. See Kettlewell (1965), op. cit, P 246.

45. Ibid, P 246.

46. Kinsey, (1974), op. cit., P 80.

47. Malawi, The Future Supply of Farm Inputs and Credit in Malawi, EPD, Zomba. (undated)

48. See Kinsey (1974), op. cit., P 81. Von Pischke, in a report prepared for the World Bank (on credit in LLDP), seriously challenges this view, especially since the way credit has been distributed, seems to favour the relatively better off, who could easily afford the inputs without it, as long as proper incentives for their use were provided. See Von Pischke, J.D. (IBRD, 1973), Malawi - Lilongwe Land Development Project: Small Farm Credit Arrangements and Proposals for the Development of Smallholder Credit, Washington.

49. See Nankumba, J.S. (1980), op. cit., PP4-5. This view is based on the assumption that the rural sector cannot generate savings or secure credit from elsewhere. However, Nankumba has cited an example of how through proper organisation a Farmers Club in LLDP managed to obtain a commercial bank loan of K382 for its 98 members in the 1971/72 season (see Nankumba, op. cit., P 16). Although such situations are very rare in rural Malawi, the example nevertheless illustrates that other alternatives to facilitate access to other sources of credit) do exist, which can be used to bridge the purchasing power gap of the farmers.

50. See Kinsey (1974), op. cit., P 81.

51. Goyoso, op. cit, P9.

52. One author has actually gone to the extreme of claiming that smallholder credit does in some circumstances lead to an acceleration of rural poverty. See Landivar, J. (1982), "Do Credits Promote Rural Poverty?", in Development and Corporation 3, (May/June) PP 12 - 13.

53. Goyoso, op. cit., P 9.

54. Ibid, PP 9-10.

55. See Schaefer-Kehnert, W (1980), "Success With Group Lending in Malawi", Quarterly Journal of International Agriculture, Vol. 19. No. 4. (1980 PP 331-337.

56. World Bank (1981b) op. cit., P12, cites lack of input credit as one of the reasons for low innovation adoption.

57. Kinsey (1974), op. cit. P 87.

58. Von Pischke, op. cit., P 10.

59. Nankumba (op. cit: 53), notes that psychologically, credit from LLDP had remained a matter of fear to many small-holder farmers. Many felt that they might have landed in goal or have their farm produce or livestock taken over by LLDP had they failed to repay. This fear still remains. Amongst those people who did not take credit in our survey (reported in chapter 5), the main reason for not taking credit was fear of consequences of failure to repay (given by 49% of non credit takers). Most of these people were mostly the old folk, single women or those cultivating very small holdings.

60. Scott, P.J. and Bryson, T (1972), Survey of Credit Borrowers 1971/72 Cropping Season, LLDP, PP 4-5.

61. Chayanov , A.V. "The Theory of Peasant Economy", in Thorner, et al (ed) (1966), Irwin inc.

62. Ibid, PP XIV-XV.

63. See For example Kerblay, B, "Chayanov and The Theory of Peasants as a Specific Type of Economy" in Shannin, T (ed) Peasants and the Peasant Societies. PP 150-160.

64. Hunt, D. (1978), "Chayanov's Model of Peasant Household Resource Allocation And Its Relevance to Mbere Division, East Kenya", The Journal of Development Studies, Vol. 15. No. 1 PP 59-86. Also Hunt D. (1979) "Chayanov's Model of Peasant Household Resource Allocation" in Journal of
65 Peasant Studies, Vol. 6 , No. 3, PP 247-285.

65. See Harrison, M (1979), "Chayanov and the Marxists", in Journal of Peasant Studies, Vol. 7 No. 1 PP 86-100.

66. Ibid, PP 87/88.

CHAPTER V

S AMPLE SURVEY OF SMALLHOLDER AGRICULTURAL HOLDINGS IN LLDP

A Description of the Survey Results

The main instrument of the study was a survey questionnaire administered to a sample of smallholder households in LLDP between April and June 1981. This was supplemented by information officially published by the following main bodies:

1. The Ministry of Agriculture and Natural Resources (MANR).
2. The Lilongwe Land Development Programme (LLDP).
3. The National Statistical Office (NSO).
4. The Agricultural Development and Marketing Corporation (ADMARC).

In addition, informal discussions were held with officers of various departments of the Lilongwe Agricultural Development Division (LADD) under which LLDP now falls, as part of the National Rural Development Programme, and with local and traditional leaders within LLDP. The researcher had also the opportunity to attend a number of farmers' meetings organised by LLAD officials.

1. SURVEY METHODOLOGY

A. Sampling Procedure

The aim of the survey was to collect information regarding the characteristics of farm household that are associated with innovation adoption. The "household", was the basic unit of sampling.[1] As already indicated, the population of LLDP at the time of the survey was approximately 104,000 households (with a mean household size of 4.8 persons per household) occupying an area of about 6159 square kilometres. Because of the sheer size of the population and area involved, a multistage cluster sampling design was used. Two main considerations were borne in mind in the design procedure:

(a) to minimise expenses and time so that the survey could be completed within 8 to 10 weeks.

(b) to reduce the variation of the observed sample results from the true population results to an acceptably small level, so that inferences from the sample statistics could be made about the survey population with a reliable degree of confidence.

Due to the above stated reasons, the sample size was limited to 160 households. This represented about 1 in every 720 households in the survey area being selected for the sample. Although this is a very small proportion of the total population involved (about 0.14%), because of the observed homogeneity of the survey area, in terms of ecological factors, farming systems, level of technology, etc., and the use of the cluster sampling technique, the selected sample can be taken to be reasonably representative of the survey population.

For administrative purposes, the programme area is divided into 40 units. These served as our primary selection units. Four units were selected using the "probability of selection proportional to size" (PPS) method, in the first stage. [2] The second stage involved the selection of 4 villages from each of the selected 4 units, again using the PPS procedure. From the lists of farm families in each village, maintained by the Unit Centres, and updated annually (in most cases), a list of ten households was selected, using the help of a table of random numbers.

Advance notices were sent, through the village headmen of the selected villages, to each of the selected households, requesting the head of the households (or their representatives - who were to be members of the household), [3] to make themselves available at their homes at a pre-arranged date and time for the interview. This arrangement greatly minimised the extent of non-response. Only on a very few occasions was it necessary to make callbacks or replacements (by picking another household

from the village family listing, with the help of a random
numbers table).

All interviews were conducted in the vernacular language
(with the help of a standard translation of the English
questionnaire), at the homes of the interviewees. The degree of
co-operation from the respondents was very impressive, making
it possible for the survey to be completed in 9 weeks.

B.   Data Analysis

The completed questionnaire which contained information
on various household characteristics, were analysed on the
Glasgow University computer, using the Statistical Package for
Social Sciences   (SPSS).[4]

The data contained on the questionnaires were both of a
qualitative and quantitative nature. However, due to the
absence of any records regarding smallholder use of say inputs,
labour allocation to various activities, cash outlays on inputs
and labour, etc , even the quantitative data could only at
best, be presented as grouped data. This imposed a serious
limitation on the type of data analysis that could be under-
taken. It meant that greater reliance had to be placed on
non-parametric analysis techniques, such as frequency distri-
butions and crosstabulations. However, in a few cases, where
a more rigorous analysis was required inorder to gain a deeper
understanding of the relationship between some variables, some
transformations had to be made on the grouped (quantitative)
data to make them ratio variables which could be subjected to
such statistical techniques as contingency tables analysis,
regression and correlation analyses, etc. This was done by
multiplying the group means by the frequencies associated with
those groups. It is therefore very important to bear in mind
that these more advanced analytical techniques were improvised
(due to the nature of the data), thus their results, which
althhough they usefully exposed the relationships between the
various variables, should be interpreted within this limitation.

C.   Household Typologies.

(i)   Criteria of Classification

The main improvements in household income in the project
area, were supposed to come from the adoption , by the farmers,
of the various innovation packages introduced in the area, and
the improved crop husbandry practices advocated by the extension
services.   Thus the extent to which a farm household   would
benefit from the project depended very much on its extent of
adoption.   Experiences elsewhere have indicated that there
are a lot of factors that determine whether a particular
household will adopt a particular type of innovation or not
at any one given point in time.   The World bank(1981b), for
example, lists the following factors among those that inhibit
adoption of innovations: [5]

(a)   Lack of credit.

(b)   Limited access to information.

(c)   Inadequate farm size.

(d)   Inadequate incentives associated with farm tenure
       arrangements.

(e)   Insufficient human capital.

(f)   Absence of equipment to relieve labour shortage (thus
       preventing timeliness of operations).

(g)   Chaotic supply of complementary inputs and inappropriate
       transportation infrastructure.

The World Bank points out that removal of such constraints
by introducing facilities to provide credit, information,
orderly supply of inputs, infrastructure investment, etc., with
the expectation that greater adoption would result, leading to
improved farming practices and consequently higher farm incomes,
has not been borne out by the results.   This is largely attributed
to differences in adoption behaviour across socio-economic groups
and overtime. [6] It therefore appears that there is no way
of knowing a priori what the impact of introducing a
certain innovation in the area will be among the people,
without a comprehensive knowledge of the socio-economic set

up of the place.' That is, there is need to know the chara-
cteristics of the various innovating households. Here an
attempt will be made to present a theoretical model of the
smallholdings in LLDP (based on our survey results), to
try to explain the current pattern of innovation adoption in
the area.

As already pointed out, our argument is that the likely
benefits accruing to a household (from the development effort)
will depend a great deal on the type of crop enterprise(s) the
household engages in. This in turn depends on the labour
availability situation in the household. From these two
aspects, it could be argued that the households in LLDP can
be usefully categorised on two main criteria:

(a) Labour availability
(b) Crop enterprise.

Using the labour availability criterion, the households
could be subdivided into two broad categories, viz:

(a) Female-headed households
(b) Male-headed households.

And, using the crop enterprise criterion, three main groups
could be identified:

(a) Those predominantly growing tobacco.
(b) Those predominantly growing improved maize varieties.
(c) Those not growing the two above crops but also engaged
     in agricultural production as own operators.

The idea behind the stratification emerged during the
process of the survey, and was thus applied to the survey data
after the survey was completed, and not before, since it was
not contemplated at the time. It is very important to recognise
this fact, since the resulting typologies were not affected in
any way through any deliberate manipulations of the sample
design by the researcher, but were inferred from the survey
results. Their analysis therefore is very revealing of the

circumstances in the area. The result of this post-survey
stratification was 4 more or less clearly cut typologies of
households as follows:

1.   Female-headed Households (Typology 1) - ie where the
female head is either widowed, divorced, separated or
unmarried. Or where the husband has migrated abroad or
elsewhere in Malawi, and does not make regular remittances
to the household.

2.   Male-headed Households Growing neither tobacco nor
Improved Maize (Typology 11) - but engaged in agricultural
production as an own operator either fulltime or part-time.

3.   Tobacco Growers (Typology 111) - ie where the male household
-head was afulltime farmer with an established tobacco growing
tradition (ie. grown tobacco for at least 3 years prior to the
survey).

4.   Improved Maize Growers (Typology 1V) - that is, where the
male-headed household predominantly grew improved maize varieties
(where this took up the largest proportion of cultivated land),
but no tobacco.

These typologies were not perfectly closed categories,
nevertheless, each typology had certain recognisable chara-
cteristics as Table 5.0 indicates. The following section
will be devoted to a description of the survey results, while
the next chapter will provide a more detailed analysis of the
results, especially with regard to sources of inter-household
differences in incomes.

Table 5.0   Summary Characteristics of Household Typologies
in LLDP 1980/81.

Characteristics	Household Typology				
	I	II	III	IV	All
Average Farm Size(ha.)	0.87	1.18	2.03	1.97	1.66
Average Household Size	3.31	4.18	6.23	4.74	4.80
Average Family Labour Force (AEs)	1.36	1.85	2.65	2.03	2.05
Average Total Maize Output (Kg.)	480	600	1780	1940	1390
Average Total Household Reported Cash Income (K).	54.20	57.50	251.20	227.50	171.6

II.   A Summary of the Main Characteristics of the Household
Typologies.

Before describing the survey results in full, a brief descrip-
tion of the characteristics of the various household typologies
will be given, as they were observed.

(a)   Typology I   (Female-headed Households)

The survey included 26 households (16.5% of sample), which
were headed by females. These households were mainly composed of
elderly women (over 45 years) either living alone or with their
unmarried children. These households are at the bottom end of the
income scale for a number of reasons. Firstly, their main handicap
appears to be the absence of the traditional male head,which
means that they have less family workers (as the average family
workforce is made up of an adult male and an adult female plus
say one or two children of working age (over 15 years). This

results in these households having lower cultivated areas. As Table 5.0 indicates, the survey results show that this category of households had a mean cultivated area of 0.9 hectares, and an average family workforce of 1.36 adult equivalents, as against an average cultivated area of 1.6 hectares and average workforce of 2.05 adult equivalents.

Secondly, the main pre-occupation of this group was subsistence food production to meet their family food requirements. None of the 26 female-headed households interviewed grew tobacco, and only 2 participated in growing improved maize varieties. The survey indicated that this group cropped an average of 5.3 bags(about 480 kg.) of maize- the staple crop in the area. With an average household size of 3.31 persons, and assuming that each person requires about 230 kg. of maize grain per year to subsist on, the total food requirements of an average household in this category come to about 760 kilograms of maize grain, which exceeds the average food supply available. This implies that quite a considerable number of households in this category may be having food deficits for a considerable part of the year. The consequence of this is that most of these households are likely to hire out labour to other households or seek non-farm sources of income (during the food deficit period – which happens to be the time when farm labour is in greatest demand) and this is likely to aggravate their labour problems.

Not surprisingly, this category had the second lowest share of household income coming from crop sales (58.8%) with 25% coming from business (mostly beer brewing),10% from sale of livestock and their products and 6% from employment (largely casual labour – ganyu, on other's farms, see table 5.1

Table 5.1   Reported Cash Income per Household by
             Household Typology and Source

Source	Household Typology				
	I	II	III	IV	All
Crop Sales (K.)	31.76	20.48	240.17	140.59	126.0
Livestock/Poultry (K)	5.30	18.29	9.57	17.97	13.6
Business,etc.(K)	13.84	11.39	2.01	58.46	26.0
Employment,(a)etc.(K)	3.40	7.71	-	10.46	6.0
Total (K)	54.3	57.53	251.75	227.49	171.6
Average Income For Group as % of Overall Total	5.2	6.7	40.6	47.5	100.0
No. of Respondents as a percentage of Total (%)	16.5	20.2	27.8	35.8	100.0

Notes: (a) Includes Transfers.

The likelihood of this group improving its farm output
and farm income is limited first by the labour deficiency,
which tends to restrict cultivated areas- as is indicated by the
very low hectarages associated with it.. Secondly, the low
bultivated areas, as already pointed out, mean that the credit
rating of this group, on the "ability to repay" criterion was
very low, thereby restricting its access to inputs. As a
matter of fact, only 2 out of the 26 female-headed households
included in our survey, reported to have taken credit in the
1980/81 season, and in both cases it was for groundnuts seeds.
The majority of the female-headed households, when queried
about their low use of farm inputs, replied that it was not
because they were refused credit as such, but that they them-
selves felt that given their labour constraint and small
hectarages, their ability to produce a surplus over and above
their family requirements, and therefore be able to repay
credit, was minimal. Hence, they were afraid to take credit
because of the high risk involved if they failed to meet
repayment (such as having their livestock or some other
possession impounded by the project officials). The end
result was that this category of households hardly took up
any of the innovation "packages" offered, and therefore their
farm output and farm incomes remained low.

During the survey, it was noted that most of the crop
sales reported by this category came from groundnuts. This
was very puzzling given the fact that the groundnut enterprise
was labour intensive,(twice as many hours /ha/year) and provided
the least returns to labour, and that the female-headed house-
holds had the lowest family labour forces. At first glance,
there seems to be little economic sense for a labour deficient
household to grow groundnuts. However, this paradox can be
explained in several ways. First, by considering the product-
ion options available to these households. As already pointed
out, none of these households participated in the tobacco
enterprise. This may be partly because of the long established
tradition in the area of regarding tobacco production as a male
enterprise, which brings in an element of bias towards male
growers when it comes to quota allocations, but more importantly

the labour demands associated with this enterprise are far
beyond the labour supply capacities of these households as
implied in the linear programming model to be presented latter
in this paper.   In addition, it could be argued that
hybrid maize (as a cash crop), represents a more risky
innovation as well as being outlay intensive (in terms of
seed and fertilizer) so that in the absence of extra resources
to cover it, is best left alone. Secondly, and more important,
it could be argued that although the groundnut enterprise is
relatively labour intensive, in terms of total annual labour
requirements, its labour profile (see table 6.11) suggests
that those labour requirements are fairly evenly spread
throughout most of the year, with no sharp peak requirements.
For example, thinning and weeding, the most time specific
operations, take up only 18% of the labour requirements, while
for maize these operations take up about 37% of the total
labour requirements. This implies that for groundnuts, a
greater proportion of the labour required goes into operations
such as harvesting (lifting from the ground), shelling, grading
etc, operations where timeliness is not absolutely crucial, and
can therefore be done over a fairly long period. Women farmers
due to their heavy commitment to domestic chores, are inclined
to minimise peak demands on their labour time from non-domestic
activities. Hence they tend to take on enterprises which if
combined with the more or less compulsory maize enterprise,
will minimise the labour peaks. Groundnuts production, due
to its relative flexibility in labour allocation, as opposed
to say, hybrid maize, whose most time specific operations are
labour intensive, becomes the favourite crop. This is
supported by the LP model.

Typology 11 (Male-headed households growing neither tobacco nor
improved maize).

This group of farmers (20% of sample) resembled the female
headed households in its "non-adoption" of the packages offered
in LLDP. This group had a slightly higher average family
labour force (1.85 adult equivalents as against 1.36 for the
female-headed one), due to the presence of the adult male.

It appears that these growers did not grow tobacco mostly due
to the labour constraint as was pointed out for the former
group. This labour deficiency, as in the former case, imposes
a double bind on the households. First, it limits their ability
to engage in either tobacco or say, hybrid maize production and
meet subsistence food requirements at the same time, as will be
illustrated later by the LP model. Secondly, the labour
deficiency results in smaller cultivated area (an average of
1.18 hectares for this group, compared to 2.03 ha. for the tobacco
growers.

The survey indicated that this group of households had
average total reported cash income of K57.5 per household,
which was 22.9% and 25.3% of that of the tobacco growers and
improved maize growers respectively. Less than 25% of the
average cash income for this group came from sale of
crops - especially minor crops such as sugar cane, tomatoes
and other vegetables, etc., and not from sale of maize, as
quite a number of these households indicated that they usually
had food deficits. About 32% of their cash receipts came
from livestock and poultry sales. The implication of this is
that their limited opportunities to earn income from crops
made them resort to selling chicken, goats, etc, which , it

could be argued, was not without adverse nutritional effects
on their members. This group had the highest proportion of
its reported cash income coming from employment. This was
largely casual agricultural employment either on other house-
holds' farms or on agricultural estates, signifying that this
group was the main supplier of the hired labour required by
groups 111 and 1V. Just like the female-headed households,
these households expressed the view that they did not have
confidence in their ability to repay credit associated with
the "packages" offered in the project. They therefore
opted to meet their food deficits by hiring out labour, rather
than taking high yielding innovations with all the risks
associated with them.

Typology lll (Tobacco Growers)

This group consisted mainly of farmers who had been growing tobacco (mainly dark fire-cured) as their main cash crop for some time. One main characteristics of this group was the large cultivated areas. The survey results indicated that they farmed on average, 2.03 hectares per household, some 2½ times that of the average female-headed households. Naturally, such large hectarages required large labour forces, and the average family labour force (in adult equivalent) for this group was 2.7. That is , tobacco growers had on average 1.33 family workers per hectare as compared to 1.51 for the female-headed ones. Table 5.0 also indicates that this category of households had the largest size, ie, 6.2 persons as compared to 4.8 persons per household for the whole survey.

It is quite interesting to note that despite the large family labour forces, the tobacco growers also made use of a substantial amount of hired labour in their farms. The average expenditure on hired labour of K15.88 per household for this group suggests that, at the average rural wage rate of K0.10 per hour, the average household used about 160 man hours of hired labour, for agricultural purpose s.

The 1977/78 sample survey of smallholders in LLDP, indicated that credit in the project area was significantly biased towards tobacco growers. This was mostly because they were associated with the criterion of credit worthiness (ie. large hectarages). Our survey supported the same hypothesis as already indicated. It appears that credit was deliberately channeled to tobacco growers in an attempt to boost its exports (as it is the foremost foreign exchange earner for the country). However, since its production is controlled by allocation of annual quotas - usually to existing producers who successfully met their quota requirements the previous season, or those who have indicated that they have adequate resources, ie, labour and land , and possess the required managerial ability there is an element of continued support of a particular clientele, with the result that only those few privileged to grow it are assured of the benefits.

It is interesting to note that despite the relatively
high gross margins associated with the tobacco enterprise
(about 3 times those for local maize) farmers in the area
have not specialized in its production. This appears to be
for two main reasons. First, the crop has enjoyed a
remarkable increase in its price on the world market, and
some of this price increase (although not very much) has
worked its way through the domestic prices. As a result,
there has been a general rise in the number of producers
within the last decade. The project authorities have reacted
to this increasing demand from the farmers to grow the crop
by reducing the level of quotas given to individual farmers
from an average of between five and six thousand pounds
(2270 kg to 2720 kg) to an average of one to two thousand
pounds (450-900 kg) per grower - an aspect which has had
some positive distributional effects. The second reason for
this lack of specialization appears to be the high premium
placed on own food production by the farmers, plus the fact
that their privileged access to credit (on account of being
tobacco producers), allows them to secure credit for improved
maize as well, which boosts their subsistence food supplie s.

The tobacco growing households reported an average of
K251.75 in cash receipts for the 1980/81 season. Most of
this (95.4%) came from crop sales, (especially tobacco),
with only 3.8% coming from livestock and poultry sales and
less than 1% from business enterprises. The fact that none
of the tobacco growing households reported any income from
employment, supports the earlier view that as the tobacco
enterprise was very labour intensive and at the same time
provided the highest revenue, it fully and gainfully occupied
the households' available family labour on the family farm.
The high gross margins associated with the tobacco enterprise,
coupled with heavy labour requirements, raises the opportunity
cost of labour migration (or hiring out labour), thus resulting
in the nil receipts from off-farm employment. This is reinforced

by the advantageous position of this group with respect to farm crecit.

Typology lV - (Improved Maize Growers).

This group of households may be said to have emerged in the area over the past decade or so. It appears to be usually headed by say, businessmen, tradesmen, returned migrants, people who have retired from paid employment, and in some cases, ex-tobacco growers - all of whom are engaged in agricultural production either part-time or full time. There are two main varieties of improved maize grown in the area, ie the hybrids (eg, MH12) and the composites eg, (UCA). The composites give a higher yield per hectare than the local maize varieties (about 2 times) and are easily processed into ufa (pounded maize flour) for nsima (hard maize flour porridge), the traditional dish in the area. The hybrids on the other hand, give much higher yields per hectare than the local varieties (about 3 times). However, in addition to storage problems associated with them, they are difficult to process for nsima. As a result they are almost exclusively grown as a commercial crop to be hammer-milled to be used for commercial purposes (eg brewing beer) of for mass consumption in the urban areas. The 1977/78 sample survey (1979) indicated that few of the farmers in the area grew the hybrid variety (8% of the sample).[7] A closer investigation indicated that improved maize growers, in general, are the more "progressive" in terms of following proper crop husbandry methods (eg correct fertilizer application, timely weeding, pest control etc). Our survey indicates that this group of farmers tends to have larger than average cultivated areas (although slightly lower than the tobacco growers.) In terms of labour availability, the family labour forces for this category are more or less the same as those for the average household in the area. These households indicated the highest reliance on hired labour, as evidenced by their average expenditure on hired labour of K16.80 (an equivalent of about 170 man hours). This could be due to the fact that the improved maize varieties unlike the local varieties,

require a close adherence to proper planting times and all round timeliness of operations. This means that the peak labour demands could well be beyond the capacities of the family workforces, requiring that they be supplemented by hired labour. Thus, although this group have on average, lower family workforces than the tobacco growers, their ability to hire labour (which is enhanced by their non-farm income) allows them to perform the timely operations associated with the improved maize enterprise.

The survey indicated that the improved maize growers (not growing tobacco) had more or less the same level of reported cash income per household as the tobacco growers. However, it is the composition of the incomes of those groups (in terms of sources) which was of great interest. As table 6.1 indicates, crop receipts accounted for 62% of the reported cash receipts for these people (compared to 95% for the tobacco growers). Receipts from business etc (which were almost nil for the tobacco growers) constituted 26% of the cash income for this group. As hinted earlier, most of the household heads in this group were men who either retired from paid employment, or returned migrants or business and tradesmen. As such they tended to have other sideline activities in addition to farming. Probably as a result of this, they displayed the highest cash expenditure on improved seeds and fertilizers, ie an average of K45.00 per household compared to K24.60 for the tobacco growers. This reflects the fact that while the tobacco growers were largely dependent on LIDP credit for inputs, the improved maize growers, probably due to the diversity in their cash income resources, used cash purchases to counter the imbalances.

2. DESCRIPTION OF SURVEY RESULTS.

A. Household Characterics

1. Household Size

The mean household size among the 158 households surveyed, was found to be 4.7 persons. While the mean household size did not differ very much among the administrative units covered by the survey [see table 5.1(a)], it differed considerably among the various typologies of households as table 5.1(b) indicates.

Table 5.1(a)   Mean Household Size by Administrative Unit.

| | ADMINISTRATIVE UNIT NUMBER | | | | |
	4	14	29	33	ALL
Number of Households interviewed	40	39	39	40	158
Mean Household Size	4.8	4.9	4.6	4.7	4.7

Table 5.1(b)   Distribution of Household Size by Household Category.

| Number of Members in Household | Household Category | | | | |
	1	11	111	1V	ALL
	(% of Households)				
1-2	34.6	29.1	6.8	14.1	18.4
3-4	42.3	22.6	18.2	29.8	27.3
5-6	23.1	25.9	34.1	36.9	31.7
7-8	—	13.2	27.3	17.5	17.1
9-10	—	6.5	6.8	1.8	3.8
11 and over	—	—	6.8	—	1.3
	100.0	100.0	100.0	100.0	100.0

table 5.1(b) (continued)

	I	II	III	IV	All
Average for Category	3.3	4.6	6.2	4.7	4.7
n=	26	31	44	57	158

Table 5.1(b), clearly indicates that category 1 households (female-headed), with a mean household size of 3.3 persons per household, were the smallest, while category 111 (tobacco growers) were the largest, with a mean household size of 6.2 persons per household. Less than 25% of category 1 households had more than 3-4 members in them, while about 75% of category 111 households had more than 3-4 members. Categories 11 and 1V households had more or less the same mean size (4.6 and 4.7 persons, respectively).

11. Main Occupation of Household Head.

The survey results indicated that the various household typologies differed in their involvement with farming. Overall, 85% of the household heads interviewed reported that they were full-time own-farm operators, while 13% combined farm activities with other non-farm activities, and 2% were engaged in full-time non-farm activities, relying entirely on the labour of other family members and/or hired people to do the farm work (see table 5.1(d). However, 98% of group 111 household heads claimed to be employed full time on their own farms - which tends to reflect both the labour intensive nature and the profitability of the tobacco enterprise.

81%, 87% and 77% of categories 1, 11, and 1V also reported to be fully engaged in own farming. It is interesting to note that while part-time farmers in groups 1 and 11 mostly combined farming with casual employment on other peoples' farms and/or petty trading (such as brewing beer, selling handicrafts, etc). the part-time farmers in group 1V were largely engaged in business enterprises (such as transport, retail trading, etc) and other off-farm employment activities.

111. Age of Household Head.

The mean age of the household heads surveyed was 46.7 years
(table 5.1c).   55% of them were below 50 years old, 37% were
between 50 and 70 years and 8% were over 70 years old.   There
were marked differences in age distribution among the various
typologies. For example, category 1 (female-headed) heads
tended to be the most eldery (mean age 57.5 years), with over
75% of them in the 50 and above age group. This reflected the
fact that these households were mostly headed by elderly single
women, most of them either widowed or divorced (constituting
80% of the group) as table 5.1(f) indicates.

On the other hand, group 1V (improved maize growers) comprised
of the youngest farmers (mean age 40.6 years). 53% of these
farmers were below 40 years old. The tobacco growers, though
considerably older than the improved maize growers, tended to be
a little younger than the group 11 farmers, although the age gap
between the two groups was not very large. (table 5.1 (c).

Table 5.1(c)   Age of Household Head.

	(% of Households Category				
AGE GROUP	1	11	111	1V	TOTAL
Less than 20 years	—	—	—	—	—
20-29 years	—	16.1	11.4	24.6	15.8
30-39	—	22.6	20.5	28.1	20.2
40-49	23.1	6.5	20.5	22.8	19.0
50-59	42.3	22.6	27.3	10.5	22.8
60-69	7.7	22.6	15.9	4.0	15.2
70 and over	26.9	9.7	4.5	—	7.6
	100.0	100.0	100.0	100.0	100.0
Average	57.5	48.1	47.3	40.6	46.7
n=	26	31	44	57	158

Table 5.1(d) Main Occupation of Household Head.

	(% of Households).				
	1	11	111	1V	TOTAL
Own Farm Full-time	80.8	87.1	97.7	77.2	85.4
Others' Farm Fulltime	—	—	—	—	—
Part-time Farm	15.4	12.9	2.3	19.3	12.7
Other Non-farm	3.8	-	-	3.5	1.9
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

1V. Level of Formal Education.

·59% of the farmers surveyed had never attended any formal schooling, 39% had had some primary education and only 2% had completed primary education. It was mostly the younger farmers who had attended school. This is reflected in the way level of formal education attained by household head is distributed among the various household typologies, as table 5.1(e) indicates.

It was pointed out above that the improved maize growers (category 1V), tended to be the youngest. Here the evidence indicates that, they also tend to be the relatively more educated, as 61% of the farmers in this group attended some primary school leaving only 33% who had had no formal schooling. This compares with 15%, 16% and 41% of the groups 1, 11, and 111, respectively, who attended some primary school (there being none who completed primary in these groups).

V. Membership of Farmers' Club.

The survey results indicated that quite a respectable proportion of farmers (64%) belonged to farmers clubs. However the distribution of club membership among the household typologies was very uneven. In category 1V (improved maize growers), 93% of the farmers belonged to farmers' club and in group 111 (tobacco growers), the proportion was slightly lower (82%). For groups 1 and 11, only 12% and 29% of the farmers claimed to belong to farmers' club.

It should be mentioned that, currently, farmers' clubs
are considered by the majority of farmers as vehicles for
farm credit, since the new credit policy in the whole country
is to provide credit through farmers' clubs (or other recognised
groups) rather than through individuals. This has meant two
things. Firstly, those farmers, who for one reason or the other,
do not intend to take farm credit do not bother to join the
clubs. Secondly, as the responsibility of credit repayment,
under this system, becomes a group responsibility (as any
group which defaults is refused credit the following year),
acceptance of club membership very much depends on an individuals'
potential to repay credit. This potential is mostly based on
the individuals' past success in producing a marketable surplus
of those crops for which input credit is readily available, ie
improved maize and tobacco (and to some extent groundnuts). It
is therefore not surprising to see that it is mostly improved
maize growers and tobacco producers (who happen to be relatively
young and educated) who gain access to these clubs.

It is only fair to mention that the project management is
trying hard to change this image of the farmers' clubs, by
encouraging the clubs to take up more diversified roles. For
example, they are encouraged to take up welfare aspects, such
as raising funds to help needy club members. They are also
encouraged to take group approach to the agricultural develop-
ment problem, by considering the club as a vehicle through
which farmers can learn from one another and teach each other
better methods of agriculture. In other words, the objective
is to instil a spirit of self-help and togetherness among the
club members. If this succeeds, a remarkable breakthrough will have
been made in the smallholder development strategy of the country.

Table 5.1(e)   Level of Formal Education Attained by Household Head.

	(% of Households)				
	1	11	111	1V	Total
Never Attended School	84.6	83.9	59.1	33.3	58.9
Some Primary	15.4	16.1	40.9	61.4	39.2
Completed Primary	—	—	—	5.3	1.9
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Table 5.1(f)   Marital Status of Head of Household

	(% of Households)				
	1	11	111	1V	Total
Married - non-polygamist	3.8	74.2	65.9	77.2	61.4
Polygamist	11.5	9.7	29.5	15.8	17.7
Divorced	30.8	—	2.3	—	5.7
Widowed	46.2	16.1	2.3	—	11.4
Never married	7.8	—	—	7.0	3.8
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Table 5.1(g).   Membership of Farmers Club

	(% of Household Heads)				
	1	11	111	1V	ALL
YES	11.5	29.0	81.8	93.0	64.0
NO	88.5	71.0	18.2	7.0	36.0
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

B. ·FARM CHARACTERISTICS.

1. Farm Size

The mean size of cultivated area among the households interviewed was 1.66 hectares. With a mean household size of 4.7 persons, the above figure implies that the mean cultivated hectarage per capita among the sampled households was 0.35 hectares. The size distribution of the farms indicate that well over 75% of the households' cultivated farms of.less than 2 hectares: However, a more interesting picture emerges when we consider the size distribution of farms among the households. It was observed that 96.2% of category 1 households had cultivated farms of less than 2 hectares, while the corresponding proportions for the other groups were 90.3%, 65.9% and 70.2% for categories 11, 111, and 1V respectively (see table 5.2(a). This implies that category 1 households, had on average, the smallest farms (average 0.9 ha), followed by category 11 (average 1.2 ha), while category 111 households had the largest farms (average 2.1 ha), followed by category 1V households (average 2.0). A similar pattern was exhibited when average per capita hectarage was considered, except that category 1V households had the highest per-capita hectarage (0.41 ha), followed by category 111 households (0.33 ha).

However, the size distribution of cultivated areas among the households does not necessarily reflect the access to land of the various households. Table 5.2(b) indicates that among category 1 households, who have the smallest farms, only 69% of the households had cultivated all the land available to them. This constrasts with 84%, 93% and 86% for categories 11, 111 and 1V, respectively, suggesting that the size of the cultivated area is determined by other factors in addition to land availability per se. We shall examine this issue in Chapter 6.

Table 5.2(a)   Size   Distribution of Cultivated Land per Household and Category - 1980/81.

FARM SIZE	HOUSEHOLD CATEGORY (% of Households)				
	1	11	111	1V	Total
Less than 0.4 ha.	23.1	9.7	2.3	5.3	8.2
0.4 - 1.0 ha.	57.1	48.4	15.9	33.3	35.4
1.1 - 1.8 ha.	15.4	32.2	47.7	31.6	33.5
1.9 - 2.6 ha.	3.8	6.4	15.9	15.8	12.0
2.7 - 4.8 ha.	—	3.2	18.2	8.8	8.9
5.9 and over	—	—	—	5.3	1.9
	100.0	100.0	100.0	100.0	100.0
Mean hectarage/house-hold (ha)	0.9	1.2	2.1	2.0	1.7
Mean hectarage/capita (ha)	0.26	0.28	0.33	0.41	0.35
n=	26	31	44	57	157

Table 5.2(b)   Land Cultivated - as Proportion of Total Land Available to Household.

	1	11	111	1V	Total
All the land	69.2	83.9	93.2	86.0	84.8
More than half the land	23.1	13.0	6.8	12.3	12.0
less than half the land	7.7	3.1	—	1.7	3.2
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Table 5.2 (c)   Change in Amount of Land Used by Household during
the Past 5 years.

	(% of Households)				
	1	11	111	1V	Total
NONE	30.8	61.3	61.4	73.7	60.8
YES - gave some away	23.1	—	6.8	1.8	6.3
- lent some away	38.5	38.7	29.5	21.0	29.7
- acquired more land	7.7	—	2.3	3.5	3.2
	100.0	100.0	100.0	100.0	
n=	26	31	44	57	158

Table 5.2(d)   Adequacy of Land Available for Household Needs

	HOUSEHOLD CATEGORY				
	1	11	111	1V	ALL
YES	42.3	38.7	47.7	28.1	38.0
NO	57.7	61.3	52.3	71.9	62.0
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

11. Land Availability.

The issue of land availability and its effect on farm size
in LLDP is not clear from our survey results.   Table 5.2(c)
indicates that overall, 36% of the households interviewed had
experienced a decline in the amount of land available to them
during the previous 5 years, **largely** through giving some away
to relatives and adult children (6%) and for lending it away
 usually to better-off relatives needing more land (30%)
Only 3% of the sample reported having augmented their land
holdings, either by farming virgin land or acquiring it from
relatives, etc, during the 5 year period.   This strongly
suggests that land pressure is eminent in the area.

When availability of land to the various categories is
considered, it is seen that those households with the smallest

cultivated areas (eg. category 1) tended to have some considerable
proportions of their available land holdings uncultivated (Table
5.2(b), as mentioned above. At the same time table 5.2(c)
indicates that most of category 1 households (62%) had experienced
a decline in the amount of land available to them, during the 5
year period, this compared with 39%, 36% and 23% for categories
11, 111, and 1V. This clearly indicates that the poorer house-
holds had less land available to them then, than five years past.
The age structure of the household typologies seems to offer a partial
explanation for this aspect. Table 5.1(c) indicates that category
1 households are in general headed by older people, followed by
category 11 ones, while the household heads of categories 111 and
1V tend to be relatively younger. This suggests that categories
1 and 11 are at a point in the family cycle where the more energe-
tic members of the family (adult children) are leaving or have
left the household to start their own households. This results
in the high proportion of households in this category giving
away land to others - hence leading to a decline in land availa-
bility to the category. At the same time, the link between
availability of labour (family) and farm size is revealed. It
is seen that as these categories lose their energetic members,
their ability to cultivate land effectively declines, and this
results in their tendency to lend their land away to relatives
and friends (as opposed to outright giving away - as they intend
keeping such land for younger children).

Table 5.2(d), which indicates the adequacy or inadequacy of
land available to family needs, supports most of the points
raised above. In the first place, the table shows that a conside-
rable proportion of the households surveyed (62%) considered the
land available to them as inadequate for family needs - thus
suggesting the rising pressure on the land. On the other hand,
the fact that category 1 households (with the smallest cultivated
area) had the second largest proportion of households who conside-
red their land as adequate for household needs, supports the view
that such households were at a point in time, in the family life
cycle which represented both reduced workers and consumers. This
suggests that their small cultivated area were a result of reduced
labour availability as well as reduced consumption requirements.

However, the data does not allow us to say which of the two factors is stronger.

Table 5.2(d) also provides a very interesting case. That is category lll has the largest proportion of households who indicated that they had adequate land for their needs (48%), while category lV, had the smallest proportion (28%). The family cycle aspect cannot be applied here as a full explanation of the observed pattern, largely because the difference in the mean ages of the household heads of the two categories is not that large - ie 47 years for group lll and 41 years for group lV. A more likely explanation appears to be the type of enterprises the two household categories engage in. As pointed out previously, category lV households are engaged in production of improved maize, and are the more commercially oriented households. As such, they tend to have a higher craving for land, so as to enhance their income positions further. On the other hand, category lll households were predominantly engaged in production of tobacco. Although some of them grow improved maize, their engagement in this enterprise appeared to be largely for subsistence purposes. And, as tobacco production was subject to quota limitations, their cash income positions could not be substantially affected by the availability of extra land. More important, it appears that due to the heavy labour demands associated with the tobacco enterprise, tobacco producing households had less spare labour than the hybrid maize producers (whose peak labour demands were more amenable to hired labour due to the associated sharp peak). As a result, most of the tobacco growing households (48%) felt satisfied with the sizes of their farms.

It therefore appears that a household's size of cultivated land was dependent upon three main factors, namely:

1. Labour availability.
2. Degree of commercialization (as determined by the type of crop enterprise undertaken).
3. Physical availability of land.

While it can be said that the third factor was largely outside the influence of the individual household, the other two were very much determined by the households' resources.

We shall return to consider them in more detail in Chapter 6.

C. LABOUR AVAILABILITY.

1. Family Labour

Family labour is the predominant source of labour for farm work among the smallholder households in LLDP, and indeed, for most of the smallholding community in Malawi. According to our survey, 68% of the households interviewed reported that they depended entirely on family labour for agricultural work during the 1980/81 season. The remaining 32% supplemented their family labour with hired labour. No household was found to be fully dependent on hired labour for farm work.

Household size is the main indicator of family labour availability. As indicated above, the mean household size was found to be 4.8 persons. However, while household size can be taken as a proxy to availability of family labour, it should be borne in mind that it does not give an indication of the quality of labour available as this depends on other factors. Age composition of the household labour force is one such factor. In table 5.3(a) household labour available is presented in adult equivalents - that is after adjusting the household size by the age composition of the members following the conversion table below:

Age group	less than 10 years	10-14	15-19	20-59	60 +
Adult equivalent coefficient	NIL	0.25	0.75	1.0	0.50

Note that the coefficents do not distinguish quality of labour along sex lines. This is largely due to the fact that the present writer does not agree with the procedure of many researchers which upholds this distinction.[8] The author's observation in LLDP indicated that in households where female and male workers were present, the men and women engaged themselves equally in the most labour demanding exercises, such as , weeding, banding, manure or fertilizer application, harvesting, etc. Gone seem to be the days when men felled trees and tilled the land while women tended, harvested and processed the crops. Today men and women are found working side by side, say in the tobacco barn, grading their crop, a job which was exclusively for men. As

such, there seems no justification for grading agricultural labour along sex lines.

Table 5.3(a)   Size Distribution of Family Labour Available to the Household (in Adult Equivalents).

Adult Equivalents	TYPOLOGY (%)				
	1	11	111	1V	ALL
0- 1.5	30.7	22.5	9.0	3.6	20.9
1.6 - 2.5	50.0	54.8	43.2	43.8	46.8
2.6 - 3.5	15.4	16.1	20.5	33.3	17.7
3.6 - 4.5	3.9	0.6	20.5	17.5	12.0
4.6 and over	—	—	6.8	1.8	2.5
	100.0	100.0	100.0	100.0	100.0
Average AE/household	1.4	1.9	2.7	2.0	2.1
n=	26	31	44	57	158

Table 5.3(a) indicates that the average household had a work force of 2.1 adults equivalents. This implies that the typical family workforce comprised of the two spouses - plus one or two children of working age. However, about 20% of the sample had only 1½ workers (AEs) or less, while only 14.5% had more than 3.5 workers. Almost half the sample had between 1½ and 2½ workers.

The table clearly indicates that Group 1 households, because of the absence of the male spouse, had the smallest family work-forces (average of 1.4 AEs). It is evident that for this group, male absenteeism had a serious consequence on family labour availability. Groups 11 and 1V had mean labour forces which were more or less equivalent to the mean available labour force for the whole sample, ie, 1.9 and 2.0 respectively - suggesting that in a majority of cases, such households had only the two spouses available to work. This implies that the children from such households did not usually stay to work on the household farm once they grew up. Discussions during the interviews suggested that for group 11 households, because of their weak economic position, the grown up children either tended to break away from the nucleas family to start their own families, or go

away from home in search of work - usually of the unskilled
type. For group 1V households, on the other hand, the
children tended to be relatively better educated and therefore
moved from the farm into urban employment. Group 111 house-
holds had the largest average family labour forces available
(average 2.7 AEs), a direct result of the large family sizes
associated with this group. Again discussions during the
interview tended to suggest that migration of members from these
households tended to be minimal due to the improved income pros-
pects offered by the tobacco enterprise. However, as the
survey did not specifically seek to explore the reasons why
other households had fewer members in residence than others, an
omission which is now deeply regretted, the above explanation
should be interpreted as speculative. More research is defini-
tely needed in this very important area, before more forceful
conclusions can be formed.

11.   Hired Labour.

As indicated above, about ⅓ of the sample reported that
they had used one type of hired labour or the other for
agricultural purposes during the 1980/81 season. Due to lack
of precise records regarding labour hiring, it was not possible
to find out the exact duration for which labour was hired. But
most of the labour was hired during December and January (the
crop establishment period) for weeding purposes (reported by
54% of the households hiring labour). Temporary labour (ganyu),
of a piece work nature, was the most popular type of labour
hired (reported by 68% of the households hiring labour), refle-
cting the seasonal nature of the type of work involved. 46% of
those hiring labour reported paying cash for labour, 38% paid
in kind while 16% paid for their hired labour for both in cash
and in kind. The average expenditure on hired labour, for the
labour hiring households was K32 per household.

Looking at the various household typologies, it is observed
that only 15% of the households in category 1 reported hiring
labour during the 1980/81 season for agricultural work, paying
for it largely in kind. For group 11 only 13% reported to have
hired labour also paying mostly in kind for it. Given that
category 1 households had the smallest family forces (1.4 AEs),

it would be expected that these households would tend to supplement their family labour with hired labour. The fact that the available evidence suggests that this was not the case seems to indicate the very weak economic position of these households. In addition, it gives a pointer to the fact that these households plus category 11 households are the main sources of hired labour in the area,and evidence provided in table 6.1

indicates that temporary employment is very important source of cash income for these households.

Group 111 households had the highest proportion of labour hiring households (52%), despite their very large family labour forces as indicated in table 5.(3a). This is partly due to the large cultivated areas associated with this group and partly due to the fact that the tobacco enterprise is very labour intensive.

It is interesting to note that quite a substantial proportion of households in this category 27.4% paid their labour either in kind, or both in cash and kind, with 25% having paid in cash. This could largely be due to the fact that this group of farmers does grow a substantial amount of maize in addition to tobacco, and obtains higher output levels than the average farmer, due to their privileged access to input credit. As they consider tobacco to be their main cash earner, they tend to use maize as payment for such needed labour on their tobacco plots - which the marginal farmers, usually with food deficits at the particular time of the year, prefer to cash. This is supported by the evidence provided by Kydd (1982) which indicates that a very small proportion of farm cash income for tobacco growers (less than 10% of total farm receipts) came from maize.[9]

Group 1V households have the second largest proportion of labour hiring households (32%), and the majority of them (72% of the labour hirers) paid for their hired labour in cash. This strongly suggests their diversified cash earning opportunities and their greater degree of commercialization.

Unfortunately, the only indicator available from our survey which gives a measure of the extent of use of hired labour by the various household categories is the total expenditure on hired labour, presented in table 5.3(d). Given that different types of hired labour (say child labour as opposed to adult labour)

command different prices at different times of the year (due
to the differences in activities performed),   total expenditure on hired labour may not provide a very satisfactory
measure of amount of hired labour used by a household. However,
due to the time and financial limitations on our study this
short coming could not be helped, suffice it to say that any
tentative conclusions emerging from such a measure should be
viewed within those limitations.

From table 5.3(d), it is quite evident that categories
1 and 11 made the least use of hired labour. Those who hired
labour in these two categories spent on average K7.1 and K5.2
per cultivated hectare, respectively, to supplement their
family labour forces, which for the two categories averaged
1.6 workers per cultivated hectare. This contrasts with
average expenditures on hired labour of K12.9 and K23.4 per
cultivated hectare, to supplement average workforces of 1.2
and 1.1 workers per cultivated hectare, for categories 111 and
1V, respectively. Such evidence strongly suggests that the
ability of those households in categories 111 and 1V to hire
labour had a very strong bearing on their cultivated hectarages and farm incomes. We shall take up this issue in more
detail in the next chapter.

Table 5.3(b) Types of Labour Hired.

Types of Labour Employed	(% of Households)				
	1	11	111	1V	Total
None Hired	84.6	83.9	47.7	68.4	68.4
Temporary labour hired	11.5	12.9	38.6	17.5	21.5
Permanent labour (more than 6 months)	—	—	6.8	1.8	2.5
Customery labour hired	3.9	—	2.3	8.8	4.4
Mixture	—	3.2	4.5	3.5	3.2
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Table 5.3(c) Form of Payment For Hired Labour.

Form of Payment	Household Typology (% of households				
	1	11	111	1V	All
Nil (no labour hired)	84.6	83.9	47.7	68.4	68.4
Cash	7.7	—	20.4	22.8	14.4
In kind	7.7	9.7	24.9	3.5	12.2
Both	—	3.2	7.0	5.3	5.0
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Table 5.3(d) Household Expenditure on Hired Labour.

EXPENDITURE	% of Households				
	1	11	111	1V	All
Nil	84.6	83.9	47.7	68.4	68.4
Less than K5	3.8	3.2		—.	3.8
K5 - 10	3.8	9.7	37.5	20.5	11.4
K11 - 20	7.6	—	25.0	6.8	7.0
K21 - 50	—	—	16.7	9.1	5.1
K51.- 100	—	—	12.5	6.8	3.8
K101 and over	—	—	4.2	6.8	5.1
	100.0	100.0	100.0	100.0	100.0
Average cost/household (K)	6.38	.6.25	27.80	46.80	31.50
Average Expenditure per cultivated ha(K)	7.1	5.2	12.9	23.4	18.6
n=	26	31	44	57	158

D. INPUT USE AND FARM CREDIT.

I. Farm Inputs Applied on Crops.

The most widely used inputs in LLDP in the 1980/81 season were fertilizers and farm manure (on maize and tobacco), sulphur dust (on groundnuts) and pesticides (on maize and tobacco). Table 5.4(a) indicates that 40% of the households sampled reported to have used fertilizers during the year, 24% used both manures and fertilizers, 4% used manures only while 31% reported that they had not applied any farm input to their crops. On the whole, a reasonably high proportion of households in the sample (69%), used farm inputs of one type or the other. The distribution of input use among the various typologies highlights the typical problem for groups 1 and 11. As table 5.4(a) indicates, 65% and 61% of category 1 and 11 households, respectively reported that they had not used any inputs. This contrasts with 2% and 21% for categories 111 and 1V, respectively.

Table 5.4(a)   Types of Inputs Used by Household Typologies.

TYPE OF INPUT	HOUSEHOLD TYPOLOGY (%)				
	1	11	111	1V	All
None	65.4	61.3	2.3	21.1	31.0
Fertilizers	26.9	25.8	43.2	50.9	39.9
Manures	7.7	6.5	—	3.5	3.8
Fertilizers & Manures	—	6.5	52.3	22.8	24.1
Other	—	—	2.3	1.7	1.3
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Table 5.4(b) indicates that 33% of those interviewed expressed the view that they felt that they were using adequate amounts of inputs on their crops. Of those who felt dissatisfied with their level of input use, 26% said the price of inputs was too high, 18% said they were not given enough credit and 22% cited other reasons, the commonest one being that they were afraid

either to take credit or to increase their level of credit for fear of the likely consequences to befall them if they failed to meet their credit commitments. Groups 1 and 11 had the largest proportion of households blaming high prices (50% and 39% respectively) and expressing unease with taking credit (27% and 36% respectively). Most of groups 111 (55%) and 1V (39%) households expressed satisfaction with the levels of inputs they were applying to their crops. Of those who did not, the main complaint was inadequacy of credit (54%).

Table 5.4(b) Reasons for Using Less Inputs than Required.

Reason	Household Typology (%)				
	1	11	111	1V	ALL
None	50.0	38.7	15.9	15.8	25.9
Prices too high	15.4	12.9	18.2	22.8	18.4
Inadequate credit	7.7	12.9	54.5	38.6	32.9
Other	26.9	35.5	11.4	22.8	22.8
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

II. Credit

The results of the survey indicated that LLDP was the only source of input credit for the smallholder community in the project area.   However, the author is of the opinion that some of the poorer farmers who did not qualify for LLDP credit were able in some circumstances, to obtain input credit via their wealthier friends and / or relatives.   It is possible for example that some better off farmers with access to input credit might have taken inputs on credit , over and above their requirements and chanelled the rest to their poorer relations.   Such secondary credit could not be recorded by our survey as both recipients and donors were not keen to divulge such information for fear of reprisals from the project credit staff.

Table 5.4(c) shows that 57% of the households interviewed got farm credit from LLDP during the 1980/81 season. However, the table indicates that this credit was very unevenly distributed among the household typologies. For example, only 2 of the 26 category 1 households (8%) got credit, while the corresponding proportion for category 11 households was 22.6%. This compares with 77% and 88%, for categories 111 and 1V, respectively. This clearly indicates that typologies 1 and 11 farmers got very little credit, accounting for less than 10% of the credit recipients. This bias in credit allocation towards categories 111 and 1V households is quite evident in table 5.4(f). According to this table, 65% and 45% of categories 1 and 11 households, respectively, had never received any credit from LLDP (at least for the five consecutive years prior to our survey). This compares to only 7% and 5% for categories 111 and 1V households, respectively. On the other hand, the table indicates that 5% and 25% of categories 111 and 1V households, respectively, had been in receipt of LLDP credit for each of the previous 5 years prior to the survey.

Table 5.4(c)   Source of Farm Credit

Source	Household Typology (%)				
	1	11	111	1V	All
None	92.3	77.4	22.7	12.3	41.1
LLDP	7.7	22.6	77.3	87.7	58.9
Other	—	—	—	—	—
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Table 5.4(d) Type of Inputs Obtained on Credit

	Household Typology (%)				
	1	11	111	1V	All
None	92.4	77.4	22.7	12.3	41.1
Fertilizers	—	13.0	40.9	17.5	23.4
Improved seeds	3.8	6.4	—	21.1	7.6
seeds/fertilizers	3.8	3.2	36.4	47.4	27.2
others	—	—	—	1.7	0.7
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	50	93

Table 5.4(e) Size Distribution of Credit Among the Households taking credit.

Amount of Credit	Household Typology (%)				
	1	11	111	1V	Total
K5 - K10	—	—	2.9	10.0	6.5
K11 - K20	100.0	71.4	17.6	24.0	26.9
K21 - K50	—	28.6	52.9	42.0	44.1
K51 - K100	—	—	14.7	16.0	14.0
K100 and over	—	—	11.8	8.0	8.6
	100.0	100.0	100.0	100.0	100.0
	K15.5	K21.2	K47.0	K41.1	K41.2
n=	2	7	34	50	93

Table 5.4(f)   Number of Times Household took Credit in 5 years.

| Number of Times | Household Typology (%) | | | | |
	1	11	111	1V	Total
0	65.4	45.2	6.8	5.3	23.4
1	11.5	9.7	2.3	5.3	6.3
2	11.5	16.1	6.8	24.6	15.8
3	3.8	16.1	11.4	26.3	16.5
4	3.8	9.7	15.9	14.0	12.0
5	3.8	3.2	56.8	24.6	25.9
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Most of the credit was used for either seed/fertilizer (reported by 48% of the households) or fertilizer packages (reported by 39% of the sample). Only 13% of the households reported to have used credit for purchasing improved seeds (and that was mostly groundnut seeds). No other inputs were reported to have been obtained on credit. The average amount of loan per credit taking household was K41.2 [see table 5.4(e)]. In general terms, the distribution of credit (terms of loan size) among the credit recipients was more or less a normal one, with the majority of households (44.1%) having loans which fell within the K21 - K50 range. This reflects the fact that during the 1980/81 season, there was an element of credit rationing among the applicants, which arose out of an increasing desire by LLDP to increase the credit clientele and at the same time to reduce the dependence of the better-off farmers on credit, thereby inducing them to increasingly rely on purchasing inputs on cash. This aspect is supported by the evidence presented in table 5.4(b) which shows that 55% and 39% of categories 111 and 1V households (the most credit worthy ones) expressed the feeling that LLDP was giving them ° less input credit than their credit needs. During the interviews, quite a number of these households said that they had been given less inputs on credit than they had applied for. In view of the evidence presented in table 5.4(f), this is a very welcome development in the project area. It is hoped that more and more of the wealthier farmers, will not only be subjected to some form of credit rationing, but will eventually

be weaned off, to give chance to the more needy farmers to get inputs on credit. However, this author does not pretend that this is an easy task, for there are many obstacles. For example, most of these better-off farmers, represent the powerful and more enlightened rural people. As such, they are the likely people to hold offices in the various local groups (such as farmers clubs and Village Planning Committees) through which LLDP works to enhance local participation. (10) Access to credit and other facilities offered by LLDP, are the main incentives which ensures their co-operation in the Project's efforts. Therefore reducing the amount of benefits accruing to them may not be without some repurcusions to the project success, but if this results in greater participation among the poorer households, it will have been a worthy price to pay, and its long term benefits may well outweigh the short term disadvantages.

111. Cash Purchases of Inputs.

Our survey results indicate that not all farm inputs used in LLDP were obtained on credit. A substantial number of households (comprising 38% of the sample), bought inputs for cash. 50% of those who made cash purchases of inputs bought fertilizers, 32% bought both fertilizers and improved seeds and 15% spent cash on farm implements (especially the ox-cart - for farm transport). Cash purchases of improved seeds were negligible. This appears to have been due to two reasons. The first is that, improved seeds were available mostly as seed/fertilizer packages (either on credit or for cash), to ensure their success. The second is that, there were usually supply problems involved, which prevented availability of improved seeds on cash. Those that were available were usually provided as seed/fertilizer packages, to give the extension personnel a leverage on the farmers.

Table 5.4(g) Type of Inputs Purchased on Cash .

Inputs	Household Typology (%)				
	1	11	111	1V	All
Fertilizers	100.0	100.0	63.0	16.7	50.0
Insecticides/pesticides	—	—	—	4.2	1.7
Improved seeds	—	—	—	4.2	1.7
Farm Implements	—	—	3.7	33.3	15.0
Fertilizers and Improved seeds	—	—	33.3	41.6	31.6
	100.0	100.0	100.0	100.0	100.0
n=	4	5	27	24	60

As expected, categories 1 and 11 households participated
least in buying inputs on cash, as they comprised only 15% of the
households making cash purchases of inputs, and the average cash
outlay per household (purchasing inputs) in these two categories
was K10.2, the equivalent of 1½ bags (50 kg/bag) of say Sulphate
of Ammonia fertilizer. On the other hand, category 111 house-
holds comprised the largest proportion (45%) of cash purchasers
of inputs, spending most of their cash on fertilizers. The
average cash outlay per household (purchasing inputs on cash) for
this typology was K37.7. Category 1V households tended to buy
mostly seed/fertilizer packages [see table 5.4(g)].

Overall, it can be said that the proportion of households
using inputs is quite high (69%). Credit was the main source of
these inputs (reported by 59% of sample), supplemented by cash
purchases (reported by 38% of sample). However, the survey
results have indicated that categories 1 and 11 households
participate minimally in the use of inputs, with only 16% of
them getting credit and the same proportion buying inputs on
cash. In the next chapter, we shall examine in more detail the
factors that might be responsible for this state of affairs.

Table 5.4(h)   Cash Outlays on Farm Inputs

Amount of Cash	Household Category (%)				
	1	11	111	1V	Total
Nil	84.6	83.8	38.6	57.9	62.0
Less than K5	—	—	—	1.9	0.6
K5 - K10	11.5	9.8	2.3	5.3	6.3
K11 - K20	3.9	6.4	29.5	14.0	13.9
K21 + K50	—	—	8.2	12.3	9.5
K51 - K100	—	—	2.3	1.9	1.3
K101 and over	—	—	9.1	7.0	5.1
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

Main Constraints to Farming Operations.

Each of the households interviewed was asked to state what was considered as the most limiting constraint on the household's prospect from farming. The largest proportion of the households (37%) claimed that land shortage was their main problem. This was followed by lack of funds for farm inputs (28.5%), labour shortage (19%) and other (10%). The prominence of the land shortage factor highlights the eminence of the rising pressure on the land in the area. However, it needs some careful consideration. At face value, this finding is at variance with the hypothesis advanced in this study, ie, that land availability per se, is not the main limiting factor to most households, for increasing their farm incomes, but rather that labour is. Nevertheless, when the main constraints faced by each of the categories are examined, the predominance of the labour factor can be established. For example, although land shortage features predominantly among the better-off households (categories 111 and 1V), the labour availability problem is still relevant. to these households. As indicated earlier on, these two groups are associated with a high level of labour hiring. This implies that the availability of cheap labour (from the poorer households) masks the labour availability problem of those households   (especially since

it was assumed in the appraisal projection of LLDP.that households would use family labour for farm work). More important, this aspect of hiring labour merely transfers the labour problem from the better-off households to the poorer ones, making the situation of the latter group more serious. At the same time, table 5.4(i) indicates that labour shortage and lack of farm inputs predominate among the poorer households. A closer investigation reveals that these two factors (labour availability, and lack of inputs) are closely causally linked, with the direction of causality running from labour availability to lack of inputs (especially those provided on credit). This implies that even those households who said lack of farm inputs was their main constraint, it was actually lack of adequate labour (through its link to availability of inputs on credit), which was at the centre of the matter. It therefore appears that the labour availability situation in the area, warrants more attention. It is for this reason that most of the next chapter will be devoted to a discussion of this issue.

Table 5.4(i) Major Constraints on Households' Farming Activities.

Constraint	Household Typology (%)				
	1	11	111	1V	All
Land shortage	26.9	32.3	40.9	40.4	36.7
Shortage of funds for input	34.6	38.7	25.0	22.8	28.5
Labour shortage	38.5	19.4	11.4	15.8	19.0
Inadequate extension	—	—	—	3.5	1.3
Low farm prices	—	3.2	2.3	1.8	1.9
Other (a)	—	6.5	20.5	15.8	12.7
	100.0	100.0	100.0	100.0	100.0
	26	31	44	57	158

(a) includes those who said they faced no constraints at all.

E. Household Incomes

The estimation of incomes for rural households in most
rural societies present many difficulties mostly due to the
predominance of subsistence production. Most of the rural
households produce and consume goods and services that do not
pass through formal marketing channels. This presents a
problem of valuing such commodities.   Even where the
commodities are marketed, or where "imputed values" are agreed
upon, for the non-marketed output, the records to establish
precisely how much of say commodity was produced, marketed and/or
consumed by the household during a given period, do not exist.
Besides, the goods and services involved are not homogeneous in
terms of quality - thereby rendering any attempts at valuation,
using "imputed values", more or less useless. As such, any
estimates of rural household incomes, in such circumstances, are
at best, mere indicators of what the prevailing income position
might have been.

This study faced precisely the same problems in trying to
provide an estimate, of the existing pattern of income distri-
bution in LLDP (which is necessary in order to evaluate the
inpact of the programme in the area). As such, the results
presented below, should be regarded as a mere indicator of the
situation, and should be interpreted cautiously. Three main
indicators of household income were selected, namely:

(a) Subsistence income - ie estimated total output of
      maize (the main staple food in the area),   er
      household, for the year 1979/80.

(b) Farm-income - Estimated sales from crops and livestock
      (including poultry), for the 1979/80 season.

(c) Non Farm Income - Estimated cash receipts from non-farm
      sources such as off-farm employment, business and
      transfers.

1. Subsistence Income.

In LLDP, and indeed, for most of rural Malawi, it is the
pride and wish of every household head to be self-sufficient

in basic foodstuffs. As such, it could be said that it is
the primary objective of all farm households in LLDP to
provide themselves with adequate maize (the main staple), for
the year. This proposition is strengthened by the fact that all
farm households in the area grew maize for own consumption.
While it is recognised that other minor crops such as cassava,
sweet potatoes, finger millet, etc, are used for subsistence
purposes (usually to supplement maize), because they were not
grown by all the households, they were left out, from the food
self-sufficiency indicator. Their absence, therefore, under-
estimates the food self-sufficiency position, especially of
those households using them substantially. However, as
indicated in chapter 2, these minor crops form a very insigni-
ficant proportion of the farming system in the area. Table
5.5(a), therefore, presents the size distribution of total
maize output levels per household, according to household
typology.

Table 5.5(a)   Total Maize Output (harvested in the 1979/80
season).

Total maize output (200 lb bags)	Household Typology (%)				
	1	11	111	1V	All
Less than 2.5	19.2	16.1	_	1.8	7.0
2.5 - 5	30.8	22.6	15.9	19.3	20.9
6 - 7.5	34.6	12.9	4.5	21.1	17.1
8 - 10	11.5	38.7	25.0	12.3	20.9
11 - 20	3.8	6.5	15.9	7.0	8.9
Over 20	_	3.2	38.7	38.5	25.2
	100.0	100.0	100.0	100.0	100.0
Average output per household (kg)	480	600	1780	1940	1390
	26	31	44	57	158

Table 5.5(b) Types of Livestock and Poultry Kept.

Type	Household Category (%)				
	1	11	111	1V	All
None	19.2	32.3	2.3	14.0	15.2
Local cattle	3.8	_	13.8	1.8	5.1
Goats/sheep/pigs etc	26.9	19.4	11.4	12.3	15.8
Chicken, ducks, etc	34.6	16.1	15.9	31.6	24.7
Goats & chicken etc	11.5	19.4	20.5	19.3	18.3
Local cattle, goats, chickens etc	4.0	6.4	22.7	5.2	10.1
Other	_	6.4	13.6	15.8	10.8
	100.0	100.0	100.0	100.0	100.0
n=	26	31	44	57	158

(a) includes dairy cattle - owned by only 1 household.

Table 5.5(c) Reported Cash Receipts From Livestock and Poultry Sales.

Receipts	Household Typology (%)				
	1	11	111	1V	All
Nil	69.2	74.2	56.8	71.9	67.8
Less than K5	15.4	_	13.6	8.8	9.5
K5 - K10	7.8	_	11.4	3.5	5.7
K11 - K20	_	9.7	9.1	3.5	5.7
K21 - K30	3.8	6.4	2.3	_	2.5
K31 - K50	_	_	2.3	3.5	1.9
Over K50	3.8	9.7	4.5	8.8	6.9
	100.0	100.0	100.0	100.0	100.0
Average per household in each category (K)	5.3	18.3	9.6	18.0	13.6
n=	26	31	44	57	158

Table 5.5(d) Reported Cash Receipts From Crop Sales 1979/80 season.

Receipts	Household Typology (%)				
	1	11	111	1V	All
Nil	38.5	38.7	4.5	8.8	18.4
Less than K5	3.8	—	—	—	0.6
K5 - K10	3.8	9.7	—	1.8	3.2
K11 - K20	11.5	12.9	—	7.0	7.0
K21 - K30	3.8	6.5	6.8	14.0	8.9
K31 - K50	11.5	16.1	11.4	12.3	12.6
K51 and over	27.1	16.1	77.3	56.1	49.3
	100.0	100.0	100.0	100.0	100.0
Average/household (K)	31.7	20.5	240.2	140.6	126.0
	26	31	44	57	158

Table 5.5(e) Reported Cash Receipts From Business and Self Employment.

Receipts	Household Typology (%)				
	1	11	111	1V	All
Nil	42.3	64.5	90.9	61.4	67.1
Less than K5	—	—	—	—	—
K5 - K10	7.7	9.7	—	3.5	4.4
K11 - K20	15.4	6.5	2.3	5.3	6.3
K21 - K30	26.9	6.5	6.8	8.8	10.8
K31 - K50	3.8	9.7	—	3.5	3.8
K51 and over	3.8	3.2	—	20.8	7.6
	100.0	100.0	100.0	100.0	100.0
Average/household (K)	13.8	11.4	2.0	58.5	26.1
n=	26	31	44	57	158

Table 5.5(f)   Receipts From Permant and Temporary Employment

	Household Typology (%)				
	1	11	111	1V	All
Nil	69.2	64.5	95.5	87.7	82.3
Less than K5	—	—	—	—	—
K5 - K10	26.9	12.9	_	5.3	8.9
K11 - K20	3.8	12.9	_	1.8	3.8
K21 - K30	_	3.2	_	1.8	1.3
K31 - K50	_	6.5	_	1.8	1.9
K51 and over	_	_	4.5	1.8	3.8
	100.0	100.0	100.0	100.0	100.0
Average/household (K)	3.4	7.7	_	10.5	6.0
n=	21	31	44	57	158

11. Reported Cash Income.

The pattern of income distribution, emerging from the
survey results [tables 5.5 (a) to 5.5(e)] will be discussed in
detail in chapter 6, suffice it to say at the time that the
income differential (reported cash income) between the better-
off households and the poorer households in the region, is of
the order of about 4:1. Although this does not represent a
very acute distributional problem in the area, it still
indicates that after a decade of the development effort in the
area, about 2/5 of the farmers are getting incomes which are
lower than they might have been getting if they participated
and benefitted fully from the programme.

Notes- Chapter V.

1. A Household is defined as a group of people who usually take all their food from a common pot, ie. a group of people who eat together. (They do not have to sleep in the same dwelling unit but in a majority of cases they do).

2. The following table illustrates how each of the 4 units was selected at random from the 40 units within LLDP.

Unit	Number of Households in Unit.	Range of Random Numbers assigned.
A	450	1 - 450
B	276	451- 726
C	1054	727- 1780
D	848	1781- 2628
E	561	2629- 3189

To select two units from units A to E, using the PPS method and an appropriate table of random numbers, two random numbers between 1 and 3189 are selected. If say the numbers selected are 8 and 1945, then the units selected are A and D. In this way each unit has a chance of selection proportional to its size(as measured by number of households).

The same procedure was used for selecting the villages. As for the individual households, all the households in a selected village were numbered consecutively, from 1 and the 10 households whose numbers corresponded to the first 10 random numbers drawn, were selected.

3. The head of the household is defined as that member of the household, male or female, upon whom the major decisions regarding resource allocation fell. In the cases where an adult male was resident in the household he was assumed to be the household head in keeping with the local tradition of letting the adult male make such decisions. However, it is recognised that in some cases such an assumption may not be right, especially where the male and female members of the household specialize in different crop enterprises, such as tobacco production for the males and groundnuts or food production for the females, although such a tendency seems to be on the decline in LLDP.

4. See, Nie, N. et al (1970), Statistical Package For the Social Sciences, McGraw-Hill, New York.

5. See, World Bank (1981 b), <u>op. cit.</u> P1.

6
6. <u>Ibid.</u> P4.

7   See, LLDP, <u>Sample Survey of Smallholder Agriculture,</u>
    <u>1977/78,</u> op. cit.

8. Previous work on this tends to value male labour higher than
    that of women (see, for example Collinson, M.P. (1972),
    <u>Farm Management in Peasant Agriculture,</u> Praeger, New York.

9. Kydd (1982), <u>op. cit.</u> P215.

CHAPTER VI

AN ANALYSIS OF THE SURVEY RESULTS.

In the previous chapter, we looked at the main
characteristics of the survey population. It was found that
despite the apparent homogeneity of the rural households,
there were basic differences in their farming systems which
were reflected in their income positions. It was also found
that certain household characteristics regarding such factors
as labour availability, access to credit, access to non-farm
income sources, etc, could be associated with particular crop
enterprises and total income positions. This facilitated the
grouping of the survey population households into a limited
number of typologies which could be subjected to a more
penetrating analysis.

In this chapter, an attempt will be made to trace the
inter-relationships of the factors affecting total household
income, which were suggested in the analysis undertaken in
the previous chapter. In particular, to see how the current
rural development effort has interacted with these factors
and therefore contributed to the shaping of the observed
pattern of income distribution in the area. As already pointed
out, this analysis will focus on the examination of interhouse-
hold differences in reported cash receipts, particularly those
from the farm enterprise (sale of crops). Because of the semi-
subsistence nature of the economy under review, the analysis of
the cash receipts will be supplemented, wherever possible, by
an analysis of a subsistence income component, mostly in the
form of the household's available food supplies (largely maize,
the staple food in the area). The omission of asset values
from the analysis is regretted. However, because the focus of
the analysis is on innovation adoption, it is largely the house-
hold's ability to purchase farm inputs, which is supposedly
linked to the household's total cash receipts (including those
from assets such as cattle, goats, grinding mills, etc.), which
is crucial. Although the households do not keep detailed
records of their cash receipts, it is believed that due to the
limited nature and sources of the income flows, the respondents

were fairly accurate in their reports. However, as pointed

out in chapter V, the lack of accurate information meant that

the data, could only at best, be presented as ordinal scale

data. This imposed a limitation on the nature of the

statistical, analysis which could be undertaken.

In order to put the discussion of the sources of inter-
household differences in income in a theoretical perspective,
a number of models, which highlight the relationships between
household farm income (especially that from sale of crops) and
the key factors affecting it, will be presented. The purpose
of this part of the analysis will be to render the findings
emerging from the survey applicable to similar circumstances.

1. Interhousehold Differences in Incomes Analysed

In order to explain the interhousehold differences in

income observed in the survey area, a number of ⸱ associated

variables were selected, ie;

   (i) Cultivated area.

   (ii) Family size (in standard consumption units).

  (iii) Size of family labour force.

   (iv) Total expenditure on hired labour.

    (v) Amount of input credit taken.

   (vi) Cash outlays on inputs.

Table 6.1 below summarises the levels and sources of house-

hold incomes of the household typologies observed in LLDP.

Table 6.1.   Reported Average Cash Receipts by Household
Typologies and Sources.

Source	Household Typology (%)				
	1	11	111	1V	All
Crop sales	58.5	35.0	95.4	61.8	73.4
Livestock etc.	9.8	31.8	3.8	7.9	7.9
Business	25.5	19.8	0.8	25.7	15.2
Employment	6.2	13.4	-	4.6	3.5
Total	100.0	100.0	100.0	100.0	100.0
Average total Receipts/household	K54.23	K57.53	K251.75	K227.49	K171.67
Group total as % of total income	5.2	6.7	40.6	47.5	100.0
% of Respondents in group	16.3	20.1	27.8	35.8	100.0
n=	26	31	44	57	158

A.   Factors Associated With Crop Revenue.

The general proposition in this study is that farm income
(from sale of crops) is a function of a number of interrelated
.factors many of which cannot be easily quantified (eg. soil
quality, weather, a farmer's managerial expertise, etc.).
However, such factors apart, a number of quantifiable factors
can be identified. Fig. 6.1 summarises these factors and the
suspected general nature of their interrelationships. Using
the survey data, we shall try to establish the existence of
these interrelationships and if possible to try to determine
their strength as well as their direction of operation by
testing the hypotheses which were outlined in Chapter I.

FIG. 6.1 A GENERAL MODEL OF INNOVATION ADOPTION IN LLDP
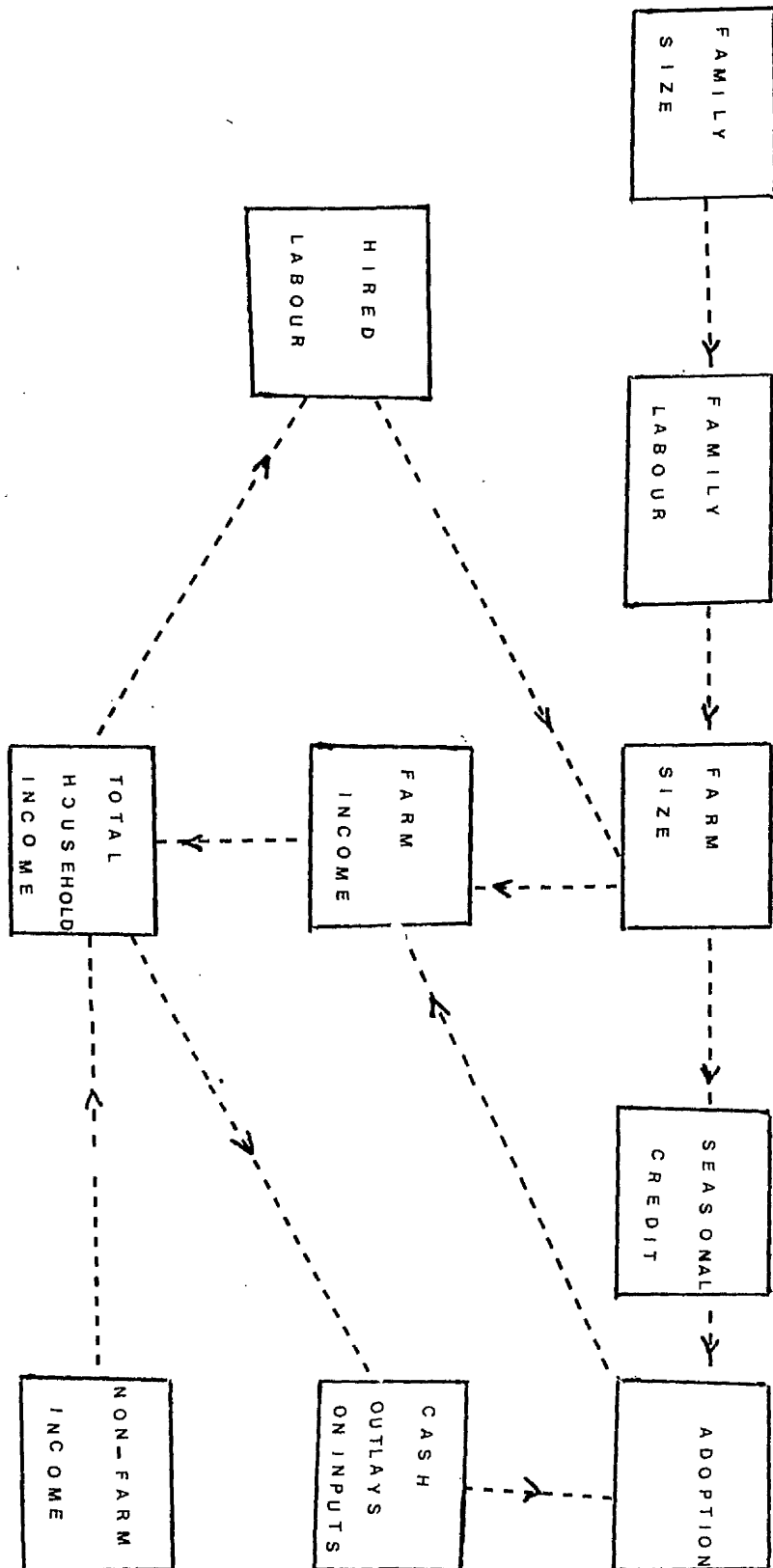
I. <u>The Relationship Between Farm Income and Crop Enterprise</u>
<u>Undertaken</u>.

Our first hypothesis concerns the relationship between
farm enterprise (type of crops grown) and farm income, ie:

> A household's level of total revenue from sale of crops
> is likely to be closely associated with the type of crop
> enterprise undertaken (ie. adoption or non-adoption of
> innovations offered by the project ....Ia.

As pointed out in chapter IV, the main crops grown in
LLDP are tobacco, groundnuts and maize, and the main innovations
introduced in the area to boost farm incomes have been improved
seed varieties of maize and groundnuts, and fertilizers and
insecticides for tobacco and improved maize. Thus working under
the assumption that farm households will try to maximise revenue
from the farm enterprise   , it is expected that they will
adopt the cultivation of those crops supported by the project
(in the form of providing input credit and extension advice).

The survey data have indicated that those households who
grew tobacco (typology 111), had the highest gross farm receipts
(an average of K240), followed by the improved maize growers
(typology   ), who reported gross farm receipts averaging K141.
On the other hand, those households who did not participate in
either the tobacco or improved maize enterprises (typologies I
and 11) had the least gross farm receipts, averaging K31 and
K21 respectively - see table 5.5d. Such evidence indicates
that those households who took up the main innovations
introduced by the project and used complementary inputs as
recommended by the extension personnel, did obtain higher
revenue from sale of crops than those that did not. This was
supported by the results of a chi-squared analysis, between
crop revenue and use or non-use of inputs, which yielded a
chi-squared value of 36.2, with 2 degrees of freedom and
significant at the 1% level. A Cramer's V of 0.49, indicated
that the relationship between the two variables was quite sub-
stantial.

Table 6.2 Relationship Between Crop Revenue and Use of Inputs.

Crop Revenue (K)	Use of Inputs		
	Used Inputs	Did Not Use Inputs	All
0 - 10	12	23	35
11 - 75	38	21	59
76 and over	59	5	64
Total	109	49	158

Chi-square = 36.2, 2 degrees of Freedom, significant at the 1%
          level.

  Cramer's V = 0.49

11. Innovation Adoption and Access to Credit.

The observation that the adoption of innovations is closely
associated with higher crop revenue raises the question :- What
factors are associated with innovation adoption? This question
entailed the examination of the characteristics associated with
innovation adopters (or for that case, non-adopters) and an
attempt to determine whether those factors found to be associated
with innovation adoption were causally linked with it.

The survey data indicated that farm credit was the main
source of finance for farm inputs. This observation led to the
hypothesis that:

> "The adoption of the innovations offered is likely to be
> closely associated with a household's access to seasonal
> credit ....1b.

It was observed that among those who reported to have used
farm inputs (69% of the sample) only 16% reported to have obtained
them purely on a cash basis, while the rest either got them solely
on credit or supplemented what they got on credit with cash
purchases.

Table 6.3 Source of Finance For Farm Inputs.

	(%)
Cash only	16
Credit only	29
Cash and Credit	55
	100
n=	109

Thus it appears that most of the people who used inputs (or innovated) did so mainly through the help of credit. Table 5.4f, presented earlier indicated that there was a very high "repeat" tendency among the credit takers. This implies that even those people whose incomes had risen substantially over the years because of using innovations, still relied on credit for inputs. For example, in 1980/81, when provision of input credit to individuals was abolished in LLDP, it was observed that most of the old credit clientele opted to join the farmers' clubs which became the only vehicle through which input credit could be obtained. Such evidence tends to suggest that in the relationship between innovation adoption (use of inputs) and access to credit, the direction of causality ran from "credit" to "adoption". However, there is need for caution here. While the above observations may be true, they do not provide conclusive evidence that access to credit induces innovation adoption. It is possible that the observed phenomenon reflects some other aspect , such as inefficiences in the input delivery system for cash purchases. It is common knowledge in Malawi that farm inputs are not always available in time or in adequate quantities at the ADMARC local markets, for sale to the smallholding community. It is a usual phenomenon to see farmers queueing at the ADMARC local depots a week of so after the rains have fallen and planting is well under way, trying to procure inputs. Such problems are largely attributed to transport bottlenecks, storage problems at the depots etc. On the other hand, ADMARC seems to place priority on input orders from say, LLDP, the Government Loans Board, or any other development agencies, and ofcourse, the estate sector. In such circumstances it is a rational reaction on the part of the farmers who wished to secure supplies of inputs to apply for input credit than risking to buy them on cash. In such a case, purchasing inputs on credit is just a matter of convenience occasioned by the inefficiences in the marketing system. For the marginal farmer, with very little cash to spare, the fact that inputs are usually made available at the ADMARC local markets only during the planting season, when other needs for cash are pressing, such as school fees for children (schools open in October), clothing, food needs, medicines etc, mean

that he may not be able to purchase them. Although the access
of such a farmer to credit may be restricted (on account of his
economic status) it could be that if the inputs were available
say at the time of crop marketing, within a reasonable distance
from his home, he could have opted to buy some so as to improve
his next crop yield. In this case, although his inability to
take up innovations may seem to be associated with his lack of
access to input credit, another constraint would appear to be
the lack of an efficient input delivery system.

This study does not intend to pursue the issue of input
marketing in Malawi, suffice it to say that there is room for
improvement in the way ADMARC discharges its responsibility
as the sole distributor of farm inputs to the smallholder
sector. And, there is need to re-examine the need for ADMARC's
monopoly in this field, especially given the transportation and
storage problems which it appears to encounter, as well as the
fact that input subsidization, which would appear to justify
ADMARC's monopoly in input distribution, does not appear to
feature much in ADMARC's input pricing policies. However, the
issue of input marketing has been brought up to highlight the
danger involved in assuming causality from an association
relationship. For example, the observation, in Malawi, that
innovation adoption is closely associated with input distribution
on credit, has led to the familiar accusations that government
elitist policies have encouraged the channelling of resources
through input distribution (eg. allocating of input credit) to
a few "progressive" elements in the rural community.[1] This
study points out that, although such a conclusion may have some
elements of truth, it has the effect of preventing a more
rational analysis of the situation. The above example
has clearly indicated that innovation adoption can be constrained
by inefficiencies in the input delivery system, which are not
necessarily a result of deliberate Government policy, and yet
there have been very few analyses of ADMARC's input distribution
practises, despite the prominent position ADMARC occupies with
regard to smallholder innovation adoption through its role as
sole distributor of inputs to the smallholder sector.

111.   The Relationship Between Input Credit and Cultivated Area.

The fact that access to credit and crop revenue were closely associated implies that the way input credit was distributed in the area had an influence on the pattern of innovation adoption and therefore income distribution, and it therefore warrants a closer investigation.   The guiding principle in credit allocation in LLDP is the ability to repay criterion.   The record of credit repayment in the project area shows that a very high recovery rate (over 90%) was consistently achieved from phase 11 (1972/73) onwards.[2]   Such a record suggests   very stringent selection criteria which ensured that those who   were offered credit would be able to repay their loans.   Our purpose at this stage is to investigate the criteria upon which credit distribution lay.   Here we shall investigate the hypothesis that:

A household's access to seasonal credit is closely associated with its cultivated area...............1c.

Evidence provided by the survey data indicates that credit rec ipients (58% of the sample) cultivated, on average, 45% more land than those that did not receive credit.   In addition when the relationship between cultivated area and input credit was investigated it gave a chi-squared value of 16.8 (significant at 1%, with 2 degrees of freedom).

Table 6.4:   The relationship Between Total Input Credit Taken and Total Cultivated Area.

	Input Credit		
Total cultivated Area	Less than K11	K11 and over	All
Less than 0.4 ha	10	3	13
0.4 - 1.2 ha	53	56	109
1.3	8	28	36
	71	87	158

Chi-square = 16.8, significant at 1%, with 2 degrees of freedom.

These findings tend to support the above hypothesis.
However, it must be pointed out that the nature of the data
does not allow us to probe more deeply into the problem, say
to establish the direction of causality. As such, our
conclusions on this aspect will tend to be speculative. It
seems that the relationship between access to credit and total
area cultivated tends to operate in both directions.

Cultivated Area		Access to Credit
	$------\rightarrow$	
	$\leftarrow------$	
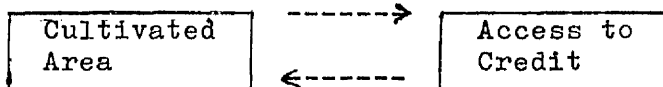
In the first place, due to the risk minimisation aspect of
credit allocation, large cultivated area is regarded as a
collateral for credit.. That is, because of the priority accorded
to subsistence production by all the smallholder households in
the area, availability of a marketable output, from which credit
repayment is supposed to be made, depends on a large cultivated
area. That is, those households with large cultivated hectarages
are regarded as being in a better position to produce marketable
output, which will enable them to repay credit than those with
small cultivated areas on which subsistence crops are likely to
predominate.. Consequently, credit tends to be readily available
to those with larger cultivated areas.. On the other hand, a house-
hold's access to credit, for whatever reason (such as being a
farmer's club official, etc.,) increases the households
prospects of achieving a larger output (through higher product-
ivities - land and labour, as a result of using inputs). At
the same time it increases the household's need for cash, to
pay off its loan commitment. This acts as an incentive to
produce a marketable surplus, inducing it to cultivate a large
hectarage to ensure that this new requirement is met. And
where such a household may not have enough land to meet the new
demand, it usually resorts to borrowing some from its neighbours
and/or relatives who for one reason or the other (usually lack
of labour), are unable to fully utilize all the land available
to them. However, this can only happen if the household can
mobilize the necessary labour required for the degree of
operation necessitated by the available credit. Thus although

the relationship tends to operate in both ways, labour avail-
ability, in the final analysis becomes the operative constraint,
as access to credit alone does not ensure adoption of innovations.

The proposition regarding the relationship between credit
and cultivated area is well supported by the evidence provided
by Kinsey (1974), who observed an inverse relationship between
credit worthiness and loan size. He found out that those
households which had displayed a 100% credit repayment record
had significantly large holding sizes than those who had dis-
played a 50% or so repayment record[3] At the same time, he
observed that those households who received project credit
cultivated 33% more land, and had 84% more agricultural income
than those who did not get credit[4] Such results indicate that
during the early phases of LLDP, when a liberal credit policy
was pursued, households who cultivated small hectarages were
found to have difficulties with credit repayment. This led
to a more stringent credit rating policy which resulted in
the exclusion of the majority of small farmers from getting
credit. The fact that credit was only provided for producing
marketable crops (especially those marketed predominantly
through ADMARC) meant that unless a household had enough
resources over and above those required to meet family sub-
sistence needs, it was unlikely to commit itself to grow cash
crops. The author was informed by some Project Officers
involved with credit that at least up to the 1979/80 season,
availability of funds did not constitute a constraint to their
lending operations (as this period was characterised by the
existence of unused up funds on the credit fund at the end of
each year). The problem was finding those people who were
prepared, and who qualified to take up the "credit packages"
offered. In other words, credit availability was not restricted
by an act of credit rationing as such, necessitated by lack of
funds, but by the household's ability to produce a marketable
surplus, as expressed by the household's total cultivated area.
This implies that for us to have a clear understanding of the
constraints to innovation adoption and therefore higher farm
incomes in LLDP, we need to look more closely at the factors
associated with the cultivated area.

IV. The Relationship Between Cultivated Area and Crop Revenue.

Before embarking on a detailed examination of the factors associated with cultivated areas, we shall try to establish the nature of the relationship between cultivated area and crop revenue, in order to explore the hypothesis that:

Total farm income (crop revenue) is closely associated with the size of the cultivated area ....2a.

This is the hypothesis upon which the credit rating policy seems to be based. The hypothesis was tested in a number of stages. The first stage involved the establishment of the suspected relationship. This was tested by a chi-squared analysis which gave a chi-squared value of 11.7, significant at 5%, with 4 degrees of freedom, thereby supporting the existence of the relationship.

Table 6.5   Cultivated Area and Crop Revenue.

Hectarage	Income Group			
	Less than K30	K31 - 75	K76 and over	Total
0 - 0.8 hectares	32	11	7	50
0.9 - 1.6 hectares	10	11	14	35
1.7 and over	5	4	6	15
Total	47	26	27	100

Chi-squared = 11.7, significant at 5% 4 degrees of freedom.

Next we investigated if variations in farm size had an impact on crop revenue. The crop revenue data was transformed by multiplying the group means by the associated group frequencies, to make it amenable to an analysis of variance exercise. The survey population was then broken down into a number of categories based on farm size and the mean crop revenues of the various farm sizes were compared. This exercise revealed that variations in farm size had a substantial impact on crop revenue (F value = 11.8 significant at 1%). In addition a correlation exercise gave an R^2 value of 0.28, which implied

that 28% of the linear variation in crop revenue could be
explained by variations in cultivated area alone. Such
findings tend to lend support to the hypothesis postulated
above. More important, they indicate that the innovations
being advocated in LLDP are more of an extensive nature than
of an intensive one, ie, they are of a type which depends on
availability of adequate land for their adoption.[5] This
aspect has a very important bearing on how widely they can
spread, in a situation where cultivation technology is basically
of the hoe culture, and where land pressure is rising fast.

B. Farm Size and Its Determinants.

The observation that cultivated area was positively
correlated with crop revenue implies that those who cultivated
large hectarages were more likely to get higher farm revenue
than those who did not. However, in the previous chapter, it
was argued that there were hardly any institutional barriers
to a household's access to farm land. It therefore appears
that under such circumstances, we would expect a more even
distribution of farm income among the households. And yet, the
data reported in chapter V indicated that quite a substantial
proportion of the households got very little income from sale
of crops, and in the previous section of this chapter, it was
indicated that this was largely because such people cultivated
small hectarages which did not allow them much in the way of
marketable surpluses. Such findings imply that the observed
interhousehold differences in farm income go beyond the aspect
of land availability as such. This section therefore explores a
number of interrelated factors which are thought to have a
bearing on a household's total cultivated area.

1. Labour Availability.

As pointed out in chapter 1, one of the major aims of this
study is to re-examine the assumption that basically subsistence
oriented households do possess surplus family labour resources
which can be usefully tapped, through the development effort,
into expanding smallholder cash production. This will be done
by examining the relationship between the labour demands of the
various innovations introduced by the developement effort in

LLDF and the labour supply situations of the various household typologies. Since the survey results have revealed that use of hired labour for agricultural work does take place on a substantial scale in the area, we shall try to assess the role of both family and hired labour in cash crop production.

(a) Family Labour.

The data analysis in chapter V revealed that the main cash croppers in the area were the tobacco growers and the improved maize growers (typologies 111 and 1V), while the other two categories (1 and 11) were predominantly subsistence farmers. In addition , it was revealed that the cash croppers tended to have larger family labour forces than the subsistence croppers. This tended to indicate that available family labour was some — how related with innovation adoption. A chi-squared analysis between innovation adoption (as represented by those households who grew either tobacco and/or improved maize - as adopters and those who did not grow them - as non-adopters) and available family labour, supported this view, ie Chi-squared = 26.96, with 4 degree of freedom and significant at 1% level.

Table 6.6 Family Labour Availability and Crop Enterprise.

Family Labour Available (AEs)	Crop Enterprise			
	Tobacco Growers	Improved Maize Growers	Others	All
Less than 2	4	10	23	37
2 - 3	28	44	29	101
3 and over	12	3	5	20

Chi-squared = 26.96, 4df., significant at 1%.

However, it has been argued above, that innovation adoption in the area was closely associated with cultivated area, mostly because input credit, the main source of finance for farm inputs, was distributed on the "ability to repay" criterion. Since innovation adoption is here seen to be linked with available family labour, it would be expected that available family labour and total cultivated area, are closely related, and therefore that among the non-labour hirers those taking innovations would have large family labour forces and larger cultivated areas, while those households not adopting innovations would have smaller family labour forces and smaller cultivated areas. These relationships are explored in the table below.

Table 6.7 Availability of Family Labour and Adoption of Innovations (among non-labour hirers)

Family Labour Available (AEs)	Adoption of Innovations		
	Adopted	Did not Adopt	All
Less than 2	13	22	35
More than 2	54	19	73
Total	67	41	108

Chi-squared = 14.6, significant at the 1% level, with 1 df.

These results clearly indicate that large family labour forces are closely associated with innovation adoption. This is particularly so with respect to the tobacco enterprise, whose labour requirement is quite high more or less throughout the whole year, and therefore not particularly suited to casual labour which seems to be the most readily available form of hired labour in the area.

The fact that about 70% of the households surveyed reported having used only family labour on their farms during the 1980/81 season, indicates that family labour is the most predominant form of farm labour in the area. It was therefore expected that this form of labour would have a very substantial impact on farm size. The following hypothesis was therefore put forward:-

> For a peasant household solely dependent on family labour for agricultural work, the size of its cultivated area is closely associated with the number of family workers available to it (measured in adult equivalents).........2b.

This hypothesis was tested for those households who hired no labour. A simple correlation exercise revealed that there was in fact a weak relationship between family labour available to the household and total cultivated area (R = 0.24, significant at the 1% level). This was rather surprising, and therefore warranted further investigation. To this effect we investigated the relationship between cultivated area and household consumption needs (as represented by family size - in standard consumption units). This was found to be quite substantial (R = 0.46, significant at 1%). This tended to indicate that the allocation of the labour resource by these households to the farm enterprise is to some extent determined by their family consumption needs.[6] This finding is consistent with recent studies in similar cases.[7] However, it appears that the lower correlation coefficient obtained in this study, for the relationship between family size and farm size (ie R = 0.46, as compared to R = 0.4 - 0.65 reported by Hunt, for Mbere), coupled with the lack of a strong relationship between farm size and family labour, reported earlier, point to one underlying factor which is important in our situation. That is, it reflects the fact that in LLDP, non-labour hiring households (who **are** predominantly the poorer and non-innovating households) tend to have a lower dependence on the farm as a source of cash income, as was indicated in the previous chapter. This is reflected in the relatively large proportion of non-farm income in their total incomes positions. For example, as much as 32% of the total income of the 26 female headed households (only 4 of whom hired labour), came

from non-farm income sources. This tends to imply that such
households tend to allocate their labour resources to the farm
enterprise up to the point where they can satisfy their sub-
sistence requirements, allocating any surplus labour to other
activities outside the farm.   More important, the results
highlight the important fact that most of these non-labour
hiring households are actually the suppliers of hired labour
to the relatively better off farm households and estates, on
a casual or seasonal basis. This therefore tends to weaken
the association between both family size and family labour
and cultivated area.

(b). Hired Labour.

As already pointed out, 32% of our sample reported hiring
labour for agricultural work. Of these, 82% grew either tobacco
and/or improved maize varieties. This implies that labour
hiring was very closely associated with innovation adoption. To
explore this relationship, a number of hypotheses were examined,
the first of which was:-

> A household's cultivated area is likely to be related to
> the household's ability to hire labour (measured by total
> expenditure on hired labour) ....2c.

This hypothesis implies that those households who hired
labour were likely to cultivate larger hectarages and therefore
·more likely to adopt innovations than those who did not.

The survey data indicated that, on average, those households
who hired labour cultivated 85% more land than their non-labour
hiring counterparts (ie they cultivated an average of 2.4 ha.
against 1.3 ha. for the other). A chi-squared test indicated
that there was a highly significant relationship between labour
hiring and cultivated area (Chi-squared = 15.1, with 3 degrees
of freedom and significant at the 1% level). In addition, for
this group of households, total cultivated area and expenditure
on hired labour were substantially correlated (R = 0.40
significant at 1%).

Table 6.8 Relationship Between Labour Hiring and Cultivated Area.

Cultivated Area (ha)	Number of Households		
	Hired Labour	Did not hire labour	Total
up to 1 hecatare	15	54	69
1.1 - 1.8	15	38	53
1.9 - 2.6	9	10	19
2.7 and over	12	5	17
Total	51	107	158
Average ha/ household	2.4	1.3	1.7

Chi-squared = 15.1, significant at 1%, with 3 df.

On the other hand, when the relationship between farm size (cultivated area) and family size was examined, for the labour hiring households, it was found to be a bit weaker than that between cultivated area and expenditure on hired labour, (ie R = 0.32, significant at 1%), while that between cultivated area and available family labour was even much weaker (R = 0.24, significant at 5%). These results can be interpreted to mean that farm production by these households is not necessarily geared to family subsistence needs, thus suggesting a higher degree of commercialization, ie production for the market, and/or that these households placed greater reliance on hired labour for their agricultural production, allowing their family workers either a higher degree of leisure, or to engage in other off-farm activities which yielded higher returns to labour.

The first proposition was supported by the finding that among the labour hirers, crop revenue and expenditure on hired labour were closely related, ie chi-squared = 11.62, significant at 1%, with 1 degree of freedom.

Table 6.9 Crop Revenue and Expenditure on Hired Labour.

Expenditure on hired labour	Crop Revenue		
	Less than K20	K20 and	Total
Less than K150	16	7	23
K150 and above	6	22	28
	22	29	51

Chi-squared = 11.62, 1 DF, significant at 1%.

The finding that cultivated area, among the labour hirers was closely related to expenditure on hired labour, tended to support the view that these households placed a greater reliance on hired labour (ie, chi-squared = 15.1, significant at 1 %, with 3 degrees of freedom). The finding that the survey data provided evidence to the effect that the relationship between farm size and expenditure on hired labour (among the labour hirers) was statistically significant, while evidence regarding the statistical significance of the relationship between farm size and family labour force was not forthcoming, implies that hired labour had a larger impact on cultivated area than family labour. Unfortunately, because our data were largely of the nominal and ordinal nature, it was not possible to estimate the functional relationship between cultivated area and hired and/or family labour. Therefore our conclusions regarding cultivated area and these two factors will tend to be speculative.

As indicated earlier, the households who reported hiring labour, almost exclusively hired this labour during the peak season (ie. a 3-4 week period in December/January) when the crops must be rescued from the weeds, and when the weather is favourable for the job, ie dry and sunny so that the uprooted weeds can dry. . This means that during this peak period, a household which is able to raise say K10 for hired labour, which at the assumed wage rate of K0.10 per hour, is equivalent to 100 man hours, which equals the entire labour demands of 1 hectare of local maize for the whole month of January, will

be in a better position to clear its farm of weeds in time
than say a household which gets an extra family worker during
the peak season, who can only provide 5.6% of his estimated
potential annual labour input during the 3 - 4 weeks period
(which works out at about 50-80 man hours, assuming a 5½ hour
working day, for 5 days a week). Because December and January
crop labour demands are a critical factor in this type of
farming, the available labour during this period will be the
operative constraint to the household's farming activities
(as represented by the size of the cultivated area). This is
why a household's ability to hire labour during this peak
season is closely associated with the household's total
cultivated area.

11. Factors Associated With Labour Hiring And Cash Purchasing of Inputs.

The important finding that a household's ability to hire
labour has an important bearing on the size of its cultivated
area, and consequently, on its ability to adopt innovations
leads us to our next hypotheses, and that is:

> The household's ability to hire labour is closely related
> to the household's access to non-farm income earning
> opportunities (measured by total non-farm receipts)......2d.

and that:

> Cash purchases of inputs are likely to be associated with
> a household's level of non-farm income ....3.

The main argument here is that in the initial stages of
development, farm incomes are generally too low to provide funds
for hiring or purchasing inputs. As such, it would be expected
that a household's ability to hire farm labour or purchase in-
puts would be likely to be associated with its non-farm
receipts. This implies that only those households which have
access to non-farm income earning opportunities are likely to
buy farm inputs and hire the labour required to enable them
to take up the innovations which are inherently linked with
large hectarages. To test these hypotheses, we looked at the
relationship between non-farm income receipts and total

total expenditures on hired labour and cash purchases of inputs.

For the purposes of this study, "farm income" is defined
as that income which accrues to the household from sale of farm
products produced on its own farm, while "non-farm income"
is defined as that income which comes from sources other than
sale of farm products. Two main sources of non-farm income
were identified, ie., employment (both temporary and permanent
employment) and business (including self employment- such as
carpentry and bricklaying).

The survey data indicated that the various categories of
households differed in their sources of non-farm income. For
example, the labour hirers, who were predominantly tobacco and
improved maize growers, reported an average of K316 in household
receipts for the 1980/81 season. Of this 17% came from non-
farm sources, mostly business and self employment. The non-labour
hirers, on the other hand, reported an average household income of
K104, of which about 30% came from outside the farm, mostly wage
labour and off-season activities.

The evidence from the survey suggests that this differential
in sources of non-farm income for the various households had an
important bearing on their farming activities. For example,
only 4 of the 26 female headed households in the sample reported
having hired labour during the 1980/81 season and a similar
number reported having purchased inputs on cash. Beer was the
main source of funds for these outlays. The data indicates that
for these households, non-farm income contributed about a third
of total household income. It appears that such income played
a very important role in supplementing their farm produce in the
way of providing subsistence requirements such as food (during
the hunger gap). Such income did not serve as a means for hiring
labour or purchasing farm inputs, and played no substantial part
in raising farm incomes. Thus although it would be expected that
these labour deficient households would tend to make up for this
deficiency by hiring labour, their desparate economic position
dictated that they in fact hire out labour to meet their sub-
sistence requirements.

For the labour hiring households, the situation was compli-
cated by the fact that they were divided into two main groups
which displayed different characteristics with respect to non-farm
income. On the one hand, were the improved maize growers who
were associated with a high degree of non-farm income earnings,
which made up about 31% of average total household receipts.
On the other hand were the tobacco growers who reported very
little, in terms of non-farm receipts.

For the improved maize growers, about $\frac{1}{3}$ of whom reported
hiring labour,the available data indicated that there was a close
relationship between income from business sources and revenue
from sale of crops (Chi-squared = 12.2, significant at the 1% level,
with 2 degrees of freedom). This suggested that non-farm income
could have been an important source of funds for buying inputs and
or hiring labour. However, there was no substantive evidence to
to indicate that non-farm income was closely related to either
expenditure on hired labour or expenditure an cash purchases of
inputs. Instead the data indicated that there was a close
relationship between crop revenue and expenditure on inputs
(Chi-squared = 6.8, significant at 1% with 1 degree of freedom).
These results indicate that although non-farm income may have
given these households extra funds which could have been used for
purchasing inputs and hiring labour, it was mostly income from
sale of farm produce which was crucial in the households' farming
activities.

For the tobacco growers the available data suggests that
non-farm receipts hardly had anything to do with their farming
activities. The data presented in the previous chapter indicated
that the main source of inputs for these households was credit
from LLDP, and that about half of those who hired labour paid for
it in kind.. It therefore appears that the privileged access to
credit, of these households , enabled them to get high revenue
from their farming enterprises, as well as enabling them to have
food surpluses which proved useful in hiring labour.

Overall, it appears that non-farm income played a positive role in the farming operations of the improved maize growers by providing them with extra funds for hiring labour and purchasing inputs. On the other hand, its role was different among the poorer households for whom it acted as a supplementary resource for meeting subsistent requirements which could not be fully met through their farming operations. Because most of such income originated from sale of labour to other households, in a way it had a negative impact on the farming operations of the poor households. Thus it appears that whether non-farm income helps a household to innovate or not, will depend on the overall economic position of the household.

2. Summary of Data Analysis.

On the whole it appears that labour availability and access to input credit were the two main factors that influenced the households decision to adopt innovations, and therefore affected its total income from sale of crops. However, the results suggest that the two factors were not independent of each other. Labour availability (especially the hired component) appears to have had a much greater impact on a household's ability to adopt innovations because of its effect on cultivated area, which in turn affected access to input credit. This interrelationship seems to create a vicious circle. That is labour deficiency leads to a small cultivated area, which in turn leads to lack of access to input credit, this leads to low farm income levels, that lead to a labour deficiency (due to inability to hire labour to supplement family labour).

Fig. 6.2 The Vicious Circle of Rural Poverty.
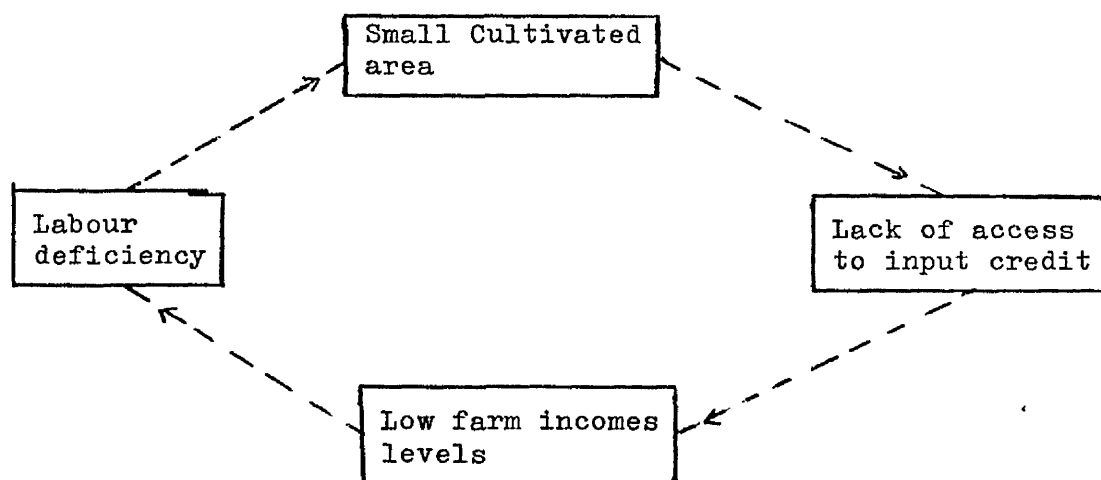
Attempts by these smaller and poorer households, to break
out of the vicious circle by way of adopting the innovations up
to a size commensurate   with their labour and financial
resources, are hampered by LLDP's practice of prescribing
minimum packages for the innovations it offers. However, we
shall consider this aspect in more detail, in a subsequent
section of this chapter. In the section that follows an
attempt will be made to illustrate, using the survey data,
the impact of the interrelationship between labour availability
and access to iput credit on total farm incomes, with the help
of fig 6.3 , _   inorder to put the above discussion in
its perspective.

A.   Observed Pattern of Income Distribution According to
Labour and Credit Availability.

The connection between both labour and credit availability
on the one hand, and cultivated area (and therefore crop income)
on the other, is well demonstrated in the tree diagram below.

For the purposes of constructing this tree diagram, the
households were classified on two criteria (after the survey)
viz:-

(a) Labour Availability

(b) Access to credit.

In the first stage, two categories of households were
formed. The first group consisted of those households who were
considered to have "inadequate" labour available to them, ie.
those with less than 2 adult workers and hired no labour. This
category tended to include most of the female headed households
(due to the absence of the adult male) living either alone or
with juvenile children, and some of those male headed households
where either the male had no female spouse, or if the female
spouse was present, both spouses were well advanced in age, and
their labour valuation, on adult equivalent scale, was less than
unity (individually). The other group consisted of those
households who can be considered to have had "adequate" labour
available to them, ie those that had at least two adult family
workers and/or hired labour. This group included mostly the
tobacco and improved maize growers. Next, the households were
subdivided into those who took credit and those who did not.

The tree diagram below shows how cultivated area and reported cash receipts from sale of crops (in terms of group averages) were distributed among the groups.

Fig. 6.3 Effect of Labour and Credit Availability on Crop Revenue.

(158)

All households

X1 = 1.66 ha.
Y. = K126

"Adequate" (107)
Labour

la,

X1 = 2.1 ha
Y = K147

(51)

1b,

X1 = 0.8 ha.
Y = K65

"Inadequate"
Labour.

(75)

X1 = 2.2 ha
Y = K202

(2a,
Taking credit

(32)

X1 = 1.7 ha
Y = 124

2b,
No credit

(17)

X1 = 1.4 ha
Y = K141

2c,
Taking credit

(34)

X1 = o.6 ha
Y = K27

2d,
No credit
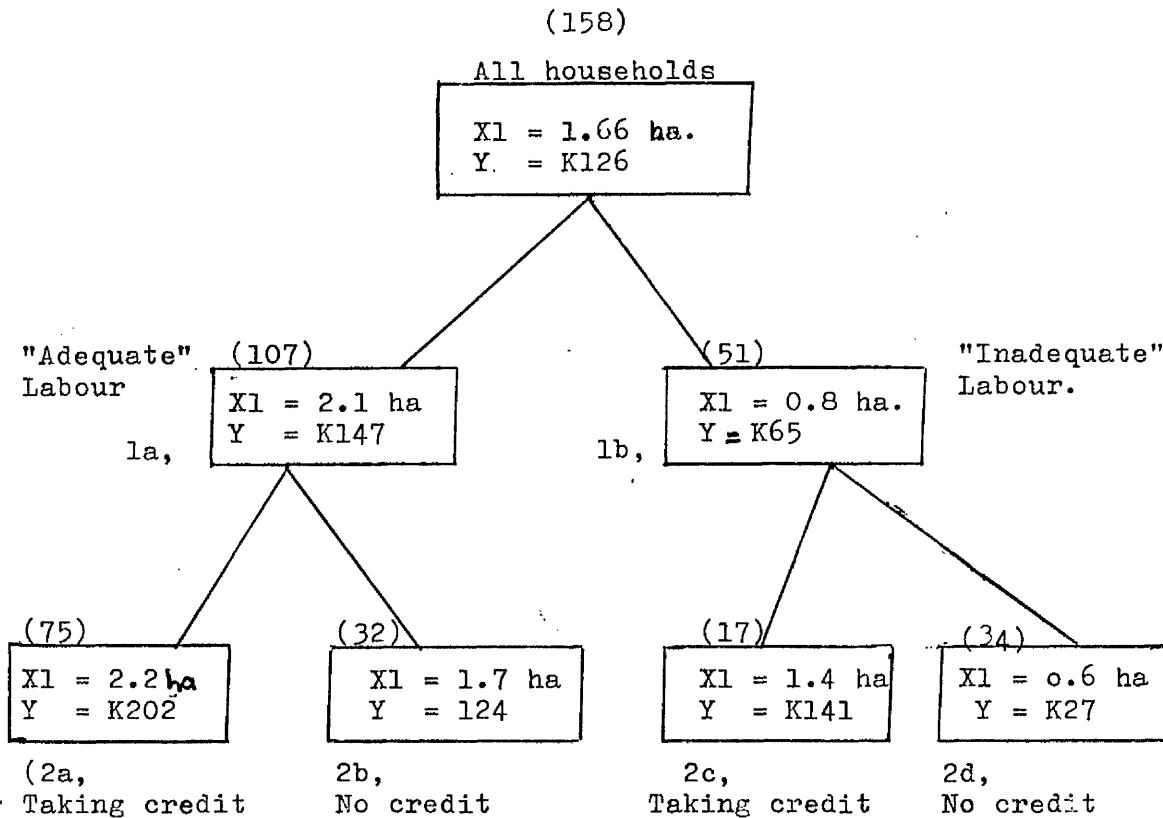
X1 = average hectarage per household.

Y = Average Crop Revenue per household.

From the diagram it can be seen that those households, which had no labour constraints, cultivated on average 163% more land, and consequently had 126% more cash receipts from sale of crops, than those with "inadequate labour". In addition 70% of those "adequate" labour had access to input credit, as compared to only 33% of the other group. In fact , those with "adequate labour constituted 82% of the credit recipients. Such findings support our earlier hypothesis regarding the interrelationships between labour

availability, cultivated area and access to credit. More
important, the data in the diagram indicates that, labour
availability had a greater impact on total household revenue
from sale of crops than access to credit. That is, amongst
those households who had adequate labour, the differential
in crop revenue between those who took credit and those who
did not was 63%. On the other hand, the differential in crop
revenue among those with "inadequate" labour taking credit
and those not taking credit was 42%.

This tends to imply that where labour is available, farm
income is not significantly constrained by lack of credit.
However, where there seems to be a labour shortage, lack of
credit tends to depress farm incomes even more. This seems to
be indicative of the fact that labour availability is very
closely associated with uptake of the innovations offered in
the project area. This implies that once a household had
decided upon adoption (after having examined its labour avail-
ability situation) both credit and extension advice are
almost automatically forthcoming from the project to ensure
the success of the innovations. On the other hand, those
households who do not adopt innovations, largely because they
lack the labour with which to adequately tend the new and
improved crops, are unlikely to get any credit or extension
advice, since these are usually provided as "packages". In
the absence of any innovation packages especially suited to
the households with smaller labour forces, it seems that such
households will always be left out of the innovation stream.
They will continue to follow their old farming methods, and
therefore will be faced with declining yields as the soil
gets exhausted,thereby reducing their ability to provide their
own basic subsistence needs. This will force such households
to rely increasingly on non-farm sources of income, or hiring
out labour.

The main argument for including the credit programme in
LLDP, as already pointed out was the understanding that lack of
modern inputs, caused by low income levels among the smallholders
was mainly responsible for the low level of farm productivity in
the area, and that the provision of credit would enable a large

proportion of the smallholding community to gain access to modern inputs and thereby raise their output levels.[8] To ensure effective use of credit, the "supervised" approach was adopted. At the same time, the main services of credit provision, input supply, extension and marketing were linked, presumably to ensure optimal results, thus the "package approach" was used.

So far our analysis has indicated that there were several problems associated with the strategy. First, the linking of the major services created some problems, largely because each of the components had a separate objective. For example, in the interests of extension, it was desirable that as large a number of farmers as possible should be put in touch with the new inputs. Provision of credit, to as large a group as possible was therefore necessary. On the other hand, from the point of view of the credit programme, it was essential that if the programme was to be self-financing, lending had to be done very prudently to minimise defaults. The early experience of LLDP indicates that there were conflicts between the various objectives. For example, the "extension" objective was vigorously pursued during ▆▆▆▆ the first phase of the project (1968/9 - 1971/72). But as mentioned in chapter iv, this led to high default rates, thus threatening the viability of the credit fund.[9] More importantly, there were no attempts to assess the situation among the smallholders themselves to find out exactly what their requirements were. In an attempt to boost groundnuts production , for example, although improved seeds, and complementary inputs (eg. sulphur dust) and knowledge of improved husbandry methods were made available to the farmers, the output of the crop continued to decline. This was found to be largely due to the heavy labour demands and poor returns to labour associated with the crop.[10] It was not until later that the labour bottleneck (especially during harvesting and processing for the market) was appreciated, and technical innovations to ease it (eg. introduction of the groundnut lifter),were brought in. However, without any significant improvements in the producer prices, such innovations only meant higher production costs and lower net returns. Consequently,

such innovations were not taken up by the farmers, in fact, they can be seen today, standing idle at the unit centres, while the labour bottleneck persists.[11]

Thus, the high default rates associated with the liberal credit policy that was pursued in the early years, in an attempt to spread innovations, coupled with the failure , on the part of the project to cater for the needs of the farmers that would arise from adoption of the "packages" offered (in terms of extra labour demands associated with the required timeliness of operations, storage problems, food supplies, etc.), led to the emergence of a credit scheme that tended to favour only those who were relatively better off (in terms of resources, etc.), and therefore able to qualify for credit, as well as willing to take on the extra risks associated with credit.

The consequence was that, it was mostly the smaller and poorer farmers who were left out of the innovation bandwagon. First, because they had smaller labour forces (and unable to supplement such with hired labour due to their low income positions), which resulted in their relatively smaller cultivated hectarages, which rendered them credit risks. Secondly, the "packages" available, which in most cases had a minimum size attached to them, may have been too large for their resources. Thirdly, as the credit was geared to the production of certain marketable crops, it meant that there was an implicit assumption that the credit recipient had to produce for the market. Thus taking credit amounted to a commitment to produce an amount of output equivalent to the value of the loan (at the minimum), and with the pre-occupation of the poorer households on meeting subsistence requirements, such a prospect might have proved too much of a gamble.

B.   Effect of Crop Enterprise on Household Incomes.

Another factor which was found to be very closely related
with the household's level of crop cash receipts was the type
of crop enterprise undertaken by the household. Because of
the limited size of our sample, it was not feasible to
incorporate the effect of the crop enterprise into the tree
diagram developed earlier on, so as to complete the picture
of how the three factors of labour availability, access to
credit and type of crop enterprise undertaken, might be
operating in the area, in influencing the pattern of income
distribution. Instead, a simple linear programming model will
be used here, to try to complete the picture.

I.   The Linear Programming Model.

The main objective of the LP model is to try to demonstrate
how, in the situation under review, the labour constraint does
significantly contribute to the determination of the cropping
pattern a household is able to adopt. Using the information
given in the above typologies of households regarding family
sizes, family labour forces, etc, an attempt will be made to
present a model of the optimal farm pattern for each typology
under various assumptions.

The main assumption is that each household intends to
maximize revenue from sale of crops, subject to:
(a) A food self-sufficiency constraint.
(b) A labour constraint.
(c) A land constraint.
(d) A financial constraint.

(a)   Food Self-Sufficiency Constraint.

Observations in the survey area indicate that it was the
wish of all farmers to be self-sufficient in food, an aspect
which is consistent with the risk aversion strategy of small-
holder farmers. The absence of any complete specialisation
in cash crop production among the small scale producers in
LLDP, supports this assumption. It was therefore assumed that
each household would produce enough local maize (the main staple

in the area) to meet its food requirements. It has been
estimated that on average the consumption requirements, in
this area of an adult person (measured in consumption
units) are 230 kilograms of maize grain.[12] Thus, the
annual total food requirements for each household typology
was obtained by multiplying 230 kg. by the average number of
persons (in s.c.u.) per household in the group. The yield of
local maize was assumed to be 1100 kg/ha.[13] It was assumed
that all households would cultivate local maize for subsistence
purposes and that any surplus would be sold.

(b) Labour Contraint.

(i) Family Labour - The availability of family labour was
calculated on a monthly basis, since the labour requirements
data for the various crops was also provided on a monthly
basis. It was assumed that each working member of a household
would be capable of providing, on average, up to 125 man hours
per month, for agricultural work. This represents about 5
hours a day for 25 days a month. Hence the total monthly
family labour supply for each household typology was obtained
by multiplying 125 by the average number of workers per house-
hold typology. Such a figure should be regarded purely as an
estimate, as it is recognised that the actual amount of hours
which the family workers will be willing to work in the family
farm will depend on a number of factors such as the relationship
between the number of workers in the family and the requirements
of the household to be fulfilled: from farm output etc.

(ii) Hired Labour. - As indicated earlier, about one third
of the households surveyed reported to have used hired labour
(mostly casual labour) for agricultural work during the 1980/81
season. Observations indicated that most of this labour hiring
was done during the peak seasons, ie. November to January (the
crop establishment period) and to some extent - May and April
(the harvest period). It was further observed that the wage
paid for this labour varied with the type of operation being
undertaken and the time of the year the labour was hired -
reaching a peak in December and January. In the absence of

reliable data on the exact nature of the trend in the rural
wage rate, the legal minimum rural wage rate (that paid on
established agricultural estates) was used as the basic rate
at which households could either buy or sell labour. During
the 1980/81 season, this was at K0.50 per working day, (about
$0.60). Assuming a 5 hour working day, this works out at
K0.10 per man hour. However, the actual wage rate paid during
the critical period, (December - January) is likely to be much
higher than this, as our LP model suggests. Thus the above
figure should be viewed as being purely for illustrative
purposes.

(c) Land Constraint.

Our survey indicated that the average holding size in the
region was 1.67 hectares. The 1977/78 survey undertaken by
LLDP reported a mean holding size of 1.94 hectares per house-
hold.[14] Allowing for the growing population in the area, our
survey figure was fairly reasonable. The survey also indicated
that well over half of the households had holdings which were
below the mean size. Since the main thesis of the study was
that land did not constitute the main contraint to farming
activities in the area for the majority of households, all
households were assumed to have equal access to farm land (up
to a maximum of 8.0 hectares). In this way, the effects of
land availability, on farm incomes, was isolated, so that the
effects of the other factors, ie. labour availability, financial
availability and crop enterprise, could be appropriately
investigated.

It was also assumed that households would try to maximize
revenue from sale of crops, ie maize, tobacco and groundnuts.
Due to the absence of the exact knowledge regarding the labour
requirements for hybrid maize, it was assumed, in the model, to
have the same labour requirements as local maize. However, this
assumption is not accurate, since hybrid maize is associated
with extra labour requirements for such processes as fertilizer
application, pest control, etc., which make it relatively more
labour intensive than local maize.[15] This leads to the need
for caution in interpreting the results.

(d) Financial Constraint.

Finally, it was assumed that each household would be willing to purchase inputs (either on credit or cash) and hire labour to supplement its family labour force, whenever necessary. However, both activities were subject to financial availability. Thus two financial constraints were built into the model, one for each activity.

(i) Input Purchase Constraint - Input purchases (either on credit or cash) have to be met from household income. Although credit purchases have to be met from future household income, current household income provides a very powerful indication of how much income the household expects to earn during the coming year, as such, it plays a vital role in deciding how much credit the household can afford to take. For this purpose, it was assumed, in our model, that households would be willing to spend up to 50% of their current income to buy those inputs which were considered vital for raising household farm income. The proportion of 50% was arbitrarily chosen, and it is felt that it could be a bit on the high side. However, in the absence of any household income - expenditure data in the area to establish the investment habits of the people, the 50% figure was used to illustrate the extent to which lack of financial capital (for inputs) could be a constraining factor to farming activities of the various households. (16)

(ii) Hired Labour Constraint - Similarly, any expenses incurred on hired labour have to be met from household income. For this constraint, it was assumed, also arbitrarily that a household could spend up to 25% of its current household income on hiring labour to supplement its family labour force especially during the peak labour season.

The financial requirements, of each crop (per hectare) (for both inputs and hired labour) were derived from the gross margins data presented in table 6.8. 6.10

II. Crop Enterprises Considered.

(a) Gross Margins.

In this analysis, only the main crops grown in LLDP are considered, namely, tobacco, maize and groundnuts. This is because these are the only crops for which project support (in the form of input credit and extension services) is available.

However, the maize enterprise has been divided into three, ie:

(1) Local maize for subsistence (X1)

(2) Local maize for sale   (X2)

(3) Improved maize varieties (X3).

Table 6.10 gives the gross margins associated with the above crop enterprises.

Table 6.10 Gross Margins in LLDP, 1977/78 (at ADMARC Farm-gate Prices).

| | Crop Enterprise. | | | |
	Local maize	Hybrid maize	Groundnuts	Tobacco
Area (ha)	1.00	1.00	1.00	1.00
Yield (kg/ha)	1100	3779	315	500
Farm gate Price (K/kg)	0.0496	0.0496	0.33	0.4408
Gross Revenue	54.56	187.44	103.95	220.40
Variable costs				
Wood (K)	–	–	–	4.00
seeds (K)	1.24	17.30	22.22	–
Fertilizers (K)	–	48.19	–	69.19
Hired labour (K)	–	14.83	–	15.00
Transport (K)	--	4.94	–	1.75
Total	1.24	85.26	22.22	98.94
Gross margins (K/ha)	53.32	102.18	81.73	130.46
Gross margins/man hour (K) (a)	0.07	(N/A)	0.05	0.04

Sorce: LLDP Project Completion Report, Phase III Annex V(e) Tables (i) and (ii).

(a) - Calculated using the labour data in Table 6.5.

(b) Labour Demands.

Table 6.11 gives the labour demands associated with each crop. The table indicates that the tobacco enterprise is associated with the heaviest labour demands, followed by groundnuts and then maize. In addition it shows that the labour demands associated with the local maize enterprise are fairly spread out throughout the year, save for the pronounced peak in December/January. The labour demand schedule for groundnuts has two peaks, a sharp one in December and a flat one between May and July, while tobacco exhibits a fairly heavy labour demand schedule throughout the year, with its trough in August/September and its peak in March/ April.

Table 6.11 Crop Monthly Labour Demands - (Man hours/hectare) in LLDP, 1977/78.

Month	Local Maize	Groundnuts	Tobacco
October	49	12	261
November	86	40	116
December	99	272	252
January	111	79	370
February	49	175	252
March	10	25	455
April	59	40	514
May	96	237	321
June	72	274	348
July	54	222	195
August	49	104	35
September	32	10	96
	766	1490	3215

Source: LLDP, Farm Management Survey quoted in LLDP, Sample Survey of Agriculture, 1977/78, Table 15, Page 2.

N.B. Original figures were in man hours per acre (1 ha = 2.47 acres).

The Linear Programming Results.

The LP exercise was set up for three different situations; viz:

   (a) Where all households faced a labour constraint (being restricted to using family labour only (but no financial constraint was specified)

   (b) Where all households were subject to a financial constraint, for purchase of inputs, and the labour constraint could be overcome by hiring as much labour as the household required.

   (c) Where both the labour constraint and financial constraint were in operation, ie, the purchase of inputs and hire of labour were subjected to specified financial constraints.

The formats of the LP model, for each category of households and under each of the tree basic conditions are summarised in the appendix to this chapter. This section only concerns itself with the discussion of the results.

(a) With Labour Constraint But No Financial Constraint.

Two main results are apparent under this condition, and these are:

   1) All household typologies were seen to cultivate farms below the maximum hectarage stipulated in the model (8 ha.).

   2) Both tobacco and local maize (for sale) did not enter the optimal solution.

The above results indicate that after meeting subsistence requirements, all the household typologies were left with some labour to grow a cash crop of one type or the other. However, which cash crop could be undertaken, very much depended on its labour demands, especially during the critical months. The results indicate that December and January were the two months when crop labour demands imposed the heaviest burden on the family labour force. January labour was particularly critical (as indicated by the high shadow price of labour, of K0.88 per hour, as against the minimum rural wage rate of K0.10 assumed

in the model). A sensitivity test of the model indicated that
in all cases, the groundnut enterprise (with a gross margin
of K81.73 per hectare) would remain in the solution as long
as its gross margins/hectare remained within the range K72.45
to K279.69. At the same time, hybrid maize would also remain
in the solution as long as its gross margins per hectare did
not go outside the K44.92 - K114.84 range (its gross margins
per hectare were K101.80). This indicates that the solution
was not particularly sensitive to the price of maize (in the
downward direction) and price of groundnuts (in the upward
direction). On the other hand, in all cases, the solution
appeared to be highly sensitive to labour availability. For
example, for the female headed households, with an assumed
current supply of 170 man hours of family labour available
per month, the solution would change if the labour available
in December dropped below 152 man hours, or went above 179
man hours. For January, the critical range was 106 - 190
man hours. This clearly shows that the amount of family
labour available during these two months was very critical
to the cropping pattern undertaken by the household. The LP
exercise indicated that under the above mentioned assumptions,
the tobacco enterprise would not enter the solution as the
available family labour, in all categories, was not sufficient
to cope with it. Thus the only feasible enterprises were
maize and groundnuts. The observation that it was optimal
to grow some groundnuts for sale, rather than specializing
in hybrid maize production for cash (which after all, offered
higher returns to labour), tends to support the point made
earlier concerning the difference between labour intensity
per se, and the spread of the labour demands. In addition,
it was hinted above that the labour demands of hybrid maize,
were underestimated, thus making groundnuts the most feasible
cash crop for the majority of households. In fact, 82% of the
households grew the crop (although not all of them grew it
especially for cash purposes) as a means of optimising the
use of the family labour force.

Table 6.12 Proportion of Households Growing Groundnuts in
    LLDP, 1980/81.

Category	1	11	111	1V	All
Proportion (%)	77	74	86	84	82

As already pointed out, December and January are the months when households in the area face the heaviest demands for labour.   This is particularly worrisome for this happens to be the wet season in the country.   As Chambers (1982) observed, for tropical countries in general, this season is likely to be a time when poor households, face severe food shortages, high exposure to infections (eg. Malaria and abdominal diseases) and malnutrition.[17]   All these have the effect of reducing the family labour supply.   Thus in effect, the position of most of the poor households in terms of family labour supply is likely to be worse than the one depicted in the model.

Table 6.13 Crop Enterprises in The Feasible Solution When
Labour Input is Constrained to Family Labour Only And
Financial Constrain is Assumed Away.

	Household Typology			
	1	11	111	1V
TMG (K)	86.42	124.24	169.06	133.24
Optimal Activities (ha) (Local maize for subsistence) X1	0.69	0.87	1.35	0.99
(Local maize for cash) X2	–	–	–	–
(Hybrid maize) X3	0.78	1.12	1.51	1.21
(Groundnuts) X4	0.09	0.12	0.18	0.14
(Tobacco) X5	–	–	–	–
Total	1.56	2.11	3.04	2.34
Constraints (Shadow Prices bracketed)	Jan(0.05) Dec (0.88)	Jan(0.05) Dec(0.88)	Jan(0.05) Dec(0.88)	Jan(0.05) Dec(0.88)

(b) Without Labour Constraint, But With Input Purchasing
Constrained.

In the second stage of the analysis, the labour constraint
was removed by allowing the households to hire as much labour
as they required (with the availability of the means to finance
it, ignored for the time).

The LP results indicated that all households would, in the
absence of the labour contraint, find it optimal to increase
their farm revenues by expanding their tobacco hectarages until
they hit the land constraint, given that they had adequate
finances to meet the financial requirements of the tobacco
enterprise. However, due to the operation of the financial
constraint, the results indicated that the financially deficient
households would tend to limit the hectarages of the outlay
intensive enterprises (tobacco and hybrid maize) in favour of
the local maize enterprise.

The results indicate that the poorer households categories
1 and 11, would find it optimal to devote all their land and
labour resources to the local maize enterprise, and a bit to
groundnuts, as their financial resources could not allow
them to meet the financial requirements associated with either
the hybrid maize or tobacco enterprises. On the other hand,
for those households with relatively more financial resources
(categories 111 and 1V), they would find it profitable to grow
tobacco, in addition to the local maize and groundnut enterprises.

It is interesting to note that within the conditions
specified in the model, the hybrid maize enterprise does not
enter the optimal solution at all. This tends to indicate
that at the given cost-price relationships, the hybrid maize
enterprise is less profitable than its local counterpart. As
Table 6.10 indicates, local maize offered a higher return per
Kwacha than the hybrid maize enterprise. In addition, it
appears that the higher yield obtainable from hybrid maize
was not high enough (at the given farm-gate prices) to compansate
for the higher costs associated with it. For example, the
incremental revenue from a hectare of hybrid maize (over a
hectare of local maize) was K132.88, while as the incremental

costs required to realize this incremental revenue were
K84.02 (see table 6.10). Thus given adequate land and labour
resources, it is optimal for a household to undertake the
local maize enterprise rather than the hybrid one. This
indicates that the cost-price relationship (of the hybrid
maize enterprise) is counter to the projects desire to expand
hybrid maize production. If the hybrid maize enterprise is to
be taken up by many farmers, then it must be seen to be more
profitable than local maize. This suggests that revising
the price policy for maize, to achieve a cost-price relation-
ship whereby investment in the hybrid maize enterprise (in
terms to amount of revenue earned per Kwacha spent) is more
profitable than in the local maize enterprise. This is
because, although the returns to labour from the hybrid maize
enterprise may be higher than those from the local maize
enterprise (in the region 1.28 :1, if for the sake of argument
we assume that hybrid maize requires 25% more labour per hectare
per year, than the local maize, because hybrid maize is far more
intensive in its financial requirements than local maize), it is
the relationship between the returns to finances, of the two
enterprises, which will be the main deciding factor regarding
which enterprise will be undertaken, especially among those
households where the financial constraint is the most binding
constraint.

The LP results also indicated that for those households
with relatively more financial resources for purchasing inputs
(whether in the form of cash resources or access to seasonal
credit), the tobacco enterprise featured in their optimal
solution, in addition to local maize and groundnuts. This
suggests that, if it was not for the quota controls, its
production would have been much higher than is the case at the
moment.

Table 6.14 Crop Enterprise In Feasible Solution When A Financial
Contraint (for Input Purchasing) is Introduced, But Labour
Constraint Removed.

	Household category			
	1	11	111	1V
TMG (K)	329.96	327.87	378.55	383.98
Optimal Activities (ha)				
(Local maize - for subsistence) X1	0.69	0.87	1.35	0.99
(Local maize - cash) X2	6.92	6.70	4.47	5.05
(Hybrid maize) X3	-	-	-	-
(Groundnuts) X4	0.39	0.43	1.28	1.13
(Tobacco) X5	-	-	0.90	0.83
Total	8.00	8.00	8.00	8.00
Constraints				
(Shadow prices bracketed)	Fin A (1.51)	Fin A (1.51)	Fin A (42.8)	Fin A (42.8)
	Land (40.33)	Land (40.33)	Land (0.60)	Land (0.60)

(C)   With Both Labour and Financial Constraints Operating.

In the final stage in addition to the financial constraint
associated with purchasing inputs, households' hiring of labour
was subjected to a financial constraint. That is, households
could only spend up to 25% of the current incomes on hiring
labour for agricultural work.

Table 6.15   Crop Enterprise in Solution When Both Input
Purchases And Labour Hiring are Constrained.

	Household Category			
	1	11	111	1V
TMG (K)	58.72	79.49	148.49	124.36
Optimal Activities (ha)				
(Local maize subsistence) X1	0.69	0.87	1.35	0.99
(Local maize - cash) X2	0.58	0.92	0.40	0.19
(Hybrid maize) X3	0.20	0.20	1.11	1.02
(Groundnuts) X4	0.09	0.12	0.18	0.14
(Tobacco) X5	-	-	-	-
Total	1.56	2.11	3.04	2.34

Constraints

(shadow prices in
brackets)

Dec	Dec	Dec	Dec
(0.14)	(0.14)	(0.14)	(0.14)
Jan	Jan	Jan	Jan
(0.35)	(0.34)	(0.35)	(0.35)
Food	Food	Food	Food
(0.05)	(0.05)	(0.05)	(0.05)
Fin A	Fin A	Fin A	Fin A
(0.70)	(0.70)	(0.70)	(0.70)

The results indicate that the total hectarage cultivated
by each of the average households in each typology was the same
(when the financial constraint regarding hiring labour was
introduced) as for the situation where only family labour was
used. This tends to support the view that households hired
labour not for ground preparation work, but largely for weeding
purposes. However, it was interesting to note that there was
a change in the composition of the optimal crop enterprises.
Where as under situation (a), the hybrid maize enterprise
featured in the optimal solutions of all the household typologies

with the introduction of the financial constraint (regarding
input purchases), the hybrid maize hectarages of categories
1 and 11 households dropped by 74% and 82%, respectively, in
favour of the local maize enterprise, which required minimal
financial resources. In contrast, categories 111 and 1V
households, because of their greater financial resources,
experienced drops of 26% and 16% in their hybrid maize hectarages
respectively, as a result of introducing the financial constraint
with regard to input purchases. This indicates that the avail-
ability of finances, to'purchase inputs (cash or credit) has a
larger impact on the poorer households' ability to take up
innovations, than on the relatively better off ones.

At the same time, the introduction of the financial
constraint, to restrict labour availability, had the effect
of restricting the cultivated area drastically, to levels
manageable by the family labour forces as indicated above.
More important, the results indicated that the removal of the
labour constraint, would have an income equalisation effect,
as all households would tend to take up a land extensive
system of cultivation (subject to land availability). As
Table 6.14 indicates, as long as there is no labour constraint,
the financial constraint has a minimal effect on the total farm
revenue of the various households. However, where the labour
constraint is in operation, as in table 6.13 the financial
constraint tends to reinforce the income differences, by
limiting the access of the labour deficient households to
higher yielding crop varieties, as was observed in the tree
diagram analysis presented above.

3. Models of Innovation Adoption in LLDP.

It has already been pointed out that most of the innovations introduced in the LLDP (eg. monocropping, new and improved seed varieties, etc,), were of the labour intensive type in relation to traditional crops. At the same time, the need for self-sufficiency in foodstuffs, coupled with the fact that the distribution of inputs through the credit systems was based on the "ability to repay" criterion meant that only those who were able to cultivate large hectarages took up the innovations. These aspects had a significant impact on the way productivity and income improvements were distributed among the households as the reported cash income data indicated. In this section, an attempt will be made to illustrate how under the circumstances underlined above, the pattern of income distribution observed in the area may have emerged, by making use of a number of models.

A. Labour Availability and Innovation Adoption in LLDP

I. The Semi-Subsistence Farm Family Model.

Here, a modified version of the model developed by Fisk (1975), will be used to show how a basically subsistence production family unit, is likely to respond to the introduction of a relatively labour intensive innovation.[18]

The model is built on the underlying assumption that land availability is not the binding constraint to the family farm income. Nevertheless, it is recognised that although households may not be institutionally constrained in their access to farm land, in the short run, the supply of farmland available to a household may be regarded as fixed. As such, this model adopts the Fisk approach of regarding the land factor as constant, so as to enable the effects of the other factors to be appropriately investigated. In the original Fisk model, technology and capital are also assumed to be constant, the only variable input being family labour. However, in the model presented here, both capital and technology vary (between households) as a result of the development effort being undertaken, which provides extension and credit services and encourages the use of modern inputs. Inorder to keep the analysis at a manageable level, the production of only one crop (maize) is considered.

Graph . 6.1   Income Function of   Semi-
              Subsistence Households Growing

              A Traditional Crop.

OUTPUT
(m o n e y
  te r m s)

LABOUR INPUTS
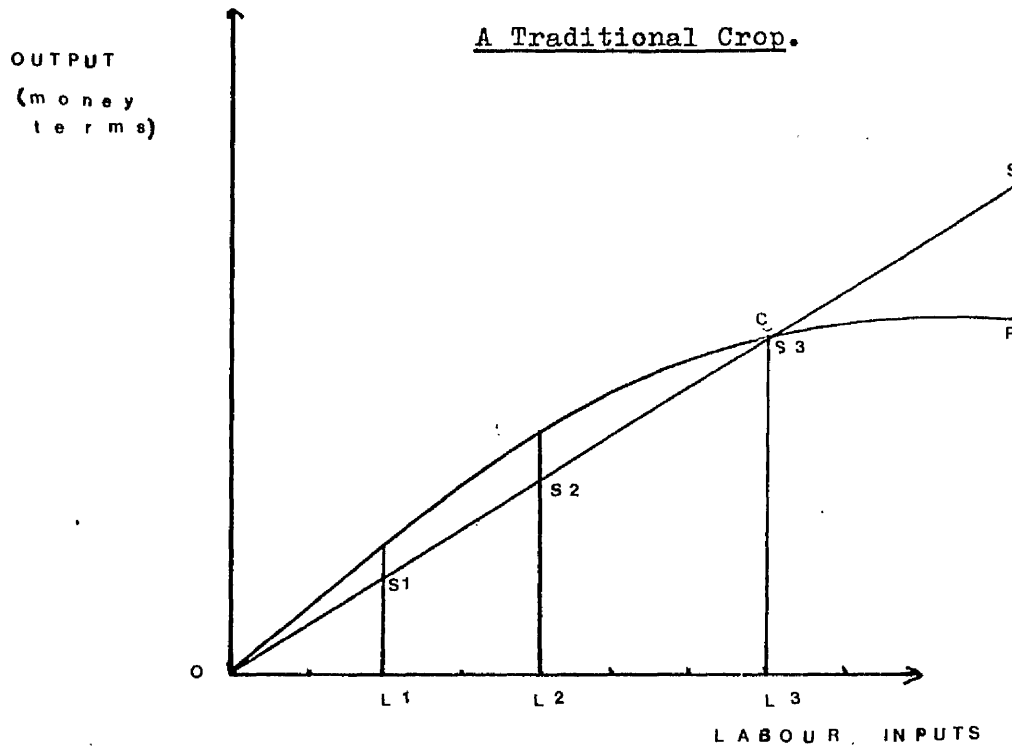
Graph 6.2   Income Function of   Semi-
             Subsistence Households Growing a

             Modern Crop.

OUTPUT

(m o n e y

  terms)

LABOUR   INPUTS
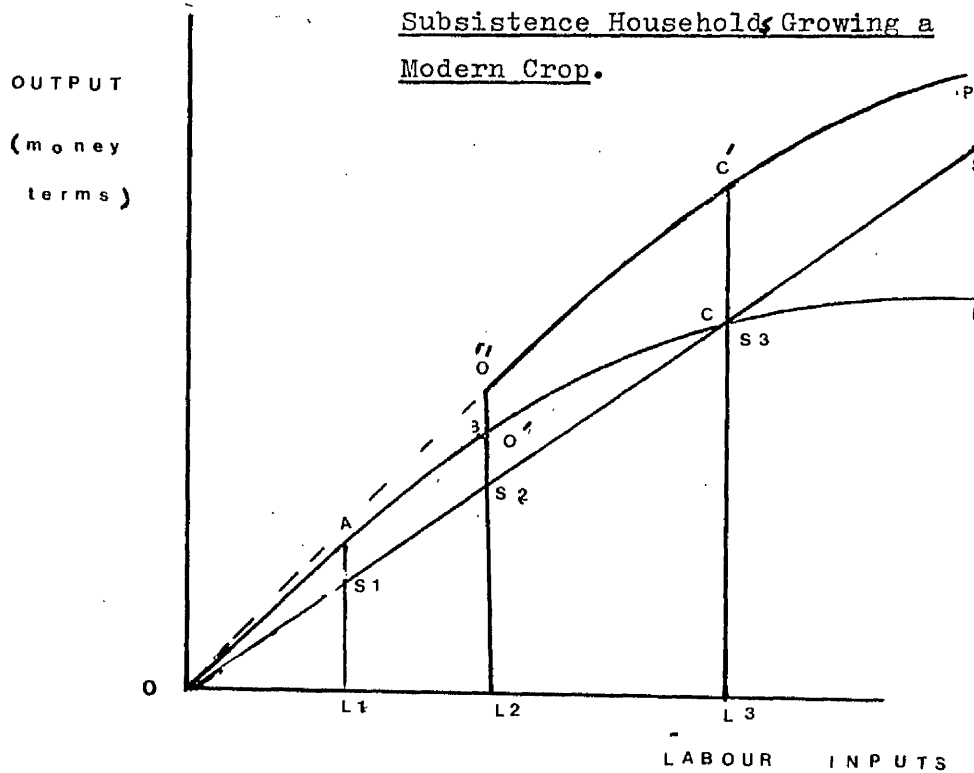
Graph 6.1, depicts the situation represented by the Fisk model, ie., where land, capital and technology are constant - which is akin to households growing a traditional crop, such as local maize under traditional methods of production. OP represents the production possibility curve of households of varying sizes (subject to diminishing returns due to the fixity of the land). OS represents the subsistence requirements of the various households. Under these circumstances, OP represents the income function. And as the graph indicates, under such circumstances, there is very little scope of a marketable surplus for most of the households.

In graph 6.2, we introduce a modern innovation, such as hybrid maize, which is meant to boost production of a marketable surplus. It is here argued that the additional labour demands associated with the new innovation (such as early and timely planting, weeding, fertilizer application and soil conservation measures, etc.) and the stipulation of a minimum size of the package, require a critical minimum labour effort say L2 below which such an innovation may not be taken. Under such circumstances, the income function of the households would be kinked, ie, OO'O"P'. The graph indicates that the production possibility curve, with the new innovation becomes O"P'. It can be seen that a household with a relatively small labour force, say L1, which is below the critical labour required for the minimum prescribed package (ie 10 kg of hybrid maize seed - for 1 hectare), can only be able to grow the traditional crop giving it a very small marketable output. This tends to agree with the observation that only those households with either large family labour forces, or able to hire labour, grow the crop, while those with labour deficiencies, such as the female headed households (typology 1) do not grow it. It is very important to realize that this aspect of a critical minimum level of labour input required for the adoption of hybrid maize arises from both the stipulation of the minimum package that is a household should be able to raise the labour required to cope with 1 hectare of hybrid maize, and the fact that

hybrid maize is relatively more labour intensive than local maize.

On the one hand, a household with a labour force larger
than the critical level required for the adoption of hybrid maize,
taking up the hybrid maize enterprise will enable it to obtain
a larger marketable output, say CC', which would have been non-
existent with the local variety, as at this point the household
output C, just equalled its consumption requirements S3.   The
above model demonstrates that labour availability could be quite
a crucial constraint to innovation adoption in the circumstances
under review. For example, for those households with a labour
deficiency (to deal with the minimum stipulated package),
provision of inputs, say through credit, unless accompanied by
some form of labour saving technology, is unlikely to induce
them to innovate. While as, for those households with adequate
labour supplies (family and / or hired), access to inputs is more
likely to enhance their adoption of such innovations.   This
explains why our survey results have indicated that it is mostly
those households with either large family labour forces or with the
ability to hire labour, that have adopted the innovations
introduced in LLDP. And, as already pointed out, the advocating
of such an adoption pattern has the likely consequence of
inducing a rural labour market, whereby a group of "progressive"
farmers rely   increasingly on hiring the labour of the poor
households. The mechanics of such a situation will be demonstrated
in the next model.

II. The Emergence of a Rural Labour Market.

The position of the smaller and poorer households is made
worse by the nature of the output market. As already pointed
out, although ADMARC offers one price to all smallholder
producers for all varieties of maize, throughout the year, there
are in fact differences in the prices which different farmers
get for their output due to the disjointed nature of
the market.   As indicated earlier, ADMARC purchases only
a small proportion of the smallholder maize crop (about 40%),[19]
the rest being sold through private channels, where the price ranges
from say K3-50 per 200lb. bag (91 kg), soon after harvest
(May/June), to about K13-50 or more, during the rainy season
(December/January). The ADMARC markets do not open until mid-July

(except for tobacco, which open in April). The majority of the
poor households sell most of their maize soon after harvest to
raise badly needed cash for such things as clothing, etc., as this
happens to be the slack season and there are hardly any non-farm
income earning opportunities available. Ironically,these households
end up buying maize during the hungry gap when its price is very
high, usually using funds earned from wage labour, which seems to
be in high demand at this time of the year.

For the larger farmers, the ADMARC price acts as their
minimum guaranteed price. In the first place, they can afford
to wait until the free market price has risen before selling
their produce, at about 3 - 4 times the price obtained by the
smaller farmers. Alternatively , they are able to sell in bulk
(individually or in groups) direct to ADMARC depots or to
industrial users, at higher prices. For example, in the 1980/81
season the author came across a number of farmers in Unit 4,
who had co-operated to deliver a lorryload of maize
to Chibuku Products (a local brewery) at K10 per bag, while
the smallholder price paid at the ADMARC local markets was K6.50
per bag. Although they paid K1 per bag for transport, they still
ended up with a much better deal. Thus the larger farmers tend
to obtain a higher return to labour, from their maize enterprises
than the smaller farms. It could be argued that this differential
in returns enables the larger farmers to take on the higher
yielding varieties, for it compensates them for the higher costs
associated with input purchases. More importantly, the returns
to labour from the maize enterprise, to the larger households,
are much higher than those to the smaller and poorer farmers
(due to the higher output prices and higher yields per hectare
associated with the improved maize varieties). This implies
that the gross margins from the maize enterprise presented in
table 6.10, which were based on ADMARC farm-gate prices, over-
state the gross margins obtained by many of the poor farmers,
while they understate those obtained by the larger and better-
off farmers. The implication of this aspect is that due to the

disjointed product market and the differences in technologies used by the various typologies fo farmers, they face differing marginal returns to labour from their maize enterprises, and they operate on different production functions. As long as this differential is large enough, a labour market is likely to emerge among the rural people. The model below, will be used to illustrate how this is likely to take place.

The model to be employed is that developed by Nakajima (1970) and modified by Kydd (1978).[20] In the model we shall look at how a "non-adopting household" and an "adopting household" will react to the presence of a labour market. In the discussion above, it was argued that the introduction of a relatively labour intensive innovation such as hybrid maize, is likely to trigger off a rural labour market, especially if the adopting households cannot fully meet the crop labour demands from their family labour forces, and at the same time, if there exists a group of people who for one reason or the other, cannot participate in the new innovation, and have very limited off-farm employment opportunities.[21]

(a) <u>The introduction of a rural labour market</u>

Let us assume that a rural household can either sell or purchase some quantity of labour if it so desires, at a wage rate determined by the market. If we further assume that the household has no asset income, the equation for the household's income function (following Nakajima, 1970), will be:

$$Y = Ys + Ym$$

$$Y = Ys + Px \, f(X, B) + W(L-X)$$

where Y = total household income.

Ys = subsistence income.

Ym = monetary income.

Px = farmgate price of product.

X = total labour input on farm.

L = total family labour utilized on the farm and outside the farm.

B = total land cultivated by the household.

W = wage rate

Graph 6.3 Reaction of a Semi-Subsistence Household
To a Labour Market in a Non- innovating
Situation

(a)

Family income

(b)

Marginal valuation and

Marginal productivity of labour

Labour Inputs

Labour Inputs
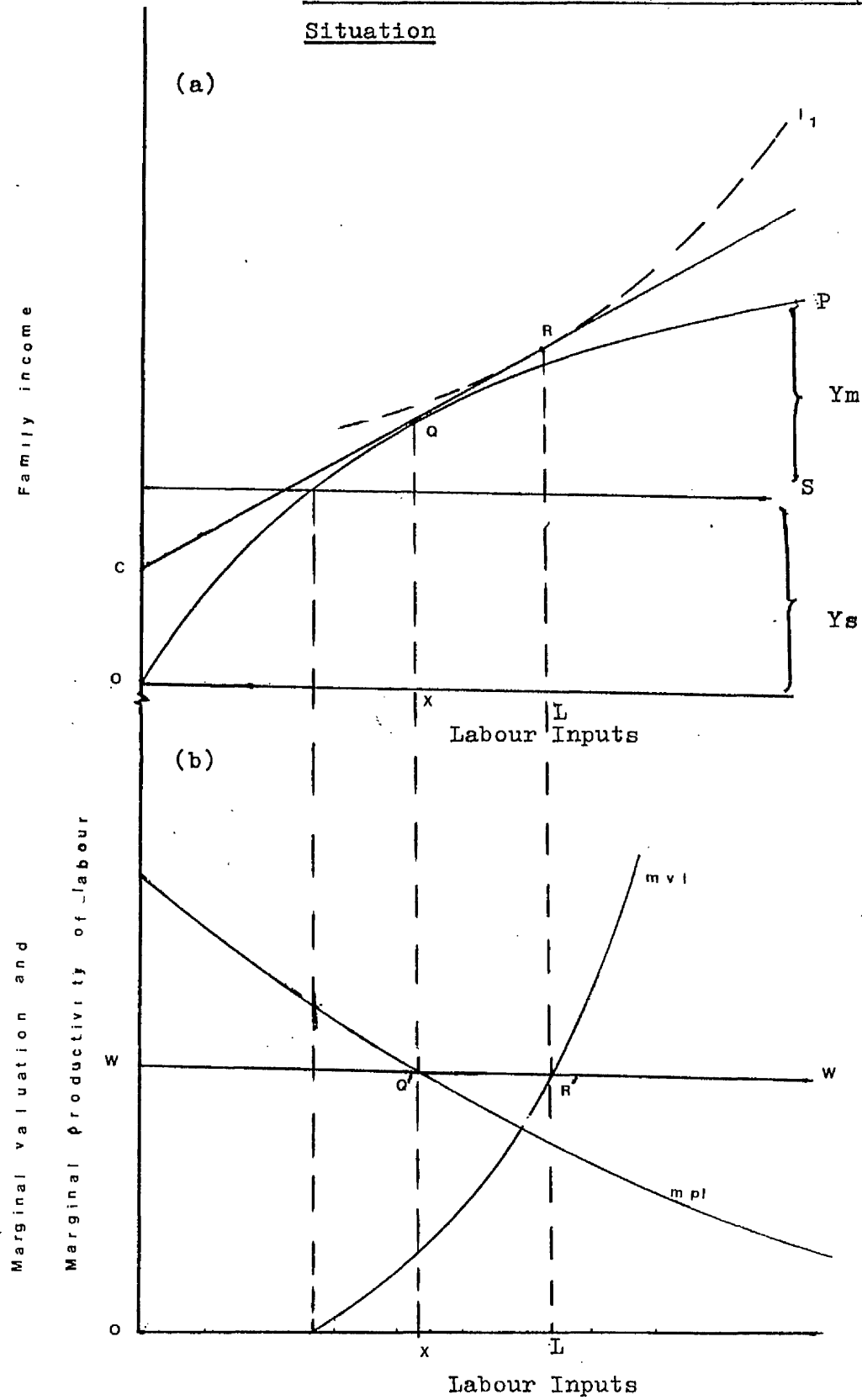
Graph 6.4 Reaction of a Semi-Subsistence Huosehold
To a Labour Intensive Innovation in the
Existence of a Labour Market.

(a)

Family income

C_1

R_1

O''

O'''

I_2

Q_1

P'

P

S

Quantity of Labour

(b)

Marginal valuation and marginal Productivity of labour

K_1

R_1'

Q_1'

W

L_1

O

L_1' L x_1'

Quantity of Labour
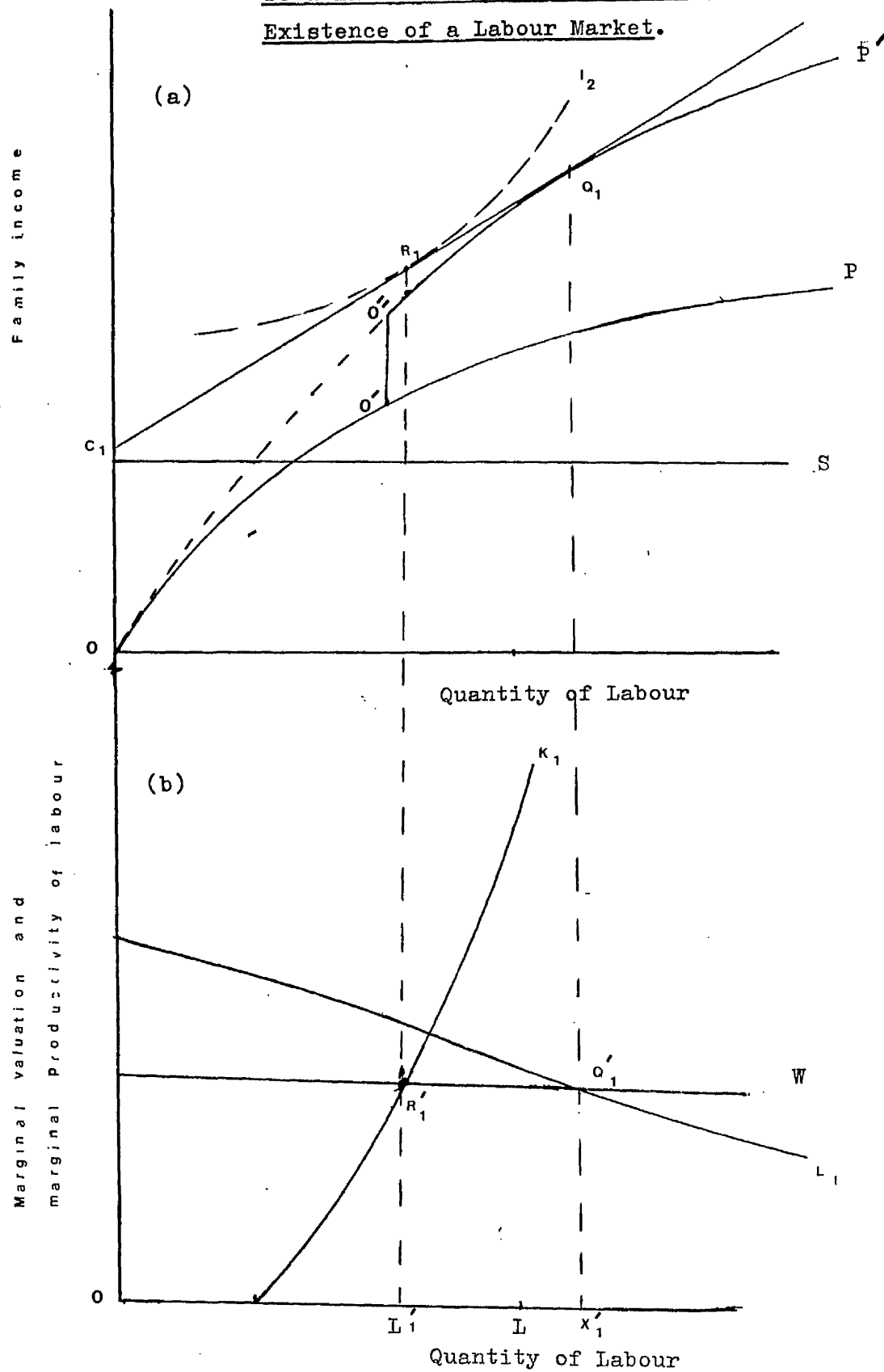
In the graph 6.3, OP represents the production possibility
curve of a household with a total labour force of L, producing
say local maize (non-innovating). The slope of the line CQR
represents the wage rate. Point Q, where the production
possibility curve touches the wageline, represents the most
preferred point of farm production for the household, while
point R, where the wage line touches the indifference curve,
represents the most preferred total family income position.
Points Q' and R', in the bottom part of the diagram, represent
the equilibrium points of total labour input on the farm and
total labour input on and outside the farm, respectively.
The diagram indicates that given the total workforce of L units
the most optimal strategy for the household would be to employ
X units on the farm and hire out L - X units, at the going wage
rate. In other words, at the existing level of technology, it
would pay the household to hire out any labour units over and
above the number of units at which the marginal revenue of
labour on the farm equals the going wage rate (or to hire in
labour up to that point if its own labour force is less than
the equilibrium quantity X).

Now if we introduce a labour intensive technology, as in the
case depicted in graph 6.4, the position changes. In the first
place, the most preferred point of farm production (at which
the wage line touches the new production possibility curve)
becomes Q1, with the corresponding labour input of X1. This
indicates the total labour input required to attain the preferred
farm production position is much larger than that in the previous
situation, meaning that since the household has a smaller labour
force than X1, to take advantage of the new innovation, it will
have to hire some labour at the going wage rate.

Another point illustrated by the graph is that even house-
holds with large workforces, if taking up the innovation, will
be inclined to hire in labour (because of their higher income
positions, made possible by the innovation) in preference for
leisure. If there is a large group of innovators, competition
for labour is likely to arise, and this may push up the wage
rate. It could be argued   that the advocation of a labour

intensive technology may well prove to be a useful tool for improving the incomes of the rural poor, if it leads to higher rural wages. However as it has already been pointed out, the poor households who usually hire their labour usually do so out of need rather than choice. This means they have a very low bargaining strength. Due to the differentiated product market, the poorer farmers get lower returns to labour than their better-off and innovating households. For these poor farmers, the decision to hire out labour depends on the comparison between the marginal revenue product of labour on their farms and in wage employment. For the innovators, the decision to hire labour rests on the differential between the marginal product of the hired labour on the farm and the wage rate. Because productivity is very low on the farms of the poor households, the basis of their wage demands is low. The position is further weakened by the fact that most of these households are badly in need of food at the time their labour is in demand, as such, they tend to be price takers rather than makers, thus making the situation exploitative.[23]

It should be added that, because of the labour intensity of the innovations, the innovating households will have two options, either to use labour saving technology or to hire labour. The decision as to which option will be followed will depend very much on the relative costs of the two options as well as the degree of substitutability between labour and labour saving techniques. But as already indicated, the type of innovations being considered in the case under review, appear to be those where labour saving technology (at least the available range) is less suitable. Hence the most likely option for the innovator is to hire labour. This decision is aided by the output pricing system, which makes investment in labour saving technology less profitable while at the same time keeping returns to labour in peasant agriculture (especially among the non-innovators) low, thereby keeping the rural wage rate low.

While the model does not pretend to state that the peasant
farmers do actually sit down and perform the elaborate
calculations implied in the model, it illustrates how, under
the assumptions specified and implied in the model, households
with different resource endowments are likely to react to changes
in their economic enviroment, brought about by the introduction
of a particular type of development strategy, given that the
peasant farmers are rational in their allocation of resources
in pursuing a given objective, or set of objectives, for
which ample evidence is cited in the literature.[24]

Evidence from the survey does tend to support the model, as
it indicated that those households not taking the innovations
(categories 1 and 11) tended to rely substantially on hiring
out labour to improve their household income positions, while a
at the same time, those households who took up the innovation
package in the area, tended to be associated with a greater
degree of labour hiring (in addition to their larger than
average family labour forces).

4. A Summary.

What the analysis of the survey data has shown so far is
that while both average yields and average household incomes
may have risen substantially in the project area, such a rise
may not have been uniform across the various household
typologies. The analysis has indicated, for example, that
categories 1 and 11 households (female headed households, and
those male headed households growing neither tobacco nor
improved maize), because of their relative lack of adequate
labour and their restricted access to input credit (which
appears to be a direct result of their labour deficiency),
may not have benefitted much from the current development
effort, which in essence, depends a great deal on the adoption
of inherently labour intensive innovations to raise farm
productivities and farm incomes. Such a finding is consistent
with results obtained in other parts of the world where the
encouragement of innovation adoption among the smallholder
farmers has been adopted as the main strategy for raising
rural incomes.[25] The study has indicated that the main
problem of the poor households (ie. those in
groups I and II), appears to be lack of cash to buy family
necessities, which stems from their low farm productivities.

Because they
cannot improve their farm income positions due to the reasons
given above, these households usually resort to non-farm sources
of income. However lack of cash earning opportunities in the
rural areas(coupled with limited opportunities in the relatively
small urban sector), forces most of these households to sell
their crops early in the season when prices are very low, thereby
opening up a "hunger gap" before the next harvest. The
consequence of this aspect is that such households out of sheer
necessity to survive, are forced to hire out their labour , badly
needed on their own farms, to richer households and/or to agri-
ultural estates, during the peak agricultural season. This tends
to further aggravate their household income positions. Castro
(1981), observed that those who engaged themselves in wage labour
in rural areas, tended to be the poor villagers. Because wage
levels are usually low (due to the low bargaining power of such

people), these households are unable to accumulate and are
chronically poor.[26] Although time series data were not
available to adequately prove this point, in our case, the
results of the cross-section data reported in chapters V and
VI, strongly support this point.

It therefore appears that unless some corrective measures
are undertaken, such a strategy of development is likely to
open up the income gap between the " poorer" and "richer"
households, with the former getting more and more dependent
on wage labour. In the concluding chapter we shall try to
explore the various ways through which such a situation can
be averted.

Notes - Chapter VI.

1. Ghai and Radwan (ILO, 1980) op cit.

2. See Kinsey (1974), op. cit.

3. **Ibid.**

4. Ibid.

5. It has recently been observed that, increasing commercial-
ization, among the Malawian small scale farmers, goes hand
in hand with increasing use of land. This tends to support
the view taken in this study that the innovations being
advocated by the extension services are mostly of the land
extensive type, and therefore labour intensive (given the
predominance of hoe culture cultivation in the area).
See Kliest, T.J. (1981) "Development Policy and the Small
Farmer in Malawi: The Growth of Inequality", in The Rural
Agricultural Sector, Institute of British Geographers -
Developing Areas Study Group (Papers Presented at the
NewCastle Upon Tyne Meeting - April, 1980) P 30.

6. This idea was advocated by Chayanov. See, Chayanov, A.V.
(1966), op cit.

7. See for example, Hunt, D. (1978), op.cit, also Hunt D.
(1979), op cit.

8. See Von Pischke, (IBRD, 1974), op cit.

9. Ibid.

10. See Kinsey (1974), op cit, and Anderson (1975), op cit.

11. A similar fate has befallen the mechanical maize shellers
which were introduced in LLDP to ease the labour bottle-
neck associated with processing the maize grain for the
market. These shellers were made available to the farmers
on hire basis, ie KO.30 per bag, but very few farmers
hardly make use of the facility. The smaller and poorer
farmers hardly have the amount of maize which would warrant
the hiring of a sheller, to be shelled at any one time. The
larger farmers, on the other hand, prefer to use the cheap
labour offered by the poorer households, for which they
usually pay in kind.

12. See Kinsey (1974), op cit, P 32.

13. LLDP, Project Completion Report, Phase III, Lilongwe,
Annex V (e).

14. See LLDP, Sample Survey of Smallholder Agriculture, 1977/78,
op cit.

15. For example, the World Bank (1981 b), notes that high yielding variety technology may increase seasonal demand for labour so that adoption is less attractive for those with limited labour or those operating in areas with less access to labour markets. The Bank cites evidence from a study in India by Harris (1972), which found that shortages of family labour explained non-adoption of high yielding varieties in India. See Harris, B. (1972) "Innovation Adoption in Agriculture - The High Yielding Varieties Program", in Modern Asian Studies, Vol. 6 No. 1 PP71-98, cited in World Bank (1981 b), op cit, PP 10-11.

16. The assumption that about half of gross farm receipts are used to purchase off-farm inputs, appears from time to time in the literature. See for example, Freebairn, J.W., et al (1982), "Distribution of Research Gains in Multistage Production Systems", in American Journal of Agricultural Economics, February 1982, P 39.

17. See Chambers, R. (1980), "Rural Poverty Unperceived: Problems and Remedies", in World Bank Staff Working Paper No. 400, Washington, P 21, see also Chambers, R. (1982), "Health, Agriculture and Rural Poverty: Why Seasons Matter", in Journal of Development Studies, Vol. 18, No 2. PP 217-38.

18. Fisk, E (1975), "The Response of Non-monetary Production Units to Contact with the Exchange Economy", in Reynolds , G (1975), Agriculture in Development Theory, New Haven and London, Yale University Press, 1975. PP 53-63.

19 See Kinsey, (1974), op cit, P 112. - This estimate applies to LLDP and probably other project areas. In other non-project areas.where the marketing structure is less well organised, the proportion of smallholder maize output sold to ADMARC is likely to be lower, although it is fair to point out that the situationhas been improving with improvements in the rural transport network.

20. Nakajima, C. (1979), "Subsistence and Commercial Family Farms: Some Theoretical Models of Subjective Equilibrium", in Wharton (ed.) Subsistence Agriculture and Economic Development, Chicago, Aldine, PP 165-184, and also,

    Kydd, J.G. (1978),"Family Farm Models and Rural Development Planning", a paper presented at the Social Science Conference, University of Malawi, Zomba.

21. This view is consistent with the findings of Kiray in Turkey, where the introduction of high yielding varieties of cotton proved incompatible with endogenous factors of some farmers, as it was found that many small households could not earn sufficient income from the new varieties. This was largely due to the fact that the new variety matured in such a short time that small farmers constrained by their family labour could not complete the harvesting operation in time. As a result, they were forced to work part-time for larger farmers." cited in Norman, D.W. (1978),-

"Farming Systems Research to Improve the Livelihood of Small Farmers", in <u>American Journal of Agricultural Economics,</u> Vol.60, No. 5, P813.

22. The depressed farm output prices, which make investment in agricultural implements (in the smallholder agricultural sector) less profitable, coupled with the rural wages policy, which is designed to provide labour, relatively cheapily to the estate sector, reinforces this decision.

23. Because of the high risk associated with obtaining food at the market, it would take a very high wage rate to persuade these households to abandon subsistence production all together and become full time farm labourers.

24. See, for example, Schultz, T.W. (1964), <u>op.cit.</u>, P37 and Welsh, D.E. (1965), "Response to Economic Incentives by Abakaliki Rice Farmers in Eastern Nigeria", in <u>Journal of Farm Economics</u>, Vol. 47, No. 4, PP 900-914.

25. See World Bank (1981b), <u>op. cit.</u> P 10.

26. Castro, A.P. (1981), "Indicators of Rural Inequality", in <u>World Development</u>, Vol. 9, No. 5, PP 401-427. He cites the findings of Feder (1971), Griffin(1979) and Deere and Janvry (1979), to support this point.

CHAPTER VII

POLICY IMPLICATIONS, RECOMMENDATIONS AND CONCLUSIONS.

As indicated in the introductory chapter, this study has attempted to assess the impact of a smallholder agricultural development strategy on the alleviation of rural poverty, LLDP, one of the pioneer experiments in smallholder agricultural development (both from the point of view of the World Bank and the Malawi Government), has been used as a case study. However, before drawing conclusions from the evidence emerging from our Smallholder Agricultural Households Survey in the LLDP, it is important to point out some of the outstanding characteristics of the survey area.

The Lilongwe district, in which LLDP is situated is unique in a number of respects. Firstly, its natural factors, ie. good soils, moderate temperatures, and reliable rainfall, make it an area of great agricultural potential, especially for smallholder crops. That is, of the total land area available in Lilongwe (about 615,000 hectares), 67% is rated as cultivable and this constitu ted about 7.8% of the cultivable land in the country.[1] As table 6.1 indicates, the 1968/69 National Sample Survey of Agriculture estimated that during the 1968/69 cropping season, Lilongwe District alone, was responsible for more than 20% and 30% of the total Malawian production of maize and groundnuts, respectively, and that average yields of both crops were the highest in the country (see table 7.1). This indicates that even before the project was underway, the quality and intensity of smallholder agricultural production in the District were higher than the national average.

Secondly, as a result of the area's agricultural potential, it has been a major recipient of agricultural efforts of varying intensities right from colonial times. In addition to LLDP, the Colby School of Agriculture, Chitedze Experimental Station and the Bunda College of Agriculture are all situated in the district. And more recently, the establishment of the new Capital City in the district, and its subsequent expansion, have added impetus to the modernising influence of external factors

(especially the availability of a growing and expanding market
for food crops and the availability of off-farm employment
opportunities in close proximity to the farm) on peasant
production in the area. More important, Lilongwe has enjoyed
the privilege of being one of the few places in the country
where smallholder agricultural production of cash crops (eg,
tobacco and groundnuts) was tolerated and even encouraged
during the colonial era, due to its distance from the Shire
Highlands, where European settler agriculture was concentrated
and also due to the fact that the crops involved were those
which did not compete directly with settler crops. This has
meant that both land and labour in the area were available for
smallholder agriculture in contrast to, say the Shire Highlands
where settler plantations of tea, tung and coffee took up most
of the land and labour available. The consequence is that in
the Lilongwe area the smallholder farmer has had a relatively
long experience in peasant cash crop production. Thus the
current agricultural development effort has been more or less
built upon an existing structure and along the lines of
adapting an already existing farming system and improving on
it.

Table 7.1 Smallholder Production, Yields and Hectarages of
Maize and Groundnuts in Lilongwe Districts Compared with
National and Regional Totals 1968-69.

(a) Maize

	Area (ha)		Yield (kg/ha)	Production (metric tons)	
		(%)			(%)
All Malawi	1068	(100.0)	1019.2	1091.0	(100.0)
Northern Region	110.2	(10.3)	817.6	90.0	(8.2)
Central Region	463.2	(43.4)	1176.0	545.8	(50.0)
Southern Region	496.8	(46.3)	918.4	455.6	(4.7)
Lilongwe	153.1	(14.3)	1523.2	234.0	(21.4)

(b) Groundnuts

All Malawi	449.2	(100.0)	448	202.2	(100.0)
Northern Region	35.8	(8.0)	481.6	17.2	(8.5)
Central Region	216.4	(48.2)	660.8	142.8	(70.7)
Southern Region	197.1	(43.9)	212.8	42.0	(20.8)
Lilongwe	186.3	(41.4)	963.2	62.5	(30.9)

Source: NSO Sample Survey of Agriculture, 1968/69

Table 7.2 ADMARC's Purchases of Tobacco and Groundnuts From
Customary Land, 1950-1974. ('000 metric tons)

Period	Tobacco			Groundnuts		
	All Malawi	Lilongwe		All Malawi	Lilongwe	
			(%)			(%)
1950-54	47.2	26.5	(56.2)	16.5	6.5	(39.5)
1955-59	50.8	30.1	(59.3)	54.2	16.3	(30.1)
1960-64	50.1	23.8	(47.5)	117.9	35.9	(30.5)
1965-69	60.8	27.2	(44.8)	168.2	58.5	(34.8)
1970-74	70.7	35.9	(50.7)	161.8	49.5	(30.6)
1950-74	279.6	143.5	(51.3)	518.9	166.7	(32.1)

Source: ADMARC Reports, and Department of Agriculture Reports -
See Compendium of Agricultural Statistics, Tables 6, 7a, and 7e(1c)
PP 8 and 21.   NB. Original data given in short tons.

In the light of the above evidence, it is clear that LLDP
is not a typical underdeveloped area. This implies that any
success of the project cannot be necessarily duplicated else-
where in the country where conditions may be different from
those obtaining in LLDP. Nevertheless, the analysis has
indicated the general constraints to smallholder productivity
and the conditions under which a smallholder agricultural
development strategy can reduce rural poverty. Such knowledge
is valuable in that it may indicate how rural development
efforts in other areas in the country could be appropriately
planned and implemented.

1. The Agricultural Development Strategy Considered.

The analysis of smallholder agricultural development in
Malawi has revealed that during the colonial and federal eras
there was a general neglect of smallholder agricultural develop-
ment in favour of estate agriculture, which was in the hands of
European settler farmers and companies. Government fiscal,
marketing and pricing policies were manipulated in such a way
that provided the estate sector with cheap labour. The con-
sequence of this neglect of smallholder agriculture was that
peasants were forced either to work on the settler farms, often
at low wages and unfavourable conditions, or to migrate to
South Africa, Zimbabwe or Zambia, an aspect that created severe
labour bottlenecks in the smallholder sector, and thus threat-
ened even subsistence production.

Attempts to reverse the situation in the 1950's met with
very little success because of the coercive methods used by the
agricultural department to revolutionize smallholder agriculture.
Some of the methods of agricultural production that were being
introduced had little economic rationality, and the use of
coercion, at a time when political awareness was at its highest,
meant that there was widespread resistence to their adoption.

The coming of political Independence in 1964, saw an abandon-
ing of the coercive approach to agricultural modernization.
Instead, the Department of Agriculture, sought to teach the
people better methods of farming through persuasion and example.

Thus, in the late 1960's, a smallholder agricultural development strategy was adopted which concentrated efforts and . resources on a few geographical places and or "progressive" farmers, to produce tangible results in the shortest time and therefore initiate a demonstration effect throughout the smallholding community. However, by the mid 1970's it was clear that the approach was not cost effective and it was not egalitarian. A new approach to agricultural development, under the auspices of the National Rural Development Programme (NRDP) was launched in the late 1970's. This Programme aims to achieve a broad based agricultural development.

While all these efforts at finding a viable smallholder agricultural development strategy have been going on in the post-independence era, the dual structure of the agricultural sector inherited at Independence has been maintained. Available evidence indicates that the role of the estate sector has been consolidated and strengthened over the past decade or so.[2] It is only fair to state that while experiments with small scale agricultural development have been going on, the estate sector has provided the economy with badly needed foreign exchange earnings (some of which have been used to finance the Integrated Rural Development Programmes), and therefore enabled Malawi to maintain a very respectable rate of growth in GDP over the past decade or so. This contrasts remarkably with the growth records of other developing countries which radically altered the structures of their agricultural sectors soon after Independence, such as Tanzania. According to World Bank estimates (World Bank 1981 b), during the 1960-70 decade (the decade when both countries attained their Independence), the average annual growth rate of GDP for the whole economy (in real terms), for Malawi was 4.9% while that for Tanzania was 6.0%.[3] However, between 1970 and 1979, Malawi's average annual growth rate rose to 6.3% while that for Tanzania fell to 4.9%.[4] It is interesting to note that during the later decade, Malawi registered an average annual growth rate of over 4% in its volume of agricultural production, while that of Tanzania was only between 1 and 2%.[5] As already indicated, the high growth rate in Malawi's

agricultural production during the period under review was spearheaded by rapid growth in the estate sector. Tanzania, on the other hand, put all its stakes on the "villagisation" and "collectivisation" schemes, with the consequence that when these failed to achieve increases in agricultural production, as many studies have indicated,[6] the result of this failure was severely felt by the whole economy, as reflected in the lower rate of GDP growth.

While such evidence provides some rationale of the prudence of adopting the dual agricultural development strategy (estate development and smallholder agricultural development), it should not mask the lessons learned from the pre-independence era. As already pointed out, over-emphasis on the estate sector during that period led to government policies (fiscal, marketing pricing and wages) which were geared to allocating resources (mostly land and labour) away from the smallholding to the estate sectors with disagreable effects especially on rural wellbeing. As mentioned earlier, the two sectors compete for resources of land, labour and capital finance. While available evidence indicates that the estate sector expanded over the last decade or so, largely by making use of idle resources, there is a growing feeling that this may no longer be the case. Kydd and Christiansen (1982), for example, argue that during the period of rapid estate expansion, in the post-independence era, wage and smallholder producer price policies have combined to channel both labour and finances to the estate sector, which has also been favourably treated with respect to land allocation.[7] Thus although the dual strategy may have served Malawi well over the past decade or so, in terms of maintaining agricultural growth, it could at best be a temporary solution to the country's long term development needs.

It therefore appears that if NRDP is to succeed in substantially improving the income positions of the smallholding community, there is a great need to carefully weigh the impact of the estate sector on smallfarm development, both from the point of view of resource allocation as well as access to markets. It is said that smallholder farm development offers the best opportunity to improve rural welfare in cases where

the smallholder community predominates, and that evidence
indicates that smallholder production of most of the crops
now produced by the estate sector, actually enhances higher
output (due to the inherent efficiency of small farms in their
use of inputs as opposed to large farms), it may therefore be
in the interests of the country to concentrate its agricultural
developement efforts on the smallholder sector.[8] This
would entail running down estate production of some crops (eg.
burley tobacco which is largely produced on the estates on a
visiting tenancy system),[9] and handing them over to small-
holders. This would have the effect of increasing employment
opportunities within the agricultural sector, since smallholder
agriculture tends to be more labour intensive than estate
agriculture. In addition it would have positive distributional
effects that would aid local industry (especially those involved
in the manufacture of mass consumption goods) rather than channel-
ling most of the income generated from agriculture to large
farmers and estate owners who tend to have a high propensity to
import goods from abroad.

2. A Summary of The Main Findings Emerging From The Survey Data Analysis.

In analysing the survey data, the main objective of the
excercise was to trace out the interrelationships among the
factors that were thought to be associated with household in-
comes from the farm enterprise, in an attempt to identify the
main sources of interhousehold differences in incomes observed
in the area. The analysis has been carried out at two levels.
The first level is what may be termed as a descriptive analysis
of the data. At this level, the aim was to isolate typologies
of households which displayed similar characteristics so that
a comparative study of the various typologies could be under-
taken. This has proved to be a very valuable exercise. It has
indicated that the often professed homogeneity of the rural
population in the area is merely a superficial one. The house-
holds have been seen to fall into a number of distinct typologies
with distinct characteristics regarding farming systems, farm
sizes, income levels, family sizes, etc. More important, this

analysis has revealed that, the development effort undertaken
in the area has had differing impacts on the different typo-
logies. For example, it has indicated that tobacco farmers
and improved maize growers are earning substantially higher
incomes from their farming enterprises than say, the female-
headed households, who are seen to hardly participate in
tobacco and improved maize production, but to rely increasingly
on wage labour and/or petty trading, not only to meet their
ordinary cash requirements, but even to supplement their sub-
sistence food requirements. Such findings are of crucial
importancein influencing the future direction of development
policy, for they clearly indicate that the present development
strategy, if not altered, is likely to lead to producing a
polarised rural community, which may not have been contemplated
by the policy formulators, as indicated in the policy state-
ments discussed in chapter III.

The second level of analysis is a statistical one. Here
the main concern has been to find out the main factors that are
associated with crop revenue. The hypotheses stated in the
introductory chapter were explored. The hypothesis that a house-
hold's level of total revenue from sale of crops is likely to be
associated with the type of crop enterprise undertaken (ie. adopt-
ion or non-adoption of innovations-----1a), was well supported by
·the data. This implied that the adoption of innovations was a
key to higher farm incomes. Similarly, the hypothesis concerning
the association between innovation adoption (defined by use of
modern farm inputs) and access to credit was also supported by
the survey data. It was found that those who adopted the
innovations introduced by LLDP, mostly did so with the help of
credit. Although the evidence supported the hypothesis,
because the nature of the data did not allow us to confirm the
existence of causality in the relationship, some reservations
regarding the impact of credit on innovation adoption were
expressed. It was argued that the pattern of input credit
distribution (although it correlated with that of innovation
adoption), could have been influenced by other factors, related
or unrelated to innovation adoption. Inefficiences in the

marketing of inputs (by ADMARC), were cited as one of the
likely factors that could have contributed to the suppression
of cash purchases of inputs, thereby making access to credit
more closely related to uptake of innovations.

The evidence that households with larger hectarages had
more access to credit than those with smaller ones, supported the
hypothesis   regarding the relationship between farm size and
access to credit (hypothesis 2a). Such evidence tended to
indicate that credit distribution wasbased on the "ability to repay"
principle, implying that the pattern of credit distribution,
and therefore innovation adoption, had its roots, not only at
the macro level (deliberate Government policy to foster elitist
development), as it has usually been claimed, but also at the
micro-level, ie. it had also to do with the determinants of
farm size at the household level. Of the two hypotheses put
forward to explore the determinants of farm size, at the house-
hold level, the one partaining to the relationship between
farm size and family labour force (hypothesis 2b) was not
adequately supported. On the other hand, the hypothesis regard-
ing the relationship between cultivated area and hired labour (hypo-
thesis 2c), was supported by the available evidence. Such a
finding was indicative of the fact that, in the circumstances
under review, because of the sharp seasonality of the crop
labour demands, and the inherent labour intensity of the crop
enterprises supported by the development effort (eg. tobacco,
groundnuts and improved maize varieties), it was only those
households who could raise the peak labour requirements (mostly
through the help of hired labour), who were in a position to
take up innovations. Thus, smaller and poorer households, with
inadequate labour resource to meet the peak labour demands of
the new innovations, at least at a level high enough to produce
a marketable surplus, over and above their subsistence require-
ments, tended to be left out of the innovation band wagon.

In an attempt to explore the factors associated with a
household's ability to hire labour, we looked at the hypothesis
that expenditure on hired labour was closely associated with
non-farm income receipts (2d). However, the hypothesis could not
be substantiated as the evidence was mixed. The largest group of
households hiring labour (tobacco growers), were found to have the
least proportion of non-farm income in their total household incomes
and paying their hired labour largely in kind than cash. For this

group of households, it appears that their ability to produce maize surpluses, made possible by their privileged access to input credit, as discussed in chapter V, enabled them to hire labour. As already indicated, most of those people who hired out their services, did so in order to supplement their depleted food supplies, to these people, payment in kind, which was usually in the form of maize, was the most preferred one given that at the time of the year, food prices were very high. On the other hand, the other group of labour hirers (the improved maize growers), depended largely on cash to pay for their hired labour. For this group, whose non-farm income receipts were mostly from trades, business enterprises and more secure forms of employment, the relationship between the expenditure on hired labour and non-farm income receipts was quite sustantial. This implied that their access to non-farm income sources, enabled them to hire the labour required by the crop enterprises they undertook.

Finally, the hypothesis that cash purchases of inputs are likely to be associated with a household's level of non-farm income receipts was not supported. This could either reflect the inefficiencies in the input marketing system referred to earlier, or it could reflect the fact that because input credit is readily available, once a household's likelihood to produce a marketable surplus is established (usually by referring to its previous record, or looking at the size of the area it cultivate the previous season), households find it more prudent to reserve any cash they might have, for hiring labour during the peak season.

Overall, the analysis has indicated that labour availability played a very important role in the household's ability to adopt the innovation "packages" offered by the project. It has indicated that in the 1980/81 season, a substantial proportion of the households surveyed in LLDP (about 70%) had adopted the innovations offered, that is, they had undertaken such enter- prises as tobacco, improved maize (hybrids and/or composites) and improved groundnuts, and used recommended inputs and followed crop husbandry methods as stipulated by the extension

staff. This is a commendable achievement on the part of LLDP.
However, the evidence arising from the survey tends to indicate
that the "non-adopting" farmers who are mostly female-headed
households, are not likely to be brought into the line of
adopters under the current development strategy which tends to
foster the adoption of relatively labour intensive innovations
(by tying input credit to particular crop enterprises). This
is reinforced by the lack of innovation packages (such as
smaller input "packages") which are appropriate for the small
and poor farmers.

The analysis has indicated, for example that, the female
headed households, who are unable to participate in the new
innovations (largely because of the labour bottleneck) and are
constrained by household commitments to venture into non-farm
employment opportunities (such as moving from their homes in
search of work, say on the estates etc),   tend to hire out
their labour to better-off, "innovating" households, at relati-
vely depressed rural wage rates. It therefore appears that the
income gap between the so called "innovators" and "non-
innovators" is likely to widen as the former get more and more
commercialised while the latter tend to become more marginal
agricultural producers, depending increasingly on wage income.
Such a trend seems to be contrary to the present rural develop-
ment policy, (as stated in NRDP, Strategies, Policies and
General Features: 47), which seems to stress the need for the
smallholding community to be self-sufficient in basic food-
stuffs and become increasingly producers of marketable surpluses
rather than agricultural labourers. Such a contradiction high-
lights the conflict between estate development and smallholder
development embodied in the dual agricultural strategy. If the
smallholder agricultural development effort is to achieve its
objective, that is, to initiate a broad based agricultural
development, by enabling the labour deficient and poor house-
holds to participate in innovation adoption, it is imperative
that the labour availability problem is appropriately
considered when designing innovation "packages". However,
before examining the various alternatives which can be employed
in enhancing the income positions of the poor "non-innovating"

households, it must be stressed that there is need for more intensive research into the problems of the poor households. For example, there is need for a more careful assessment of the family labour availability situation among the female-headed households to findout the factors that determine labour allocation between various competing needs such as subsistence crop production, cash crop production, non-farm income earning opportunities (eg. beer brewing etc), and household chores (including child care). Such studies should be geared to identifying the labour bottlenecks of such households with a view to suggesting remedial policies.

It is only after such studies are undertaken that appropriate innovation "packages" can be designed for such households. It is also important to find out how such poor households fare with regard to access to various social services such as health, education and other amenities. For it is the feeling of the present writer that these under-privileged households may have limited access in such areas, due largely to sociological barriers, and this may have the effect of reducing the chances of the children from such households breaking out of the poverty trap. The writer is of the opinion that more research in these areas is warranted if rural development is not to continue to be spotty and selective in its effects.

3. <u>Propositions for Improving the Lot of the Poorer Households</u>.

1. <u>Reducing the Labour Bottlenecks</u>.

As it has already been pointed out, the main factor that prevents the poor households from taking up innovations offered in LLDP appears to be labour shortage, especially during the peak seasons. The survey results have indicated that this labour bottleneck imposes a double bind on the poor households. That is, it restricts their cultivated areas as well as restricting their access to credit. It therefore appears that removing the labour constraint of these households is likely to have the effect of greatly enhancing their farm income positions. A number of options are available for this task.

(i) **Mechanisation.**

In a situation where labour is seen to be a bottleneck, mechanisation appears to be one of the options which can alleviate the problem. This was recognised by the project authorities right from the start, when medium term credit was made available to farmers to purchase oxen and ox-drawn implements etc. However, it has been pointed out that the main limitation of using mechanical implements to improve the labour situation in LLDP seemed to stem largely from the inappropriateness of the available mechanical implements to those farming processes where the labour constraint was critical (such as weeding), and the depressed farm output prices that do not provide an incentive to farmers to invest in labour saving innovations. It therefore, appears that unless appropriate mechanical implements are introduced (such as mechanical weeders, etc) and an appropriate output price structure instituted, which will make investments in such implements profitable, mechanization per se, is likely to offer no solution to the labour shortage problem.

(ii) **Hired Labour.**

To the extent that labour availability is an important constraint to higher farm output for a majority of households (as the LP model suggested), hired labour has become an important element in enhancing agricultural output in the area. However, development of peasant agriculture based on hired labour has serious distributional implications. In a situation where there is a willing labour force (outside the beneficiary group) ready to provide the hired labour, such as a landless class or an influx of immigrants (as was the case in Malawi, up to the early 1960's, when there was an infux of immigrants from neighbouring Mozambique seeking agricultural work in Malawi, especially in the southern region), this may not have serious distributional effects among the beneficiary community, but in a situation where some of the peasant community that is part of the beneficiary group of the development effort provides the hired labour, as is the case in LLDP, serious distributional implications are likely to arise. For

it is likely that those households who are on the margin and
cannot fully meet their consumption requirements from their
own farms, will hire out their labour to wealthier households
(and/or agricultural estates) especially in a situation where
non-farm income earning opportunities are limited. This is
supported by the relatively high proportion of cash income
arising from selling labour, associated with categories [1] and [11]
households (ie, female-headed households and male-headed house-
holds neither growing tobacco nor improved maize varieties).
It is therefore seen that unless special programmes (supplement-
ary to the smallholder agricultural development effort) are
specifically designed to improve the lot of these people, a
smallholder agricultural development strategy that depends sub-
stantially on hired labour to spread adoption of innovations
is likely to accelerate rural differentiation.

Boesen and Mohele (1979). have described how in a Tanzanian
situation where labour was a bottleneck, liberal availability
of credit (including cash loans for hiring labour) enabled
households to take up the innovations offered. This led to a
boom in the peasant production of flue-cured tobacco.[10]
However, a change in political climate, which led to the
abolition of cash loans, and the restriction of hiring labour,
coupled with adverse price movements in the price of tobacco,
dealt a severe blow to the boom, leading eventually to a change
in land use pattern, that is from emphasis on tobacco product-
ion (which is relatively labour intensive and therefore required
hired labour) to more emphasis on the production of subsistence
crops such as maize (which are relatively less labour intensive
and therefore more easily handled by family labour).[11] For
example, in the estimation of the gross margins for tobacco
and improved maize in LLDP the principal crops from which the
programme's benefits are expected to arise, hired labour is
included (see table 6.10), indicating that it is officially
recognised that the adoption of these crops is strongly linked
to a household's ability to hire labour, thereby, clearly
indicating that the poor and labour deficient households cannot
participate in them, except as providers of hired labour to

others. In the absence of any close supervision of the rural wage rate structure (not only on the established agricultural estates, but also in the smallholder sector), such a strategy is likely to compound the plight of the poorer households.

iii. Alternative Cropping Patterns.

As previously indicated, monocropping is a major husbandry recommendation in LLDP. However, it has been argued (Norman, 1975) that, although in terms of total annual man hour inputs crop mixtures may require more labour per hectare, in a situation where the timing of the processes associated with various crops coincide (as is the case for weeding of maize and, say groundnuts), this incremental labour requirement may not be very high, and could well be compensated for by other advantages associated with intercropping.[12] In addition, in a situation where subsistence production seems to be a very important objective of smallholders, monocropping could well undermine this objective. It increases the risk associated with crop failure. For example, results from the LP model have indicated that an average female headed household could (under the given set of assumptions) be able to provide its subsistence requirements from 1.46 hectares of pure stand maize and be able to have a marketable surplus, if the assumed yield fo 1100 kg/ha is met. However, in adverse conditions (ie. via incidence of crop diseases or inadequate rainfall) where the yield could be reduced by say, 50%, the 1.46 hectares of pure stand maize may only just meet the subsistence requirements of the household, with hardly anything left to sell for cash. If the 1.46 hectares were usefully interplanted with other crops, which are not prone to the particular crop diseases, or are draught resistant, such as cassava, sweet potatoes, legumes, etc. the prospects of the household could be brighter.

It should also be pointed out that the monocropping requirement limits the diversification of the farm enterprise. In the case of LLDP, this means only such crops as improved maize, tobacco and groundnuts which enjoy project support, will be grown by most households. This is supported by the evidence that on average, 63.4% of cultivated land in LLDP (1969/70 to

1978/79), was planted with maize, 20.7% and 11.1% with ground-
nuts and tobacco respectively, leaving only 5% for other crops.
Self-sufficiency in food does not necessarily mean only having
enough maize (the main staple food in the area), it also means
having other food crops (vegetables, fruits etc) to provide a
properly balanced diet. Thus, if monocropping is rigidly
adhered to by all farmers in the area, it may lead to a shortage
of other food crops such as, cassava, sweet potatoes, pulses
and vegetables. And indeed, the writer observed that these
crops were in short supply both in the urban and local markets
in Lilongwe. Supplies of these crops in the area usually came
in from other regions such as Dedza, Ntcheu, etc., although the
potential to produce them locally in adequate supplies does
exist.

It therefore appears that there is need for more research
to establish crop combinations which could be usefully inter-
planted, and to find methods of intercropping amenable to
modern technology, eg, alternate row planting of different crops
in order to alleviate the labour bottleneck and enhance food
self-sufficiency (in terms of a properly balanced diet) among
the marginal farmers.

Our survey results have indicated that the poorer house-
holds (typologies 1 and 11) because of their smaller labour
resources, lie at the bottom end of the income scale. Their
position is made worse by the fact that input credit is tied up
with the cropping pattern which is determined by the household's
labour avialbility situation. Since the crops for which input
credit is readily available (tobacco and improved maize) are
inherently labour intensive, it implies that the main hope for
the poorer labour deficient households (within a smallholder
agricultural development strategy) to improve their lot lies in
their finding crop enterprises which have relatively low
labour requirements (especially during the peak season). It
appears that one possibility would be to encourage such house-
holds to grow crops like pulses, vegetables, sugar cane, sweet
potatoes, etc. As pointed out above, the writer observed that,
because of the monocropping requirement, and the bias of credit
and extension towards particular crops such as tobacco and

improved maize, these minor crops tend to be absent from a great deal of the holdings in the area, with the consequence that they are imported from other areas. The survey revealed that a good number of the poorer households (especially typology 11) relied to some extent on selling say, tomatoes, sugar-cane, vegetables, etc., to boost their cash incomes. Unfortunately, these crops hardly receive any credit or extension support from the project. This lack of interest for other crops, on the part of the project is reflected in the absence of any serious research efforts in the production techniques of minor crops apart from beans, on which substantial research work has been carried out mostly at Bunda College of Agriculture (University of Malawi). The present writer is of the opinion that some of these minor crops could with adequate project support, say in the form of input credit, research services, and marketing co-ordination, meet the needs of a good number of poor households. For one thing, they are both less labour intensive, in that some of them are essentially off-season crops (eg. vegetables). Experience from other parts of the world have indicated that with proper price incentives small plots of minor crops can substantially boost household incomes[13]. At the same time, it could be useful to encourage the poorer households to keep small livestock such as goats and pigs, by extending animal husbandry advice, and probably credit to include such small livestock, rather than restricting these to large livestock as appears to be the case at the moment.

II. Non-farm Activities Aimed at Raising the Incomes of the Poor Households.

It appears that, both from innovation theory and principles of financial management (pertaining to credit programmes), there is no easy way through which the poorest section of the rural community will benefit from a rural development strategy that depends largely on adoption of innovations in a smallholder context. And yet, if agricultural output is to rise in the developing countries (which is essential to sustain the rapidly growing populations) new innovations will have to be adopted. That means resources will continue to be channelled towards those sections in the rural community which demonstrate the

ability to use them effectively, hence by-passing the poorer
section. Evidence from the socialist countries has indicated or-
ganisational innovations such as formation of group farms and
co-operatives, etc., have their limitations in reconciling the
problems of increasing agricultural productivity and achieving
an even and fair distribution of development benefits.[14]
This means that rural development planners will have to come
to grips with the fact that smallholder agricultural develop-
ment per se, has its limitations in solving the problem of
rural poverty. Thus there is need to seek for other alter-
natives of raising the incomes of those people for whom
agriculture alone may not hold any promise. Even the so called
"success" stories of rural development such as Taiwan and Japan,
reveal that the observed improvements in rural incomes and
rural well-being did not come entirely from improvements in
agricultural productivity.

Chinn (1979), in his analysis of rural incomes in a major
rice growing area in Taiwan, indicated that income from non-
farm sources played a substantial role in reducing income in-
equalities in the rural areas.[15] He found out that income
differences evened out as participation in non-farm activities,
especially sideline activities became more widespread overtime.[16]

His results sugested that non-farm sources of income allowed
households with small holdings to close the income gap between
themselves and large farmers by allocating some of their labour
to non-farm activities. He cites similar findings for Japan
and the United States.[17]

These findings strongly stress the importance of the inter-
dependence between the agricultural and non-agricultural sectors
in the development process. More important, they indicate that,
as the strategy of industrial development alone has failed to
solve the rural poverty problem, smallholder agricultural develop-
ment alone will not do it either.

Low (1981), using examples from Lesotho and Swaziland, has
argued that in a situation where increases in farm output appear
to be less independent of family labour transfers, than in
Taiwan, etc. (due to lower level technology used) off-farm
employment opportunities may have adverse effects on total farm
output and therefore lead to a decline in real farm incomes.[18]

His argument is that rising non-farm income opportunities in
a situation of low-level and static technology, higher returns
to labour in the non-farm than farming activities, will lead
to a labour allocation pattern, whereby families find it more
profitable to allocate more family labour to non-farm than to
farm activities. And, without substantial changes in
agricultural technology, this could lead to a decline in total
agricultural output. [19]

However, although it could be true that in Lesotho and
Swaziland there was a decline in the farm labour force, as a
result of rising employment opportunities outside the agricultu-
ral sector, as happened in Taiwan and Japan, it should be noted
that the circumstances were different. In the latter, cases,
the decline in the farm labour force was due to rising opportuni-
ties in the domestic non-farm sector, whereas, in the former
cases the decline in farm labour was largely due to increased
migration to South Africa. Colclough (1980) indicated that in
Lesotho about $\frac{1}{2}$ of the labour force was working abroad during
the period under review. [20]

In a situation where the labour transferred from agriculture
is employed in domestic non-agricultural activities, demand for
food and other agricultural products is likely to rise. With
an appropriate agricultural pricing policy, it is possible to
raise incentives among the remaining farm workforce to a point
where theyfind it profitable to take up productivity raising
innovations (especially labour saving ones), and this appears
to have been the case in Taiwan and Japan. [21] In such a
situation, an increase in non-farm employment opportunities
is likely to act as a catalyst for the adoption of innovations, as
such, technology need not remain static and output need not
decline with a drop in the farm labour force. In the two
Southern African countries, since the fall in farm labour was
largely due to outward migration, the linkage effect between
agriculture and industry was lost, especially since most of the
earnings of the migrants (even when remitted to the two
countries) are mostly spent on South African produced goods.
As such, the demand for agricultural products from domestic

industry is not that high and incentives to take up labour
saving innovations in the farm sector (to replace the labour
lost to industry) may not be present. This is likely to lead
to a decline in farm output as Low claims to have observed in
in the Southern African cases.

It therefore appears that Low's argument does not invalidate
Chinn's conclusions regarding the role of non-farm income earn-
ing opportunities arising within the domestic economy. More
important, Chinn is arguing for a rural development strategy
that incorporates a non-farm activities component, to cater
especially for those very poor households who for one reason or
the other, cannot benefit from productivity raising innovations.
A closer investigation of the problems facing the poorer house-
holds covered by our survey sugests that lack of purchasing
power (to buy family necessities, including food, during the
"hunger gap") appears to be quite a serious problem. This
forces these households to:

  (a) Sell their crops early in the season when prices are
       very low, and
  (b) to hire out their family labour to other households or
       agricultural estates during the peak season (when
       demand for hired labour on the more progressive farms
       is very high), thereby further aggravating their labour
       problems and hence their farm income positions.

It therefore appears that, since these households are unable
to raise their household incomes by adopting innovations, for
the reasons already discussed, another alternative (to those
given above) of raising their incomes would be to provide them with
opportunities to earn income in close proximity to the farm.
This could make a substantial contribution to the incomes of
such households without jeopardising their subsistence food
production (as it would reduce both the tendency to hire out
labour and sell food early in the season to get cash). In
such a case, the objective would not be to make these marginal
farmers surplus producers, but to help them achieve self-
sufficiency in subsistence food, while giving them the
opportunity to earn cash for their other household needs
from non-farm sources.[22]

It would therefore be necessary to identify non-farm activities in the rural areas which are geared to the village economy which require small inputs of time and family labour, in which the poor and labour deficient households could be encouraged to engage in (especially during the off-peak seasons), while continuing with their primary activity of agricultural production - as is the case with the Antyodaya Scheme in India.[23] This scheme, which originated in the state of Rajasthan, India, came about because of the realization that virtually no scheme for the distribution of loans, grants and other forms of assistance designed to promote productive activities of direct benefit has significantly affected the poorest section of the rural society even when such programmes were specifically designed to assist them.[24] It was therefore thought that a change of strategy was necessary. Under this scheme, the aim was to help a man discover and start up his latent or lost earning capacity, and then let him try by himself. The approach was for each village to select its poorest five families, who would be eligible for "Antyodaya" aid. This aid was granted in the form of a grant (33%) and a low interest loan, with the funds coming from commercial banks. The recipients had to identify non-farm activities, which were geared to the various needs of the village economy, such as unmechanised means of transportation and tilling, rural crafts, cottage industries, repair and servicing agencies, etc. The size of the enterprises must be such that they do not interfere with the households' subsistence agricultural activities.

The programme achieved a remarkable degree of success. Chhabra (1982), reports that by the end of 1980, a total of about 217,000 farm families had been helped with loans amounting to about $27.6 million, with only 48,000 families receiving straight social security benefits, but the rest having been involved in self- generating activities. He reports that the scheme did not encounter any resistance from the existing village power structure, as the recipients were freely selected by the villagers themselves. In addition, Chabbra points out that

the banks reported an 80% repayment rate (on schedule),[25]
an aspect which is contrary to normal thinking which regards
the poor as bad credit risks, and a proof of the financial
soundness of the enterprises undertaken. Due to this good
performance, the concept of "Antyodaya" has been incorporated
in the national Integrated Rural Development Programme. This
does not offer any social security benefits, but concentrates
solely on credit coverage and skill development of the very
poor people.

Conclusion.

It must be emphasized that the analyses in this study should
not be interpreted to mean that the efforts of the smallholder
development effort have not benefitted the rural population in
the country. To the contrary, the evidence emerging from the
study (within the limitations imposed by the available data)
indicates that the efforts have been successful in inducing
the spread of adoption of innovations by the smallholder
community. In LLDP, for example, the survey results have
indicated that about 60% of the sampled households participated
in growing the recommended crops and followed recommended
husbandry practices - mostly with the help of credit. The
analysis has tried to indicate the likely reasons why the
remaining 40% of the intended beneficiary group may not have
adopted the innovations offered, and tried to suggest the
various means by which the income positions of the poorer house-
holds could be enhanced. It has also tried to highlight areas
of further research which could yield useful information about
how to tackle the problem of rural poverty. By far, the largest
contribution of the study is that both in designing and evaluat-
ing rural development programmes, it is very important to get
more penetrating insights into the target population. In this
respect, the study emphasizes the usefulness of identifying
farm household typologies within the target population and then
investigating the constraints faced by each typology separately
so that the needs of each typology can be appropriately assessed.
This is because in the past, there has been too much reliance on
more broad generalisation of the characteristics of the target
group. That is, the heterogeneity of rural households (as

regards resource endowments) has been largely ignored by basing most of the project design and evaluation on the "average" household within the target population. The result of this has been that most of the packages, designed for the "average" farmer have proved to be inappropriate to quite a number of households, and very little attempt has been made to tailor means to the needs of the various groups of farmers as planners lacked the appropriate information. It is therefore, hoped that the approach of identifying household typologies and analysing their characteristics will aid both project design and evaluation.

Notes - Chapter VII

1.. Malawi (1977), Compendium of Agricultural Statistics, 1977, National Statistical Office, Government Printer, Zomba. Table 1.

2. See, Kydd and Christiansen (1982), op. cit; Kliest (1980), op. cit; and Ghai and Radwan (1980), op. cit.

3. World Bank (1981 b), op. cit, P 144, Table 2.

4. Ibid.

5. Ibid. P 50

6. Most of the agricultural estates in Tanzania were turned into state farms, and the efficiency of these farms proved to be below that of the earlier estates which were under private enterprise. In addition, these farms are said to have proved to be capital intensive, export oriented and had less impact on the rural population. See, Desai, P.U. Mutalik (1976),"Ujamaa Villages. A Tanzanian Experience", in African Studies Review, Vol. 20; McHendry D.E. Jr. (1976), "The Ujamaa Village in Tanzania: A Comparison with Chinese, Soviet and Mexican Experiences in Collectivisation", in Comparative Studies in Societies and History, Vol. 18, No.3.

7. Kydd and Christiansen (1982), op. cit.

8. See Lele, Uma (1975), op. cit,PP 74-76.

9. Kydd and Christiansen (1982), op. cit; and Chanock, M. (1977), op. cit, P 405.

10. See Boesen, J. and Mohele, T. (1979), op. cit, P 107

11. Ibid. PP 101-105

12. Norman, D. (1975), "Rationalising Mixed Cropping Under Indigenous Conditions: The Example of Northern Nigeria", in Journal of Development Studies, Vol, 11, 1974/75, P. 12.

13. See for example, the discussion of agricultural output on private plots in the Soviet Union, by Shaffer, H.G. (1977), Soviet Agriculture : An Assessment of its Contributions to Economic Development, London. PP 96-97.

14. McHendry (1977), op. cit, and also Unger, J.(1978), "Collective Incentives in the Chinese Countryside: Lessons from Chen Village", in World Development, Vol. 6; and Cohen, J. (1978), "Land Tenure and Rural Development in Africa", Development Discussion Paper, No. 44, Harvard Institute for International Development, Massachussets.

15. See Chinn, D.L. (1979), op cit, PP 281-284.

16. Ibid, P 286.

17. Ibid, P 286.

18. Low, A.R.C. (1981), "The Effects of Off-Farm Employment on Farm Incomes and Production: Taiwain Contrasted with Southern Africa", in Economic and Cultutal Development, Vol. 29, No. 4, PP 741-748.

19. Ibid.

20. Colclough (1980), Some Aspects of Labour Use in Southern Africa - Problems and Policies", I.D.S. Bulletin, Vol. 11,

    No. 4, P29.

21. Chinn, for example, cites selective small scale mechanization, as one of the important factors that contributed to productivity growth in the Taiwanese case he studied. See Chinn (1979), op cit, P 300.

22. Ibid, P 300; see also Castro (1981), op cit, who cites evidence from Chimula, in Mexico, where 80% of the households produce only about 12% of the maize they consume annually, and engage in a number of non-farm activities, including seasonal wage labour on plantations etc, to supplement their farm incomes.

23. See Chopra, P (1981), "Unto the Last", Ceres, January 1981 PP 33-36.

24. See Sinha, Sanjay (1981) "The Direct Attack Strategy For Poverty Removal: Implementation Methodology", in Community Development Journal, Vol. 16, No. 1. PP 36-43

25. See Chabbra, Rami (1982), "Help for the Poorest in India", in Development and Co-operation, No. 4, P.31

APPENDIX I

The Linear Programming Model

For each of the household typologies, a linear programming
exercise was undertaken. The inequalities involved were as
follows:

Objective‾   Maximise total gross margins (TMG) from the
five activities, ie.

$$TMG = 0X1 + 53.3X2 + 102.2X3 + 81.7X4 + 130.5X5$$

For Typology I households (Female Headed), the constraint
inequalities were:

(i) Labour (using the crop labour demands in table 6.11) :

            Oct. $49X1 + 49X2 + 49X3 + 12X4 + 261X5 \leqslant 170$

            Nov.

           •

           •

           •

            Sep. $32X1 + 32X2 + 32X3 + 10X4 + 96X5 \leqslant 170$

(ii) Land $X1 + X2 + X3 + X4 + X5 \leqslant 8$

(iii) Food $1100X1 + 0X2 + 0X3 + 0X4 + 0X5 \geqslant 960$

(iv) Finances A $1.24X1 + 1.24X2 + 70.43X3 + 22.22X4 + 83.24X5 \leqslant 19$

       Finances B $0X1 + 0X2 + 15X3 + 0X4 + 15X5 \leqslant 9.5$

For Typology II households (non-tobacco and non-improved maize
growing male headed households)

(i) Labour   Oct. $49X1 + 49X2 + 49X3 + 12X4 + 261X5 \leqslant 231$

               •

               Sep. $32X1 + 32X2 + 32X3 + 10X4 + 96 X5 \leqslant 231$

(ii) Land $X1 + X2 + X3 + X4 + X5 \leqslant 8$

(iii) Food $1100X1 + 0X2 + 0X3 + 0X4 + X5 \geqslant 960$

(iv) Finances A $1.24X1 + 1.24 X2 + 70.43X3 + 22.24X4 + 83.24X5 \leqslant 19$

       Finances B $0X1 + 0X2 + 15X3 + 0X4 + 15X5 \leqslant 9.5$

APPENDIX I

(continued)

The inequalities for categories III and IV were set up in a similar manner. The complete LP Model was set up as follows:

	Crop Enterprises					Household Typologies			
	X1	X2	X3	X4	X5	I	II	III	IV
Maximise TMG	.0 +	53.3 +	102.2 +	81.7 +	130.5 $\geqslant$	170,	231,	331,	254
Subject to:									
i. Labour: Oct.	49 +	49 +	49 +	12 +	261 $\leqslant$	170,	231,	331,	254
Nov.	86 +	86 +	86 +	40 +	116 $\leqslant$	170,	231,	331,	254
Dec.	99 +	99 +	99 +	272 +	252 $\leqslant$	170,	231,	331,	254
Jan.	111 +	111 +	111 +	79 +	370 $\leqslant$	170,	231,	331,	254
Feb.	49 +	49 +	49 +	175 +	252 $\leqslant$	170,	231,	331,	254
Mar.	10 +	10 +	10 +	25 +	455 $\leqslant$	170,	231,	331,	254
Apr.	59 +	59 +	59 +	40 +	514 $\leqslant$	170,	231,	331,	254
May	96 +	96 +	96 +	237 +	321 $\leqslant$	170,	231,	331,	254
Jun.	72 +	72 +	72 +	274 +	348 $\leqslant$	170,	231,	331,	254
Jul.	54 +	54 +	54 +	222 +	195 $\leqslant$	170,	231,	331,	254
Aug.	49 +	49 +	49 +	104 +	35 $\leqslant$	170,	231,	331,	254
Sep.	32 +	32 +	32 +	10 +	96 $\leqslant$	170,	231,	331,	254
ii. Land	1 +	1 +	1 +	1 +	1 $\leqslant$	8,	8,	8,	8.
iii. Food	1100 +	0 +	0 +	0 +	0 $\geqslant$	760,	960,	1483,	1090
iv. Finance									
A.	1.24 +	1.24 +	70.43 +	22.22 +	83.24 $\leqslant$	18,	19,	84,	76
B.	0 +	0 + 15.00 +		0 + 15.00 $\leqslant$		9,	9.5,	42,	38

Notes. X1 –Local Maize for food

X2 –Local Maize for sale

X3 –Hybrid maize for sale

X4 –Groundnuts

X5 –Tobacco

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