

Chapter 2

Agricultural and Rural Development in Malawi:

The Role of Policies and Policy Processes^a

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1. INTRODUCTION

Malawi, with a population of about 10 million people, has an economy that has always depended on agriculture. Agriculture accounts for 85 percent of employment for the total rural population, 35 percent of GDP, 80 percent of the labour force, and 90 percent of foreign exchange earnings.

Although Malawi's economy depends on agriculture, there is a serious problem of food insecurity compared to Asian countries where not long ago, most countries were regarded as hopeless cases, where in the race between population and food resources, the Malthusian theory was applicable and the population appeared to be outgrowing resources.

After independence in 1964, Malawi was able to achieve an impressive growth for the first 15 years. However, Malawi experienced a number of shocks in the late 1970s as a result of such factors as the oil shock of 1973 and the civil war in neighbouring Mozambique. These factors exposed structural weaknesses in the economy and in response, from 1981, Malawi has been implementing a broad program of macro economic adjustment and structural policy reforms supported by the World Bank, IMF, and other multilateral and bilateral agencies. These reforms have also affected and impacted on the country's agricultural sector.

Against this background, this paper aims to analyze the agricultural intensification process in Malawi by looking at the preconditions, actors and the effects of the process. The paper has been guided by the following research questions:

- Has intensification of staple food production taken place? If so, since when (Is there any important temporal break point)?
- (When) has there been an 'objective' need for intensification of staple food crop production (e.g. food gap, land frontier, man-land ratio, etc.) in Malawi?

^a Tsutomu Takane, ed., *Agricultural and Rural Development in Malawi: Macro and Micro Perspectives* (Chiba, Japan: Institute of Developing Economies, 2005).

- Has the state interpreted the need for food self-sufficiency?
- Which has been the most important precondition (driving force) for explaining the coming about of intensification of food production in Malawi?
- Which is the most important explanation for the documented macro-level outcome of the process studied (aggregated effects)?
- Which actor(s) – state/market/peasants – has been the most important contributor to documented intensification of food production?
- How facilitating or constraining has state intervention been?
- Has the state induced/stimulated the development of market actors (private entrepreneurs, NGOs, CBOs, etc.) in agriculture and/or agriculture-related activities/niches?
- What is/has been the State's policy towards family based/small-scale/large scale agriculture?
- Did nationalism play a role in the actions taken by the state?
- Has, during the period studied, Asia figured as a model for any actors involved?
- Is it relevant to talk about a post-SAP period, and in what sense does it differ from the pre-SAP and SAP periods?

2. STUDY METHODOLOGY

The study was carried out through a desk study and key informant interviews with government officials, donors and NGOs involved in agriculture and food security in Malawi. The data was collected from August to October 2004.

3. PRECONDITIONS FOR AGRICULTURAL INTENSIFICATION

3.1. Food Situation

3.1.1 *Level of national food self-sufficiency*

Agriculture in Malawi is generally characterized by low productivity such that in some years food requirements outstrip domestic production and the country has to import additional food to fill the food gap. For example during 1999 to 2001, nationally, per capita per day food energy supply was only 2,165 calories or only approximately 93% of the estimated 2,325 calories required to meet minimum energy needs (Johnson 1996).

We indicate in Table 1 data from FAO's estimates of Malawi food balance sheets over the period 1961-63 to 1999-2001. The data indicate that, for the 40 year period, only for four three year periods, 1969-71, 1972-74, 1974-76 and 1976-79, showed per capita per day energy supply above the estimated 2,325 calories per day requirement. This is an indication that Malawi performed better in meeting its food needs only in the 1970s. Data for the 1960s, 1980s and 1990s show that the country's food availability (production and imports) were less than what was required to meet energy needs. Estimated average levels of consumption from the table for the 1960s, 1980s, and 1990s were 2,188, 2,103 and 1,996 calories per day respectively. This shows a declining trend in the ability to

meet food sufficiency at the national level. As the information in table also includes imports, one can safely say that Malawi has had problems in being self sufficient in food.

In table 2 we present the supply and utilization of cereals in Malawi over the same period. The data indicate increasing levels of cereal imports to satisfy food requirements for the country. This is especially the case from the late 1980s.

3.2 Agro-ecological and demographic preconditions

3.2.1 Agro-ecological setting

Malawi is a sub-tropical country situated between 9⁰ and 18⁰ S and longitudes 33⁰ and 36⁰ E in south-eastern Africa. She is a relatively small land-locked country of approximately 119,000 square kilometers, of which water bodies dominated by Lake Malawi cover an estimated 24,000 square kilometers.

Physiologically, Malawi is divided into five zones as follows:

- a) High plateau: consisting of areas 1,500 to 2,400 metres above sea level (masl) with slopes ranging from 5% to 15%. Forest reserves and national parks cover large proportions of these areas whose natural vegetation is *Brachystegia* woodlands and rains exceed 2,000 mm per year.
- b) Hill country: consisting of areas 1,400 to 2,400 masl with moderate to steep slopes. Most of the areas have been cleared and their deep soils and relatively high rainfall make this zone suitable for agriculture.
- c) The plains: areas 600-1,400 masl with slopes of 2% to 5% and rainfall of 1,000 to 1,500 mm. Their natural vegetation consists of different forms of *Brachystegia*, *Combretum* and grassland. These plains constitute the largest proportion of arable land in the country.
- d) Rift valley scarp: made up of areas 500-600 masl, with steep slopes and rainfall of 800-1,000 mm. These have mostly woodland savanna vegetation. Although suitable for agriculture, these areas' steep slopes make cultivation and soil conservation difficult.
- e) Rift valley floor: comprising mostly the shores of Lake Malawi through Bwanje Valley and the Shire Valley, 30-500 masl and with mostly flat terrain with rainfall ranging from 800 to 1,500 mm. Although this zone is suitable for rain-fed agriculture, the short duration rains and high temperatures necessitate the use of supplementary irrigation for sustainable crop production.

TABLE 1: MALAWI PER CAPITA FOOD SUPPLY

ITEM	1964-66	1969-71	1972-74	1974-76	1976-78	1979-81	1982-84	1984-86	1986-88	1989-91	1991-93	1993-95	1995-97	1997-99	1999-01
POP ('000)	3975.0	4520.0	4938.0	5245.0	5567.0	6094.0	6698.0	7143.0	7625.0	9392.0	9754.0	9917.0	10229.0	10741.0	11303.0
KILOGRAMS / YEAR															
CEREALS (Ex. Beer)	183.5	191.8	191.9	188.1	183.6	173.0	175.3	175.3	162.4	154.8	149.4	155.2	154.9	149.8	147.8
STARCHY ROOTS	22.0	16.2	48.2	76.0	76.2	74.3	61.9	58.2	48.6	44.0	44.4	51.6	94.1	162.3	200.3
SWEETENERS	4.4	7.0	7.3	6.9	6.6	7.3	7.2	8.2	11.9	13.4	14.0	15.0	16.6	14.9	14.2
PULSES	16.3	19.8	20.3	20.8	20.2	18.5	17.8	17.1	16.2	14.1	14.2	12.8	12.3	11.7	11.3
NUTS & OIL SEEDS	17.1	15.6	15.2	11.1	12.5	11.1	11.9	10.6	8.1	1.9	1.4	1.2	1.3	1.8	3.2
VEGETABLES	29.0	29.9	31.3	31.2	30.4	29.6	28.6	27.5	26.3	24.3	23.4	23.4	22.4	21.3	20.6
FRUIT (Ex. Wine)	52.4	51.6	53.1	54.6	55.3	54.2	51.2	49.2	47.1	46.5	45.5	45.3	44.7	43.0	41.1
MEAT & OFFALS	4.3	5.5	5.4	5.4	5.6	5.8	5.8	5.2	5.2	4.8	5.0	4.9	5.4	5.4	5.4
EGGS	0.9	1.3	1.5	1.6	1.5	1.5	1.4	1.3	1.3	1.3	1.4	1.5	1.6	1.6	1.5
FISH & SEA FOOD	4.1	11.9	14.7	13.2	12.3	9.0	9.3	9.3	9.6	7.4	6.9	6.1	5.7	4.5	4.1
MILK (Ex. Butter)	4.4	5.5	5.4	5.8	7.5	9.6	9.0	8.8	7.0	6.1	6.0	4.7	4.0	4.0	3.7
OILS & FAT															
- VEGETABLE	1.2	1.3	1.5	1.5	1.6	1.8	1.6	1.8	1.4	2.0	2.1	2.3	2.6	2.5	2.2
- ANIMAL FAT	1.0	1.2	1.2	1.0	0.8	1.3	1.0	1.1	1.1	0.2	0.1	0.1	0.2	0.2	0.2
SPICES	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
STIMULANTS	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3
ALCOHOLIC BEV.	37.0	42.2	37.2	34.3	28.9	17.8	15.7	16.9	14.0	11.2	10.9	13.6	17.1	14.9	14.3
CALORIES (NUMBER/DAY)															
GRAND TOTAL	2228	2360	2425	2395	2395	2263	2232	2213	2097	1937	1887	1945	2046	2111	2165
VEGETABLE PROD	2164	2268	2328	2302	2264	2268	2143	2128	2013	1877	1826	1888	1986	2052	2107
ANIMAL PRODUCTS	64	93	98	93	91	95	88	86	84	60	61	57	60	59	58
CEREALS (Ex. Beer)	1592	1657	1650	1610	1568	1502	1513	1513	1404	1346	1294	1342	1341	1298	1284
STARCHY ROOTS	42	31	90	141	141	137	115	108	91	83	84	96	175	304	277
SWEETENERS	43	68	71	67	64	71	71	80	116	130	136	146	162	146	139
PULSES	153	186	191	196	190	174	167	160	152	133	133	120	115	110	106
NUTS & OIL SEEDS	167	153	149	109	122	109	116	104	79	25	18	15	16	24	42
VEGETABLES	18	18	19	19	18	18	17	17	16	15	15	14	14	13	13
FRUIT (Ex. Wine)	83	82	85	88	90	89	84	81	71	81	80	80	79	76	73

MEAT & OFFALS	28	34	33	32	33	33	34	29	30	29	30	30	34	35	35
EGGS	3	4	5	5	5	5	5	4	4	5	5	5	5	6	5
FISH & SEA FOOD	8	22	28	25	23	17	17	17	18	14	13	11	11	8	8
MILK (Ex. Butter)	7	10	9	11	13	14	13	13	11	10	11	8	7	7	6
OILS & FAT															
- VEGETABLE	29	31	35	36	39	44	39	42	35	48	50	56	64	61	33
- ANIMAL FAT	19	23	23	20	16	26	20	21	21	23	3	3	3	3	3
SPICES	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2
ALCOHOLIC BEV	32	38	35	34	30	22	20	21	41	15	15	17	19	17	17
PROTEINS (GRAMS/DAY)															
GRAND TOTAL	65.6	71.4	72.8	70.4	69.2	65.3	65.1	63.8	59.5	53.0	51.3	51.4	52.4	53.2	54.1
VEGETABLE PROD	62.1	65.0	65.5	63.5	62.5	59.2	59.0	58.0	53.8	48.1	46.5	46.9	48.0	49.2	50.2
ANIMAL PRODUCTS	3.4	6.4	7.2	6.8	6.8	6.1	6.1	5.8	5.7	4.9	4.8	4.4	4.4	4.1	3.9
CEREALS (Ex. Beer)	42.2	43.8	43.4	42.1	40.9	39.5	39.8	39.8	37.1	35.4	34.0	35.2	35.3	34.2	33.8
STARCHY ROOTS	0.7	0.6	1.4	2.1	2.1	2.0	1.8	1.7	1.5	1.5	1.5	1.6	2.8	5.2	6.2
PULSES	9.6	11.5	11.8	12.0	11.7	10.7	10.3	9.9	9.5	8.2	8.3	7.5	7.2	6.9	6.5
NUTS & OIL SEEDS	7.1	6.5	6.3	4.6	5.2	4.6	4.9	4.4	3.4	1.0	0.7	0.6	0.6	1.0	1.8
VEGETABLES	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.7
FRUIT (Ex. Wine)	0.9	0.9	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
MEAT & OFFALS	1.6	2.0	2.0	2.0	2.1	2.1	2.2	1.9	1.9	1.8	1.9	1.7	2.0	1.9	2.0
EGGS	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4
FISH & SEA FOOD	1.2	3.5	4.3	3.9	3.6	2.6	2.7	2.7	2.8	2.2	2.0	1.8	1.7	1.3	1.2
MILK (Ex. Butter)	0.4	0.5	0.5	0.5	0.7	0.9	0.8	0.8	0.8	0.5	0.5	0.4	0.3	0.4	0.3
OILS & FAT															
- VEGETABLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0
- ANIMAL FAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPICES	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1
STIMULANTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
ALCOHOLIC BEV.	0.5	0.6	0.5	0.5	0.4	0.2	0.2	0.2	0.6	0.1	0.1	0.2	0.2	0.2	0.2
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1
FATS (GRAMS/DAY)															
GRAND TOTAL	40.7	41.9	42.0	38.1	38.5	38.5	37.8	37.0	32.9	26.8	25.9	26.6	27.9	28.1	28.5
VEGETABLE PROD	35.4	35.0	35.0	31.4	32.2	31.4	31.4	30.7	26.7	22.8	21.8	22.6	23.6	23.7	24.2
ANIMAL PRODUCTS	5.2	6.9	7.0	6.7	6.3	7.1	6.4	6.3	6.2	4.0	4.1	4.0	4.3	4.4	4.0
CEREALS (Ex. Beer)	16.8	17.3	17.0	16.4	15.9	15.7	15.8	15.8	14.7	13.9	13.2	13.7	13.6	13.1	13.0
STARCHY ROOTS	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.6	0.7

PULSES	0.8	0.9	0.9	1.0	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6
NUTS & OIL SEEDS	13.6	12.5	12.1	8.9	10.0	8.9	9.5	8.5	6.5	2.0	1.5	1.2	1.3	2.0	3.4
VEGETABLES	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FRUIT (Ex. Wine)	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
MEAT & OFFALS	2.3	2.8	2.7	2.6	2.7	2.7	2.7	2.4	2.4	0.7	2.4	2.4	2.8	3.0	3.0
EGGS	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
FISH & SEA FOOD	0.3	0.8	1.0	0.9	0.8	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3
MILK (Ex. Butter)	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.3
OILS & FAT															
- VEGETABLE	3.3	3.5	4.0	4.1	4.4	5.0	5.0	4.8	4.0	5.5	5.7	6.3	7.2	6.9	6.0
- ANIMAL FAT	2.1	2.5	2.6	2.3	1.8	2.9	2.9	2.4	2.4	0.3	0.3	0.3	0.3	0.4	0.4
SPICES	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
STIMULANTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0

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Source: FAO Food Balance Sheet.

TABLE 2: MALAWI SUPPLY AND UTILIZATION OF CEREALS (1961-2001)

YEAR	POPN (‘000)	DOMESTIC SUPPLY ‘000 METRIC TONS					UTILIZATION AS FOOD ‘000 MT
		PRODN	IMPORTS	STOCK CHANGES	EXPORTS	TOTAL	
1961	3611	861	6	-60	14	794	557
1962	3697	898	7	-23	12	871	578
1963	3786	779	8	77	12	852	639
1964	3879	965	10	-33	15	927	701
1965	3975	949	20	20	3	985	725
1966	4073	1018	15	-23	48	963	730
1967	4176	1339	14	-160	95	1098	760
1968	4283	1166	14	75	89	1166	780
1969	4397	1140	17	20	49	1128	819
1961-69	3986	1013	12	-12	37	976	699
1970	4518	988	116	88	3	1189	866
1971	4646	1352	29	-121	14	1246	877
1972	4783	1438	28	-133	47	1286	905
1973	4928	1424	28	-100	54	1298	923
1974	5081	1421	18	-92	44	1304	931
1975	5244	1152	43	129	9	1315	947
1976	5419	1264	44	38	5	1340	974
1977	5607	1498	32	-148	12	1370	991
1978	5801	1512	16	-180	10	1337	1017
1979	5994	1450	24	-130	8	1335	1032
1970-79	5202	1350	38	-65	21	1302	946
1980	6183	1239	40	70	13	1335	1052
1981	6357	1296	83	-50	9	1320	1074
1982	6520	1470	29	-134	4	1361	1113
1983	6702	1396	23	70	121	1368	1160
1984	6937	1445	22	-14	130	1324	1140
1985	7248	1411	33	36	65	1415	1212
1986	7653	1351	19	141	87	1424	1211
1987	8133	1246	65	193	1	1503	1284
1988	8635	1481	135	8	4	1619	1378
1989	9086	1573	201	-71	4	1699	1451
1980-89	7345	1391	65	25	44	1437	1207
1990	9434	1399	162	132	5	1688	1439
1991	9656	1659	218	-102	3	1771	1473
1992	9774	681	461	477	4	1615	1365
1993	9833	2115	581	-805	14	1877	1534
1994	9899	1095	515	244	9	1844	1514
1995	10020	1761	307	-49	9	2010	1571
1996	10211	1919	177	-10	4	2082	1621
1997	10456	1328	173	500	4	1996	1562
1998	10739	1881	404	-200	6	2080	1600
1999	11030	2605	124	-600	6	2122	1665
1990-99	10105	1644	312	-41	6	1909	1534
2000	11308	2607	75	-500	11	2171	1646
2001	11572	1711	164	200	1	2074	1702
200-01	11440	2159	119	-150	6	2122	1674

Source: FAO Food Balance Sheet

3.2.2 Land frontier

Approximately 31% of the total land area is suitable for rain-fed agriculture, 32% is marginal and 37% is unsuitable. Malawi's agricultural challenge is therefore to convert some of the presently marginal and unsuitable land for sustainable cultivation. Malawi's National Environmental Action Plan (NEAP 1994) estimated that 49% of the country's land was under cultivation in 1990, an indication that 18% of the cultivation was being done on unsuitable or marginal land. It is possible that with increased pressure on the land more and more marginal land is being put to cultivation.

Table 3 presents the regional distribution of land in terms of suitability. The table reveals that under the current rain-fed conditions and traditional management i.e. using local varieties, manual labour, poor soil conservation, no fertilizer and poor extension services, the total suitable land is about 2.9 million ha. According to the National Research Council of Malawi, however, the amount of suitable land could almost double to 5.7 million ha with improvements in management including use of improved cultivars, fertilizers, extension services and pesticides with the conversion of some currently marginal and unsuitable lands for agricultural use.

Table 3: Present and potential land suitability by region (Thousands of Ha)

Quality of land	Northern Region		Central Region		Southern Region		Total	
	Tradition	Improved	Tradition	Improved	Tradition	Improved	Tradition	Improved
Suitable	624	1515	1659	2650	672	1577	2955	5742
%	7	16	18	28	7	17	31	61
Marginal	800	508	956	399	1208	745	2963	1652
%	9	5	10	4	13	8	31	18
Unsuitable	1284	684	1058	623	1169	728	3511	2035
%	14	7	11	7	12	8	37	22
Total	2707	2707	3673	3673	3047	3049	9429	9429
%	29	29	39	39	32	32	100	100

Source: NEAP (1994)

3.2.3 Land-man ratio

According to the 1998 Malawi Population and Housing Census, the population was 9.9 million indicating an intercensal growth rate from 1987 of 2.0% per year. As the population has been growing over the years, the population density has been increasing especially in the Southern part of the country. This has led to the diminishing amount of land for cultivation for smallholder farmers.

High population densities and growth have limited available land for farming in Malawi. For example in 1994, 72% of all smallholder farmers in Malawi cultivated less than one hectare, 6% more than 2 hectares and 41% less than 0.5 hectares. (NRCM 1998). We find that land pressures are forcing smallholder farmers to practice continuous cropping, often in cereal monoculture and to encroach marginal or unsuitable land. For instance, the National Environmental Action Plan (NEAP) indicates that although only 31% of the country's land was categorized as suitable for agricultural cultivation, in practice, 49% was under

cultivation in 1990. This indicates that 18% of the cultivation was being carried out on unsuitable or marginal land (EAD 1997)

Another contribution to the scarcity of land for smallholder farming has been the earlier government’s strategy of economic growth that relied heavily on estate agriculture. A lot of customary land was therefore turned from being customary land to estate land for the growing of high value crops such as tobacco.

3.3 Structures and Institutions

3.3.1 Economic structure

As indicated in the introduction, the backbone of the economy of the country is agriculture. It contributes about 35-40% of the GDP, 85-90% of the foreign exchange earnings, and 85% of the workforce. Agriculture also provides 60-70% of the inputs to the manufacturing sector and distribution industry (World Bank 1992; EAD 1998). According to Government’s Economic Reports since 1973, smallholder agriculture is, by far, the largest sub sector although the estate sector promisingly increased its share in agriculture in the 1970s (see Figure 1).

As already stated, the size of agriculture in the economy is very big and has been so for a long time. The dominance of the agriculture has survived the structural adjustment programs (Figure 2) to the extent that agricultural growth is still the only viable option for poverty reduction. In fact to underline the dominance of the agriculture sector the economy, the ‘thermometer’ for the economy has been the agriculture sector. Growth or lack thereof affects the growth of the entire economy (see Figure 3)

By extension the urbanization rate in Malawi is very low. On the basis of the three population censuses, the urbanization increased from 8 percent in 1977 to 10 percent in 1987 and most recently 12 percent. This collaborated by the low industrialization in the economy as manifested by small manufacturing sector, which averages 15 percent since 1973. See also Figure 3. However, it needs to be mentioned that the MSE sub-sector is growing. The latest estimate put its contribution at 15.6 percent of GDP.

Figure 1

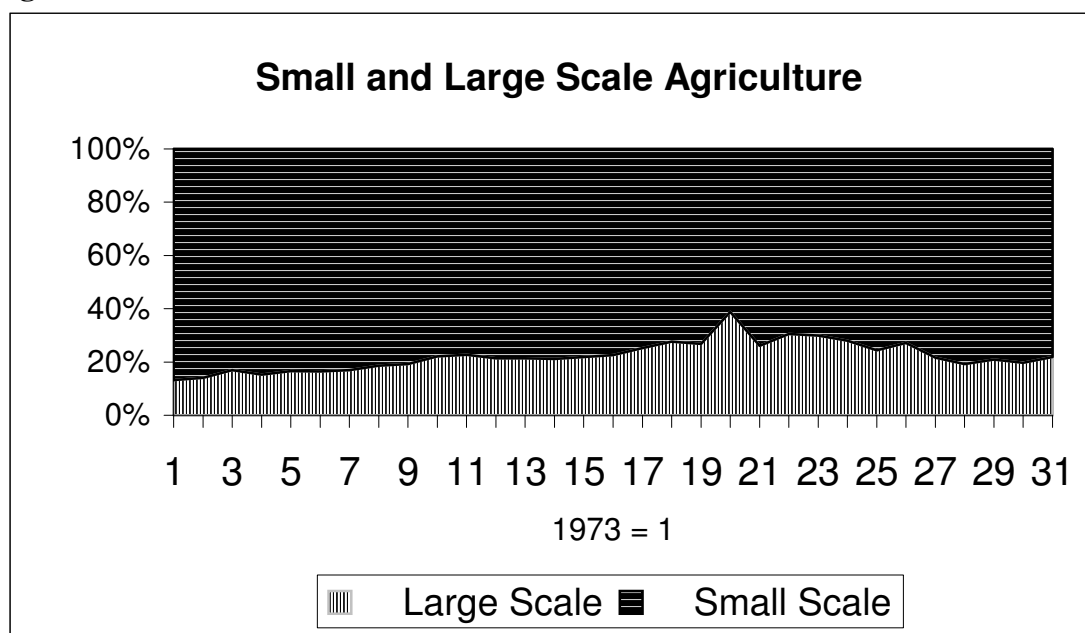


Figure 2

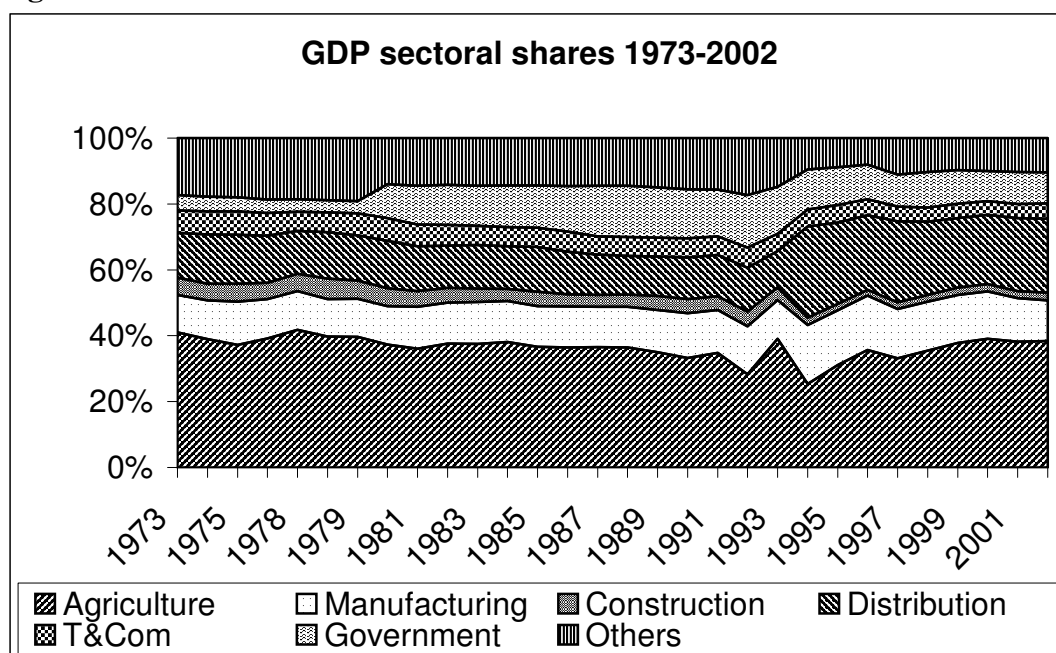
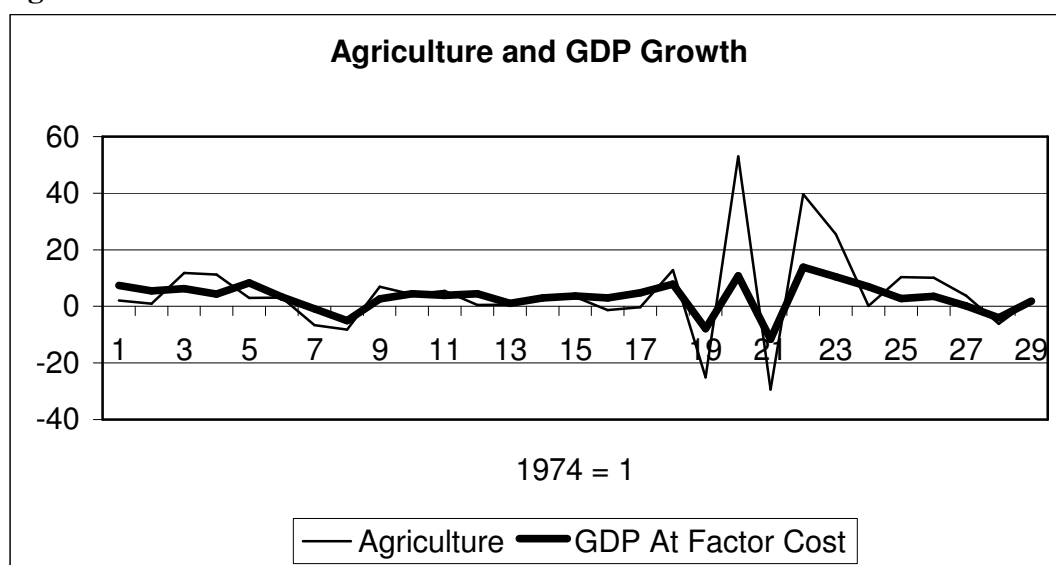


Figure 3



3.3.2 Agrarian structure

Land in Malawi is classified into three broad categories namely: public, private and customary land. Public land includes all land that is controlled, regulated and protected by the government, designated agents of the government or by a traditional authority to be used by the public at large (Land Policy Reform 1999). It also includes all land vested in government as a result of uncertain ownership, abandonment and land that is unsuitable for one reason or another. Because of this definition, unallocated customary land and land reserved as community woodlots, rivers, common dry seasons communal grazing areas can be regarded as public only to members of that community. Most commonly classified under this category is land under forest reserves, game parks, land for public construction (such as

roads and government buildings), land reserved for security purposes, tourism and agricultural schemes. Public land constitutes 21% of all the land in Malawi.

Access to public land is oftentimes restricted. For example, farming and residence is not allowed in forest reserves or game parks, hunting is prohibited and setting fire is punishable. However, surrounding communities are allowed to pick fruits, ants, dead wood (sometimes at a small fee) – all this is supposed to be done with prior knowledge and consent of the concerned authorities (Kadzandira 2002). The current thinking of the Malawi government is to move towards co-management of forests – but the process is going at a very slow pace (Land Policy Reform 1999). This is thought to incarcate community ownership spirit among populations surrounding such protected areas so that they can help in their management and protection.

Private land includes all land that is owned, held or occupied under freehold title or leasehold title or certificate of claim or which is registered as private under the Registered Land Act (Land Policy Reform 1999). This is land that is leased to individuals or companies from customary land and normally, leasehold period varies between 21 and 99 years depending on the use for which the land is required and the proposed investments. Leasehold implies that after the expiry of the lease agreement, the arrangement may not be renewed whereas in freehold – a person has unlimited access to that land throughout one's life and maybe transferred to one's descendants. Once declared private, the government has no specific control on the use and management of that land. Most of the estates fall in this category

Finally, customary land, which constitutes 65% of all the land in Malawi, includes all land that is held in trust by the President, who in turn has delegated this authority to local chiefs and is land that is held or occupied or used under customary law but does not include any public land (GoM 1999). Tenure of customary land revolves around a mixture of community rules of conduct, leadership codes and management principles relating to access and control of the land. By being customary and under the control of chiefs, this land is in essence not owned but held by various communities under the authority of their chiefs. In rural areas of Malawi “a chief without land is a chief without authority” (Land Policy Reform 1999). According to Sahn and Arulpragasam (1991:4), customary land in Malawi is viewed as belonging to the entire community: “... to the living, the dead, and the unborn”. Traditionally, community residents are supposed to get access to customary land through the village headperson who, as the custodian of the communal land has the right to allocate holdings. Through this channel, village residents attain occupation rights and usufruct rights only but rarely ownership rights. As such, customary land may therefore not alienated – namely assigned, charged or mortgaged but rights of use and occupation can be transferred between generations. However, according to Kadzandira (2002), the rules and regulations surrounding access, ownership and utilization of customary land are all changing with changing times. As opposed to the traditionally expected source of land (the village chiefs), families and kinship ties have become the major source of land for new couples as the land frontier for the chiefs becomes so restrictive due to land pressure. More and more families are converting their small customary landholdings to private status and cases of customary land having being sold out are common (Kadzandira 2002).

History and nature of agricultural dualism in Malawi

Scholastic thoughts regarding the pervasive poverty among most rural Malawians suggests that the poverty problem has been critically defined by the agricultural dualistic tenurial structures inherited from the colonial era and re-enforced by successive governments in over four decades of post-independence. The biasness of the rules and regulations applicable to

land use and access to productive means and markets have played a crucial role in determining both the aggregate economic performance and the livelihood of the pervasively poor rural population in the country.

Between the late 1890s and 1920, a lot of land was appropriated by the British settlers in the Shire Highlands in Southern Malawi for the cultivation of tea, tobacco, cotton and coffee. The initial appropriation of customary land was undertaken through treaties with local chiefs who continued to believe that they were allocating usufructuary rights alone as per customary law. Due to the increasing disputes between the white settlers and villagers, a formalized institution of a parallel set of land law was instituted in the 1890s. For the first time, the Governor was given the authority to issue certificates of claim as freehold or leasehold land (Sahn and Arulpragasam 1991). Estate ownership and privatization of land was introduced. This expanded into the central region in the 1930s mainly for the cultivation of burley tobacco. By 1937, the central region's estate tobacco production had increased to more than 7 million pounds and by 1941 more than 60,000 acres were appropriated as leasehold estate lands approximately 20 European farms in three central districts (Mkandawire and Phiri 1987 cited in Sahn and Arulpragasam 1991). The newly founded estates thus fulfilled the British objective of rapid and controlled export through the estate sub-sector.

In post-colonial Malawi, the position of the government reasserted the strategy of estate-led growth. Export-producing estates were reaffirmed as the engine to growth while the customary sector remained an attendant and mainly providing the former with cheap labour and food. Even after independence, Malawi never undertook any major land reform programme and this evidenced by the Land Act of 1967 which recognized and maintained the land tenure structures which existed during colonial times of: customary, private and public lands.

For along time, since the colonial days, the country's agricultural sector has been dualist in structure. It consists of the smallholder and the estate sub-sectors. The estate sub-sector consists of commercial estates on private land under freehold or leasehold tenure, while the smallholder sub-sector comprises some 2.86 million farm families (DfID 1998). It is the smallholder sector that accounts for more than 35% of the GDP and contributes 80% of total agricultural production, while the estate sector contributes 90% of the export trade (World Bank 1995).

According to UNICEF, it is women who play a vital role in farming comprising of 70% of the total full-time farmers in Malawi. Roughly 30% of the smallholder households are female headed, with this percentage increasing among the poorer categories of farmers. In terms of crops, the major food crops are maize, groundnuts, cassava, sweet potatoes, pulses and rice. Major exports include tobacco, tea, sugar, coffee, groundnuts cotton and macadamia nuts. Compared to crops, livestock production is relatively insignificant, comprising mostly of cattle, sheep, goats, pigs and chicken.

Since 1986, agricultural growth has averaged less than 1% per annum. Much of this growth has been confined to the estate sub-sector due to government's policies that favoured development of commercial farms. The dualist nature of agriculture ensured that growth benefited the estate sub-sector. As a result the contribution of the smallholder sub-sector to the GDP declined during this period.

Between 1970 and 1995, estate land grew from 79,000 ha to an estimated 1.2 million ha. As alluded to above, most of this was a direct conversion of customary land to leasehold land for the production of burley tobacco, which smallholder farmers were not, allowed to grow until 1990 when the policy was changed as part of SAP. Meanwhile, the smallholder sub-sector was increasingly being marginalized. In the 1990s, the poorest 40% of the

country's population earned only 7% of the national income compared with 19% in the 1960s.

3.3.3 Land tenure systems

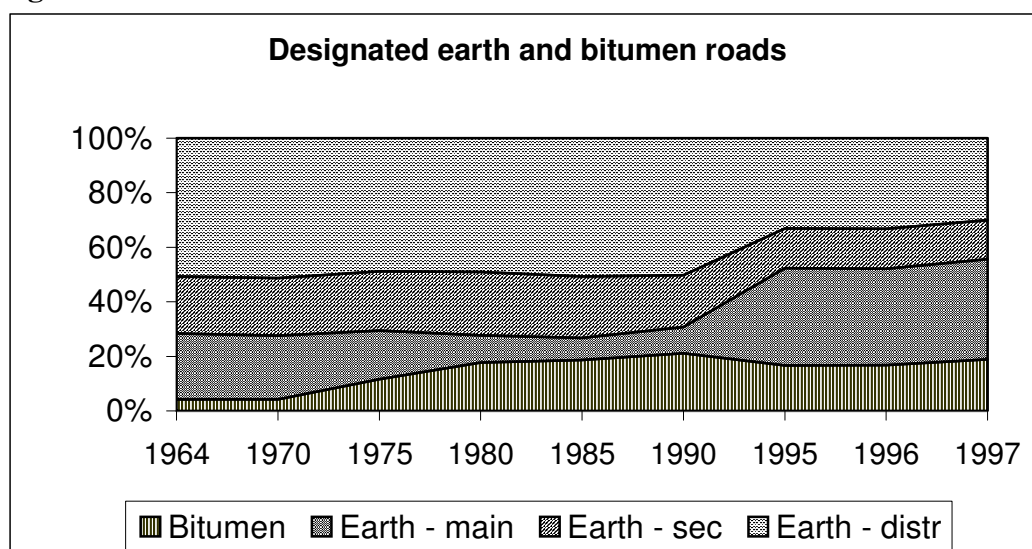
According to the new land policy, there are three official systems of land tenure in Malawi namely: *public*, *private* and *customary*. The *Public land* includes all land under the jurisdiction of the state, such as cities, forest and game reserves. *Private land* is held under private ownership leased to individuals or companies for a period of normally 99 years. *Customary land* is land under the jurisdiction of the Traditional Authorities, which they manage on behalf of the head of state who holds the land on trust for Malawians. "The land is viewed as common property and belonging to the entire community, to the living, the dead and unborn" (NLP 1964).

As alluded to above, early government agricultural development policy emphasised the development of the estate sub-sector that was on private land under leasehold or freehold. The smallholder sector has always been on customary land. The type of tenure one had also determined the types of crops that one could grow.

3.3.4 Transport and other infrastructure

Malawi's road and rail infrastructure and transport systems are poor and underdeveloped making the country uncompetitive in the region. There is lack of regular road maintenance and unreliable bridges make many rural areas inaccessible during the rainy season. Although key points in Malawi are connected by bitumen roads. However, most of the country is only accessed by earth roads – some are graveled while others are not. Figure 4 gives the picture.

Figure 4



The growth in bitumen road network was also reflected in the ratio of the investments in roads and bridges in gross fixed capital formation although the pattern is more of an up and down than steady increase (see Figure 5).

Rural transport has been linked to the growth of the agricultural development as well as rural development in general. The developments in the transport sector were mirrored in the

agricultural development. In the early years, there were relative high investments in roads and bridges as well as rural roads. Starting from the adjustment years (1980s), there was marked reduction in expenditure on agriculture and transport as can be seen from Figure 6.

Malawian producers and traders are heavily taxed on their cargo due to an inefficient transport system. In general, the cost of transport is very high in Malawi as compared to other countries in the region. Rural areas are particularly affected as traders factor in the transport charges in their rural prices. This is made worse by lack of other important infrastructure that are also important for the development of agriculture such as rural electrification, telecommunications, and storage facilities.

Figure 5

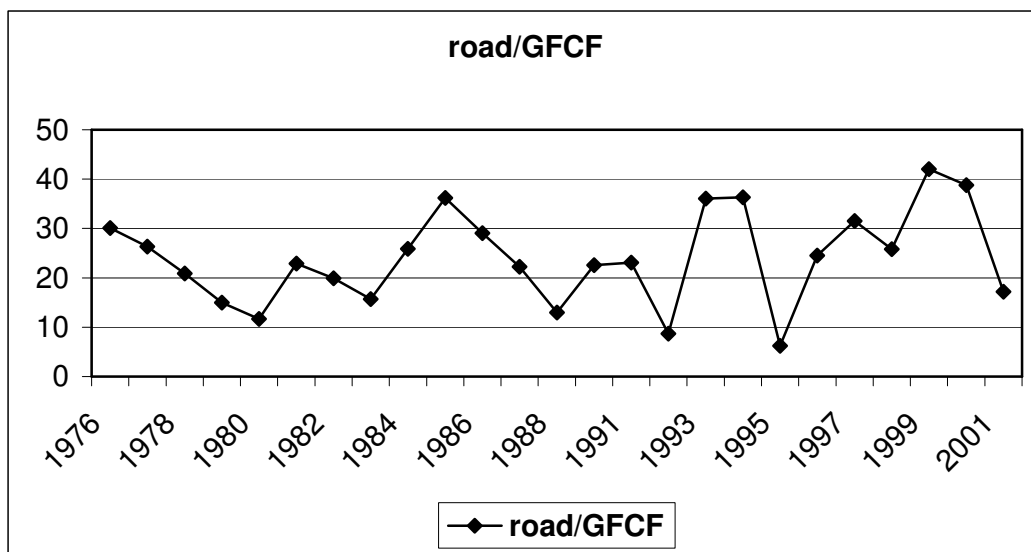
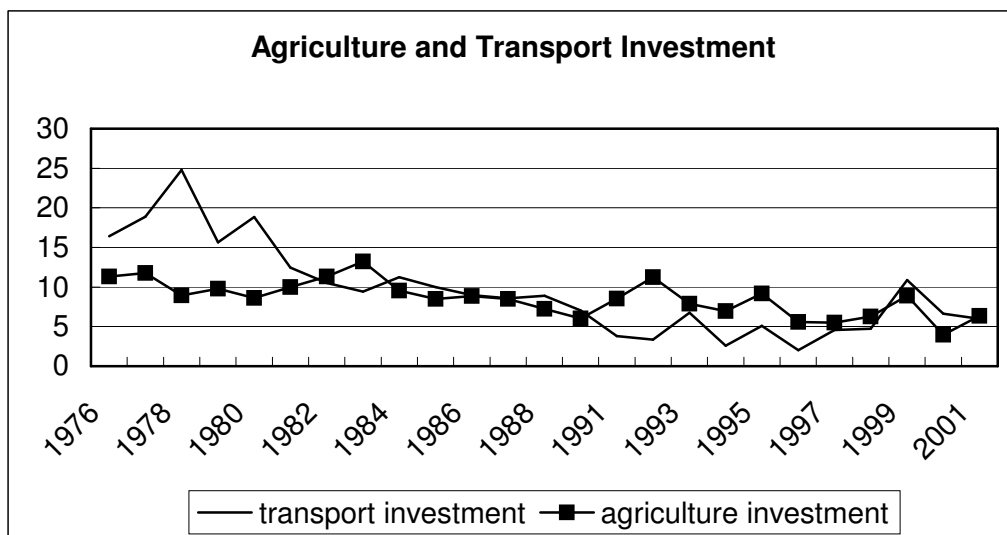


Figure 6



3.3.5 Availability of agricultural credit systems

Apart from issues surrounding labour supply and other external conditions such as weather, access to adequate land is a major determinant of how much a household can be able to produce and feed from it in a given year. In Malawi, where landholding sizes are very squeezed and the available land is gradually producing low because of over usage, intensification of the farming system (through use of high yielding varieties and inorganic fertiliser) provides a viable option for improving the productivity of the land, thereby leading to chances of achieving food self-sufficiency and to food security in the long run (Kadzandira 2001). The relevance of farm inputs such as inorganic fertiliser and improved hybrid varieties in improving production and productivity of smallholder food producers has been widely published (see Lele et al. 1989; Wiggins 1995; Msukwa 1994).

Regarding high yielding varieties and inorganic fertilisers, the major problem facing many small scale producers in the developing world is not how to use the inorganic fertilisers or the high yielding varieties, but rather, it is how to source these inputs (GoM 2001). The farmers have low incomes, have little or no annual savings, they are faced with high cost of living (housing, health, clothing and transport and communication), high input prices and unsupported market infrastructure. Provision of credit has been seen as an alternative viable option of assisting the poor resource farmers to access these high yielding varieties and inorganic fertilisers.

The Evolution of farm credit in Malawi

Smallholder agricultural credit in Malawi dates back to the colonial era although serious intervention in rural financial markets began ten years after independence in 1964. As in many developing countries, the provision of farm credit in Malawi was initially conceived as part of colonial economic policy that promoted commercial production to supply the colonial administration (Chirwa 1995; Msukwa 1994; Mawaya 1994). The stated objectives of the smallholder farm credit were to: provide access to agricultural inputs to resource poor households; enhance agricultural productivity of smallholder farmer; increase food production to ensure food security; increase cash crop production thereby improving living standards of the rural population; promote the adoption of improved agricultural technology; and enhance crop diversification.

Prior to independence, agricultural credit under the colonial regime targeted large-scale commercial farmers especially the political elites. This approach, which neglected the rural small-scale farm production, influenced post-independence rural credit policies because after independence, the government of Malawi adopted the approach although the clientele was broadened based on a master farmer approach. Due to problems of credit delivery and recovery, credit was only granted to large indigenous farmers (Chirwa 1995). It was until the late 1970s that seasonal farm credit was extended to small-scale farmers based on group/club lending approach. These groups were required to deposit 10% of the requirement up-front as part of the contractual agreement though this condition was rarely applied (Msukwa 1994).

At the time when the farm credit was extended to the small-scale farmers, the Ministry of Agriculture through the Agricultural Development Divisions (ADDs). In 1987/88 this extensive scheme was consolidated into the Smallholder Agricultural Credit Administration (SACA) the implications of which resulted in large volumes of moneys being lent out and a gradual reduction in the repayment rate (Table 4).

TABLE 4: CREDIT UPTAKE AND REPAYMENT RATES

Crop season	Value of loans in Million Kwacha	Repayment rate (%)
1968/69	0.043	100.00
1969/70	0.125	99.78
1970/71	0.276	99.83
1971/72	0.634	99.58
1972/73	0.666	99.00
1973/74	0.796	99.83
1974/75	1.210	98.70
1975/76	1.483	99.26
1976/77	1.666	98.26
1977/78	2.397	97.60
1978/79	2.867	98.49
1979/80	3.572	97.46
1980/81	5.679	97.58
1981/82	5.235	97.92
1982/83	8.337	97.19
1983/84	11.460	97.95
1984/85	15.555	96.67
1985/86	19.065	88.59
1986/87	18.283	92.18
1987/88	26.871	91.00
1988/89	41.478	79.90
1989/90	55.996	85.90
1990/91	76.313	86.50
1991/92	86.450	22.00
1992/93	144.330	15.59

Source: Msukwa et al. (1994), Appendix 4.1.

Through the years, SACA faced administrative and operational burdens which resulted into heavy financial losses and it was therefore found to be unsustainable. A decision was made to make the system more market oriented. In this setting, government would not have direct control but would provide policies and framework to create favourable environment for the private sector. The Field Assistants, who were administering the scheme, were also accused of falsely obtaining the input loans for their personal use and could not repay, the burden of which was pushed to the smallholders who had to repay or risk losing their property, being imprisoned or cancellation of further loans. Furthermore, the credit system was subjected to poor repayment crisis in 1992/93 (during the political transition from one party to multiparty politics) when it was rumoured that the credits were meant for drought relief and not for repayment. Noting the magnitude of the problems, the Malawi government, through the structural adjustment programme of the World Bank and IMF funding, decided to privatise SACA and to open up the credit financial market for other private players to participate in.

Since October 1994, SACA functions have been absorbed by the Malawi Rural Finance Company (MRFC), an autonomous trust/company deemed to have less political interference,

purposively, to improve its operations. Over the same period, a number of private lenders (formal and informal) which are providing farm inputs to smallholder farmers on credit and recover the cost at the end of each season either in cash or through a share of the crop yield have also emerged.

Several studies have been conducted to assess the relative impact of farm credit on the welfare of the credit borrowers vis-à-vis that of non-borrowers (see Zeller et al. 1996, 1997; Simtowe & Diagne 1998; Msukwa et al. 1994; Kadzandira 2001; and Diagne & Zeller 2001). Among the major findings from these studies are that: credit access is still very limited to very few farmers mainly to those households that have a diversified asset portfolios; participation in farm credit does not guarantee improved food production and raised incomes and that conditions surrounding the administration of farm credit remain cloudy, non-transparent and to the disadvantage of the borrowers.

From a study that was carried out in Lilongwe District in 2000, the findings indicated that although there was a great variation among the sampled households in their maize self-sufficiency levels, no such differences existed between the credit borrowers and non-borrowers (Kadzandira 2001). All groups together, 59 percent of the sampled households had depleted their maize by the time of survey, 18 percent were projected to deplete their maize between December 2000 and February 2001 while only 23 percent were projected to have maize until March of 2001, one month before next harvesting. When the two groups of farmers were compared, the findings did not indicate significant differences between them in their maize self-sufficiency levels. Sixty one percent of the non-borrowers had depleted their maize at the time of the survey compared to 58 percent of the borrowers. Twenty percent of the non-borrowers and 25 percent of the borrowers were projected to have maize until March, one month before next harvesting, respectively.

After controlling for size of land on which maize was grown in the 1999/2000 season, the findings still did not indicate differences in the maize self-sufficiency levels of the two groups of farmers. Among farmers who grew less than half a hectare of maize, 65 percent of the borrowers and 75 percent of the non borrowers had depleted their maize by the time of the survey ($P > 0.05$), whereas, 18 percent of borrowers and 10 percent of the non borrowers were projected to have maize until March, respectively. However, when farmers who grew maize on different land sizes were compared across land size categories, a great variation was observed as 70 percent of the farmers who grew maize on less than half of a hectare had depleted their maize by the time of the survey compared to 45 percent of the farmers who grew 1-2 hectares of maize (< 0.05). The findings did not show any relationship between sex of household head and level of maize self-sufficiency nor between number of people who were reported to provide agricultural labour in the households and level of maize sufficiency. In the latter case, this would be attributed to the fact that most of the households in the sample were land constrained such that even if they had abundant labour supply, they would not cultivate beyond what they did.

Agricultural financing is very limited leading to lack of access to credit for capital and other farm operations. The main problems in Malawi are collateral, access to short-term credit, low profitability of agricultural enterprises and unfavourable macro-economic environment. Many rural areas do not have micro-finance institutions. Although credit provision is one of the major determinants on the ability of farmers to increase crop productivity, the present situation in the country is that the banking system is inadequate in coverage and services especially in rural areas, banks are reluctant to lend to the agricultural sector due to past default, inherent risks of farming and lack of collateral, interest rates on loans is very high while interest on savings is low.

3.3.6 Access to markets

Until 1990/91 the Agricultural Development and Marketing Corporation (ADMARC) was a monopsony in the marketing of smallholder crops that were marketed. With market liberalization, this has changed to allow other players in the area. However, private trade is still in its infancy. As a result the market for agricultural produce is still not very competitive. With the transport infrastructure mentioned above, this is understandable.

Apart from the traditional export crops such as tobacco, tea, sugar, cotton, there is very little structured systems for the monitoring of the international markets in terms of availability of demand for products, prices offered etc. In addition, there is no properly organized systems for transferring information that may be available to smallholder farmers in any meaningful way to enable them use it in making their production decisions.

State intervention in the marketing of crops in Malawi can be traced back to the colonial era when in 1946 a Native Tobacco Board was established with the purpose of controlling tobacco production and marketing (Chirwa & Chilowa 1997). In 1938, the board started buying tobacco from farmers and selling at the auction floors. Over the years, the board underwent several transformations but still concerned with the tobacco industry. Due to the problems with food availability and pricing of maize in the late 1940s, two more statutory bodies were established: the Maize Control Board and the Cotton Control Board to give marketing support to maize and cotton farmers and for a long period of time, the price of maize was stabilized. After several years, the Maize Control Board was renamed Produce Marketing Board now with powers to buy and sell other crops as well.

In 1956, the African Tobacco Board (formerly Native Tobacco Board), the Produce Marketing Board and the Cotton Control Board were joined and formed one umbrella body in the name of Agricultural Production and Marketing Board with powers of stabilizing prices and the ensuring fair trading practices. However, in 1957 the government changed its approach and started implementing uniform pre-planting prices for all the crops. The board also underwent several transformations until 1971 when the Agricultural Development and Marketing Corporation (ADMARC) was established. Unlike the earlier boards that benefited mainly the well-off farmers and the colonial administrators, ADMARC was established to provide marketing services to smallholder farmers. Although ADMARC was established to lead smallholder marketing services, private trading existed even though the private traders were not officially recorded in national statistics (Chirwa & Chilowa 1997). Government was at the centre of smallholder agricultural produce pricing policy using pan-seasonal and pan-territorial commodity prices administered by ADMARC. These prices were adjusted and announced before the beginning of the growing season so that farmers could make informed decisions on the types of crops to grow and the prices acted as minimum floor prices and maximum consumer prices.

Over the years, ADMARC made a lot of investments in rural areas of Malawi and opened several depots where farmers brought their produce for sale and some people went to buy food and farm inputs. As such, ADMARC provided assured and reliable markets for smallholder outputs, provided credit on and subsidized the cost of supplying the inputs to members of farmer's clubs. However, the trading operations of ADMARC started facing problems in the late 1970s and early 1980s due to the general economic decline coupled with the civil war in neighbouring Mozambique and bad weather. As a result, ADMARC started making losses and could not survive on its own unless government pumped in more money.

In light of the economic crisis in the late 1970s and early 1980s, the Malawi government adopted the World Bank and IMF sponsored Structural Adjustment Programmes (SAPs) in 1981. At that time, problems with ADMARC were identified as including: overburdened with developmental activities, multiplicity of conflicting objectives and its diversification

into investment portfolio outside its original mandate. This led to reduction in its marketing functions. It was due to this finding that both the donors and the government decided to deregulate marketing activities in the smallholder sector and paved way formal private trading. ADMARC though continued to provide the floor and ceiling prices for produce and food products. In the period between 1985 and 1995, more reforms have been made including liberalization of the input market and the introduction of intermediate tobacco buyers.

The response of the private traders to liberalization was rather very weak in the first few years. For example, in 1988 only 387 private traders were licensed. The number rose to 948 in 1989 before declining by 43% in 1990. Since then, the number of registered private traders has been declining. According to Mkwezalamba (1989), Kaluwa (1992) and Chirwa et al. (2002) most private traders pulled out because they were making losses due to transport and storage problems. Chirwa et al. (2002) further reported that most rural areas with access difficulties remain unserved by private traders particularly in the remote parts of the northern region. In a study which was carried out to assess the impact of closing some ADMARC markets, Chirwa et al. (2002) reported that because of unreliability of the private traders and due to the fact that most of them have not taken up the supply of farm inputs (seed and fertilizer), some households have since abandoned some crops which they used to cultivate. Although the study identified some private trading in almost all the study sites, most of the trading was between farmers and unlicensed local vendors who move from household to household or from village to village announcing higher prices but buying produce at very low prices and tampering with scales.

In essence, the gap created by the dropping in the scale of ADMARC's marketing operations is being felt across the country particularly with reference to input supply, protective pricing, reliable markets for produce and source of food in times of need (Chirwa et al. 2002).

3.4 Political Preconditions

3.4.1 *Government Freedom/ability to direct agricultural development*

Prior to the SAPs that started in 1981, the government of Malawi had the freedom to make its own agricultural development plans. It is for this reason that immediately after independence the government followed a two pronged agricultural strategy focusing on getting economic growth from the estate sub-sector and relying on smallholders for food crop production.

When the economy started to experience a downturn in the early 1980s, the government approached the World Bank and International Monetary Fund for Structural Adjustment Loans. These came with conditionalities and from then on, the government has not had the freedom to direct agricultural development in the country as a lot of its policies have changed following the advice from the Bretton Woods Institutions.

3.4.2 *The role of donors and multilateral organizations in agriculture*

As indicated above the role of donors and multilateral organizations became much more pronounced when SAPs were initiated in the country. However, we can summarize their historical involvement in the agricultural sector as follows:

- Through their provision of development resources in the form of human, financial and technology.
- Promotion of policy formulation by government,
- Guiding the government on how resources can best be put to use

- Articulation of sector support areas through their wide experience at international level
- Influencing the government to make policy reforms when the need arises
- Promotion of transparency and accountability in the implementation of publicly funded projects.

Donors were particularly instrumental in introducing pricing policies that would be conducive to the production of smallholder crops for exports. Maize prices were specifically targeted since most smallholder farmers prioritize the production of maize. In some cases, smallholder farmers grew other crops, neglecting maize as a result of the prices offered in the other smallholder crops. Another aspect that affected the production of maize was the introduction of burley production to smallholders. While this was a positive development in terms of general poverty reduction, it was negative in terms of food security as some farmers reduced the production of maize in the hope that they would buy it from burley tobacco income. Unfortunately auction prices for burley have not been good enough to provide good income to farmers to buy sufficient maize.

3.4.3 Influence of international trade regimes on agricultural performance and development

So far Malawi does not have problems in exporting most of its produce. Since its export base is limited, Malawi had had no bidding export market. The normal restrictions in most international trade regimes have not restricted the country's exports. If anything, the EU and American markets have been open to Malawi under the EU/ACP Lome Conventions, AGOWA and other initiatives. The old (GATT) and current WTO initiatives are not binding as yet. All these combined have challenged the country to increase its agricultural production.

3.4.4 The role of nationalism and other ideological factors in government's policy towards food self-sufficiency

After independence in 1964, Malawi continued with the colonial legacy of a dualist approach to agricultural development. The smallholder sector was entrusted with the production of food for self-sufficiency at the household level.

In its Statement of Development Policies (1987-96), the objectives of Malawi's agricultural development were outlined as follows:

- Improving and maintaining food self-sufficiency
- Expanding and diversifying agricultural exports, while conserving natural resources
- Raising farm incomes and promoting economic growth; and improving social welfare

Clearly this is an indication that the government has emphasized self reliance in food and improving its economy. In fact, the high agriculture investment seen in figure 5 was in the smallholder sub sector. However, the sub sector was frustrated by pricing and production policies. Further, the investments in the sub sector were not in technology development but knowledge (extension services). The extension services were expensive yet their impact at the household level very minimal.

3.5 Community Organizations and Institutions

3.5.1 Land tenure

Under Customary land, the community residents get access to the land through the village head person. The village head is the custodian of communal land and has the right to allocate holdings. Through this channel, village residents attain occupational rights and usufruct

rights only. They are not vested with ownership rights. Customary land cannot therefore be alienated that is assigned, charged or mortgaged

The customary sector consists of both the matrilineal and patrilineal groups. In the matrilineal system land rights are traditionally passed along the female line members. The matrilineal system follows the uxorilocal system where the husband moves out to live with the wife's family in her village and permanently resides in the wife's village.

3.5.2 Gender

With high population, there is quite a considerable amount of human resources available for agricultural production. However, there is also considerable migration, especially of men, to urban centres in search of paid employment. This leaves children and women to tend the field, although most of the labour is unskilled. In addition, the majority of smallholder farmers are illiterate considering the national literacy average of 46%.

Studies have shown that labour constraints faced by smallholder farmers are particularly serious for households with less than one hectare headed by women. The access of women-headed households to improved technologies that can help them improve their productivity and crop processing is extremely limited. Such women also carry out the full range of home making and child rearing responsibilities. In addition, they have to fend for their households livelihoods through engaging in small-scale businesses at the same time they have to operate viable farm holdings of their own to produce their own food for the whole year.

Most rural women have problems accessing credit because of collateral. The majority of them are illiterate making it difficult for them to understand and sign agreement forms. By tradition, women have to attend to the sick whether their own children or relatives. This becomes more serious during the rainy season when cases of sicknesses rise, at the same time they have to attend their gardens. It is rare for mature women to leave their homes in search of off-farm employment because this is considered a man's activity. This denies women some steady higher incomes that they can invest in agricultural production.

3.5.3 Social structures

The country is multiethnic and different tribes have different social structures. There are patrilineal and matrilineal societies existing in the country. The Northern Region is predominantly patrilineal whereas the Central and Southern Region are predominantly matrilineal.

Traditional leadership is still respected with different levels of leaders. There are Paramount Chiefs, Traditional Authorities, Group Village Heads and Village Headmen. All these are hereditary positions and follow either the patrilineal or matrilineal descent depending on ethnic group. As explained above, land inheritance also depends on whether the society is matrilineal or patrilineal.

3.5.4 The role of farmer organizations, NGOs and CBOs in agriculture

These can be described as civil society and in Malawi; they comprise NGOs, individuals, unions, farmer associations and professional organizations. These are directly involved in agricultural related activities such as production activities and implementation of programmes and projects promoted by the public sector. Some of the several activities implemented by this sector include the following:

- Market infrastructure development and management and active involvement in input and output marketing.
- Development and management of irrigation infrastructure.
- Promotion of agricultural diversification.

- Active participation in agro-processing activities for value adding
- Taking initiatives for modernization and commercialization of subsistence or smallholder farming
- Undertaking labour productivity enhancement technologies.

4. ACTORS

4.1 State

4.1.1 *Level and content of state intervention in agriculture*

Investment in agriculture/food production and infrastructure

As already stated, there was heavy investment in the agriculture sector in the years prior to SAPs. This was mainly in smallholder agriculture. Again, the aim was to encourage small farmers grow more maize than they would require to enable them sale the surplus. In some years, as already discussed, there was surplus and the country could have national food sufficiency. In some years, this was not possible.

Likewise, there were massive investments in trunk and rural roads in the pre-adjustment period. Rural roads, especially district roads and village access roads were particularly targeted to improve access to markets by small farmers. The low allocation of resources in the adjustment period meant that the gravel and earth roads that were constructed during the earlier period deteriorated. As figures 4-6 indicates, not as much investments continued in infrastructure.

The state's role in aiding technology development and extension

The state has been heavily involved in technology development and extension through various public institutions. The following are the institutions that are involved in technology development.

(i) The Department of Agricultural Research and Technical Services (DARTS)

Under the Ministry of Agriculture and Irrigation, this is the largest technology development institution in Malawi. It is mandated to carry out applied research, provide technical and advisory services and make available information and technologies on a wide range of crops and livestock to the smallholder sector. Research is conducted at three main research stations, four experiment stations and eight sub-stations. The location of the stations is based on agro-ecological zones of the country. They have laboratory facilities for plant and soil analysis and soil microbiology. In addition, there is a seed services unit that conducts seed inspections and provides technical supervision to seed companies and farmers for the production of all seed classes beyond breeder seed.

The research programmes are organized along five commodity groups of:

- Cereals
- Livestock and pastures
- Legumes, fibres and oil seeds
- Soils and agricultural engineering
- Technical services, horticulture and plant protection.

In terms of its emphasis for research, DARTS has majored in the following areas:

- Development of high yielding, early maturing crop varieties that are drought tolerant as well as pest and disease tolerant

- Breeding and evaluation of animal breeds adaptable to local conditions
- Development of integrated pest management strategies for crops, and control measures for livestock diseases and parasites
- Development of technologies that support agricultural diversification
- Development of improved soil fertility management techniques
- Development of appropriate crop and livestock management practices including crop cultural practices and animal housing
- Development of appropriate agricultural machinery equipment for cultivation, irrigation, storage and processing.

(ii) Department of Animal Health and Industry (DAHI)

Mandated to conduct research in animal health including generation of epidemiological data on livestock diseases and diagnostic services for animal health and diseases.

(iii) Bunda College of Agriculture

This is an arm of the University of Malawi that is also involved in a large number of research projects in crop production. They focus on crop science, farm mechanization, processing and storage equipment.

(iv) Agricultural Policy Research Unit (APRU)

Based at Bunda College's Centre for Agricultural Research and Development (CARD), the unit focuses on research into various agricultural policies and their implications on socio-economic development. They have done various research projects on impact of SAPs in the agricultural sector.

(v) The Centre for Social Research (CSR)

Established in 1979 and based at Chancellor College, the CSR conducts sociological and economic research in various disciplines including food policy, food security, gender and development, social and cultural aspects of the rural population.

(vi) Agricultural Research and Extension Trust (ARET)

This was established with the sole mandate of conducting research and providing extension services on the production of all types of tobacco.

(vii) International Agricultural Research Centres (IARCs)

A large number of international research institutions have their research centres in Malawi. They normally run regional programmes in crop research benefiting national programmes from the technologies developed. They include the SADC/ICRISAT centre at Chitedze Research Station that conducts research on groundnuts, pigeon peas and sorghum, the CIAT centre also at Chitedze conducts research on beans; and IITA/ESSARN that conducts research on cassava and sweet potatoes; and the ICRAF centre at Makoka that conducts research in agroforestry and soil fertility technologies.

Agricultural technologies are transferred to farmers through two main channels. These are:

(i) The Department of Agricultural Extension and Training (DAET)

This is a large and elaborate set-up in the Ministry of Agriculture and Irrigation responsible for transfer of technologies and training of farmers. The whole country was divided into 8 Agricultural Development Divisions (ADDs) based on agro-ecological aspects.

This set-up has enabled the establishment of a network of extension staff in rural areas, with the responsibility of organizing and training farmers and also disseminating technologies. It is under this set-up that the Department provides a link between research and end-users.

(ii) **Non-Governmental Organizations**

Various NGOs ranging from development projects to charity organizations, having a focus on the rural population, are involved in the transfer of crop production technologies through their activities. Some examples include, Action Aid and World Vision International who have extensive seed production projects involving smallholder farmers that aim at bringing improved seed to rural areas. Others are involved in the introduction and encouragement of various cropping systems that promote sustainable utilization of natural resources, e.g. the intercropping of soyabeans with maize and use of leguminous alley cropping.

Price Policy

As in most African countries, Malawi started by controlling both input and output prices in the agricultural sector.

With SAPs however, there has been a gradual shift in this policy since 1981 when the country got its first Structural Adjustment Loan. There is now full liberalization in the input market and only maize's price is now partially controlled for the Agricultural Development and Marketing Corporation.

4.1.2 Government policy towards the private sector

Government recognizes that the private sector involvement in economic activities is a basis for sustainable and equitable growth and development. As such the current policy is to develop the private sector through direct promotion of its development and privatization of public enterprises. The privatization policy seeks to diminish the public enterprise sector through broader participation of the Malawi private sector. However, the privatization process has not been run smoothly enough to achieve the intended objectives.

4.1.3 Government's attitude and policies/legislation towards NGOs and CBOs

Currently the government has an NGO Act which aims to provide for the rights and obligations of NGOs in Malawi to promote the development and values of a strong independent civil society, to provide for the establishment, functions and powers of the NGOs Board of Malawi and the right of the public to access information with respect to registered organizations. This is a new law that came into effect in 2001. However, NGOs have been there in Malawi since independence but they have mushroomed after democratization almost a decade ago.

4.2 Market/Private Sector

4.2.1 Size and structure of the private sector

The current situation as far as the private sector is concerned is that the sector is still in a poor state and the majority of Malawians are still ill equipped financially, professionally and culturally to successfully manage businesses. It has been assumed, however, that the private sector in Malawi has the requisite business acumen and that the economic environment is conducive to investment. This assumption, unfortunately, is not realistic.

Nevertheless, there is some private sector activity going on in the country. For example in 1992 an estimated one million people (out of a total labour force of about four million) were

engaged in micro enterprises and small and medium scale enterprises. Over 80% of the workers were engaged in about 550,000 micro enterprises of fewer than 5 workers – mostly self-employed people, sometimes assisted by a family member. Some 13% were in about 19,000 small enterprises of 5-20 workers and 6% in about 1,800 medium scale enterprises of 20 – 100 workers. They were engaged primarily in trade (52%) and manufacturing (43%, largely beer brewing and grass, cane and bamboo products). They were overwhelmingly (90%) in rural areas, and over half were home based. Women owned 46% of the enterprises (over half those in manufacturing) and accounted for 39% of all those employed. Most micro enterprise is part-time, supplementing income from own-farm and other agricultural employment.

With liberalization, there has been a mushrooming of vending businesses, especially in urban areas. As already indicated above, Medium and Small Enterprises (MSEs) contribute about 15.6 percent of GDP.

4.2.2 *The role played by the private sector in agriculture*

Before SAPs, the role of the private sector in agriculture was very limited as the state took the major role in fostering the direction of agricultural development in the country. Apart from big private enterprises such as OPTICHEM and Norsk Hydro who were involved in provision of agricultural inputs to estates, the only other players in the sector were small private trading individuals whose activities were illegal. The other segments that can be termed private and was involved in agriculture were estate owners who were mostly connected to the ruling elite.

After SAPs, the private sector was welcomed to take a role in agriculture in the country. The private sector is now fully engaged in agricultural trading for example in inputs and output. This has been a gradual process to liberalize the sector since the first SAP in 1981.

4.2.3 *Development of factor markets*

Factor markets in land, labour and capital are in their infancy stage at the moment. Because of the land tenure system, smallholder farms under customary land do not have title to land and can therefore not commercially transfer that land. However, with the new land policy this is going to change because there are proposals to have smallholder have title to their land. The only land that is commercially transferable is private land under leasehold or freehold.

In labour the government wages policy is to use minimum wages for rural and urban areas, with rural areas having a lower wage.

The financial sector is mostly concentrated in urban centres and there are very limited financial institutions in rural areas. The Malawi Rural Finance Company that evolved from the Smallholder Agricultural Credit Administration is the only financial institution available in all the rural areas of the country.

4.3 Farmers

In this section we focus on the effects at the farm level of macro level policies and conditions

4.3.1 *The facilitation of state intervention*

Looking at the productivity of the agricultural sector in Malawi, one would be compelled to say that state intervention has not been that facilitating in improving productivity in the agricultural sector.

However, the state has played a major role in introducing and promoting agricultural technologies such as high yielding varieties and fertilizers to the farming community. It has also been revising its policies periodically to ensure increases in productivity at the farm level. The impact of these policies takes time and after full liberalization and decontrol, farmers now have various incentives to improve their productivity

4.3.2 Analysis of state intervention policies

Historically, the state policies have moved from intervention to incentives. After independence there was more intervention in the agricultural sector. For example, the state controlled who produced what, how much they sold it at, and where they sold what produce.

When SAPs came in, the state started to remove some of its intervention by reviewing the whole sector and minimizing its role in the sector. We saw decontrol of prices, and liberalization of marketing and production.

4.3.3 Provision of technologies

Technologies that have so far been made available to farmers include the following:

- Use of improved crop varieties
- Use of soil fertility improving technologies such as organic and inorganic fertilizers, soil conservation practices, use of improved cultural practices, pest and disease control, and use of improved cropping systems.
- Diversification of agricultural production e.g. mushroom production, spices and cut flowers, seed production schemes, production of crops using residual moisture in *dambos* (meadows).
- Agroforestry technologies: addressing problems of low soil fertility, fuelwood shortages, soil erosion, crop diversification, and environmental degradation.
- Farm mechanization technologies e.g. animal drawn cultivation equipment, small-scale water pumping equipment, grain dehullers and grain treating machines; bicycle trailers, animal drawn carts and hand carts.

4.3.4 Access to production factors

Capital and Credit

Before the country attained multi-party politics in 1993, credit was provided to smallholder farmers through a group credit approach. At that time there was a good repayment record and had grown into a big organization before it collapsed in 1994 due to the political changes that were taking place at that time. The re-payment discipline of the farmers was severely reduced as a result of political interference. In addition to political interference, the increasing fertilizer prices and the devaluation of the MK led to the collapse of the credit system in 1994.

The Malawi Rural Finance Company (MRFC) replaced the collapsed SACA. MRFC is independent of political interference, and follows market prices in the administration of its credit scheme. This has created a problem of preventing many smallholder farmers from borrowing, as the interest rates are high. In addition, most smallholder farmers have no collateral that can enable them access credit from most lending institutions. The problem is compounded by the fact that medium term credit that is used for purchasing farm implements is a lot more expensive than seasonal credit.

However, some NGOs and church organizations offer credit to farmers on better terms than those of MRFC. These are helping out in the areas where they are operating.

Technology and Extension

There are many problems that constrain resource poor farmers in Malawi to adopt technologies. These problems include poverty and non-participation of the end-users in technology development and transfer mechanism. Previously the extension method used by DAET was the training and visit system of extension. In this system, farmers were organized in groups and were periodically meeting at a Block centre to learn and acquire new extension messages on agriculture and natural resources. Not so many technologies were adopted by using this methodology and the system was revised in 2000 in the new policy on Agricultural Extension, which now focuses on demand driven extension services.

Labour

In Malawi, agricultural productivity is often reduced due to loss of timeliness in farm operations and labour shortages during peak periods. Most agricultural hand operations are inefficient and require high labour input unless appropriate machinery is used. It is not surprising, therefore, that smallholder farmers especially female-headed households as alluded to earlier on have labour shortages and this affects their productivity.

Farm implements

Current agricultural mechanization in the smallholder sub-sector has remained at a low level. Human power still dominates the smallholder sub-sector with the hand hoe being the main implement. Other tools include axes and machetes, with knapsack sprayers used in cotton and vegetable production. Only about 13% of the smallholder farmers have access to draught animal power (DAP) technology that includes a mould board plough, a ridger, a groundnut lifter, a cart, and to a very limited level, a cultivator (CODA 1995). The number of farmers that have access to DAP has declined due to a number of constraints such as reduction in farm sizes and a significant decline in animal populations.

Mostly it is large-scale farmers who have access to the equipment and capital that use motorized equipment such as power tillers and tractors.

Output markets

Smallholder farmers continue to face problems in marketing their produce. Lack of access to markets and market information and poor marketing of both inputs and produce continue to adversely affect agricultural productivity. At the moment, ADMARC stopped operating a large number of their markets for the sale of inputs as well as purchase of produce. This has reduced access to markets by farmers. After liberalization, private traders came in but these normally practice in centres that are far away from most smallholders due to infrastructure problems. Furthermore, there is no organized market information system that links producers with buyers.

4.3.5 *The role of farmers associations, NGOs, and CBOs*

Various NGOs ranging from development projects to charity organizations, having a focus on the rural population, are involved in the transfer of crop production technologies through their activities. Some examples include, Action Aid and World Vision International who have extensive seed production projects involving smallholder farmers that aim at bringing improved seed to rural areas. Others are involved in the introduction and encouragement of various cropping systems that promote sustainable utilization of natural resources, e.g. the intercropping of soya beans with maize and use of leguminous alley cropping.

4.3.6 *Changes in the profitability of food production*

Food production is profitable only in a bad year i.e. when there are shortages due to drought and or mismanagement of the SGR. This is especially the case for maize since the price of maize is still controlled by the government.

5. NATIONAL LEVEL EFFECTS OF INTENSIFICATION

This section will analyze the effects of intensification on various aspects of agricultural production.

5.2 Effects of Intensification at the National Level

5.2.1 *Aggregate productivity*

As outlined in the various sections above, the productivity of Malawi's agricultural sector is not showing any significant improvements for the various reasons cited. The other major reason affecting productivity is that Malawi relies heavily on rain-fed agriculture. As such yields per hectare have been greatly influenced by rainfall during the growing season and the crop variety used. Yields of both local maize and hybrids have been very low during the drought years such as 1991/92, 1993/94 and 2001/02. However, generally yield of hybrids are much higher than yields of local maize in any given year. The rate at which smallholder farmers substitute hybrids for local maize does have an impact on maize production nationally.

5.2.2 *Aggregate changes in cropping patterns*

Various factors affect cropping patterns in the country. As indicated, there is reduction in the size of farmland for many households due to population pressure. As a result more and more households especially in the Southern Region are planting more crops in a single field compared to their counterparts in the other regions. There is also more use of residual moistures in various places for winter cropping in order to boost production for food security reasons.

5.2.3 *Aggregate area changes under food crops (harvested area)*

There are indications of smallholder farmers going into marginal land to increase their food production. The growing of winter crops also means that the amount of land under food crops is increasing.

5.2.4 *Gross staple food crop production*

There are shifts in the types of staple food crops being produced in Malawi. The late 1990s to early 2000s have seen increases in the amount of tuber crops being harvested as reflected in national crop estimates. This is because of the promotion of diversification into other food types such as cassava and sweet potatoes both by government and NGOs and donor agencies.

5.2.5 *Trends in aggregate use of high-yielding inputs*

High yielding input use depends to a greater extent on availability of seeds and costs. The use of high yielding varieties normally goes up with specific government programmes. For example in 1999/2000, 2000/01 there was a high use of hybrids due to the Starter Pack Programme, which was targeted at resource poor farmers. The programme is being replaced in recent years by the Targeted Input Programme reducing the number of beneficiaries and, therefore, those who would use high yielding varieties. However, sometimes these

programmes have reduced the available seed supply on the market, thereby affecting those who would commercially want to buy the seeds on the market.

5.2.6 Trends in area under irrigation

With the introduction of other irrigation technologies for small-scale farmers the amount of land being put under irrigation has been rising in recent years and is expected to increase. The number of treadle pumps being purchased is also on the increase in the country. The government is also emphasizing on irrigation as one way of increasing food production to avert food shortages. It has recently put in place an irrigation policy that is expected to facilitate the promotion of irrigation agriculture in the country.

5.2.7 National food self-sufficiency

The data that we have shows that the level of food self-sufficiency is still waning as the required per capita calorie intake for good health has never been achieved since the 1970s. However, in some years especially when we had wholesale starter pack programmes, Malawi has managed to produce enough to the extent of exporting some surplus. However at the household level this is always a different story.

5.2.8 Net import/export of staple food including food aid

Malawi is still a net importer of staple food. This has been caused by its reliance on rain-fed agriculture to the extent that in drought years the country has to rely on food aid. Unfortunately, the number of drought years has been increasing in recent years most probably due to climate change.

6. CONCLUSIONS

From these findings, we can make the following conclusion about intensification of staple food production in Malawi:

1. In all periods of Pre-SAP, SAP and post-SAP national level intensification of staple food production has not yet taken place. This is particularly so if we look at the productivity of the majority of the smallholder farmers in Malawi. The only type of intensification that is taking place now is due to population pressure and farmers planting more crops on the same piece of land especially in the Southern part of the country where population densities are very high.
2. For Malawi, an objective need for intensification came in the late 1970s to early 1980s because that is when the country stopped being self-sufficient in food. Unfortunately, this was also the time that the country started implementing SAPs, which initially had negative impacts on productivity. Now the country has reached a critical stage to consider intensification very seriously.
3. Since the pre-SAP years the state has interpreted the need for national food self-sufficiency as increase in own production through increasing productivity. The only problem is that implementation of its policies has always been a problem. This has been especially the case during the SAP years where the sequencing of reforms has not helped matters.
4. For Malawi the most important pre-condition for explaining the coming about of intensification is population pressure. The population growth rate has been higher than the growth in production in staple food crops. The other precondition is that of turning

- more land for cash crop production as the amounts of customary land that was transferred to leasehold for cash crop production increased especially during the pre-SAP period.
5. The most important explanation for this documented macro-level outcome of the process studies is poverty of the majority of Malawi's rural population that came about mainly because of the pre-SAP policy of having a dualist approach to agricultural development. The sector that was relied on to produce food for the country was not supported instead the ruling policies were oppressing the smallholder sector and this created long-term impacts whose solutions will take a long time of reforms to come about.
 6. The state policies have played a key role in bringing about intensification where it has started to take place. The population has only been reacting to those policies in order to ensure its own survival.
 7. During the pre-SAP period, the state's intervention was very facilitating because farmers were well organized in clubs to get loans and extension. This was possible because it was politically organized in a single party state. The reforms that were taking place during the SAP years disturbed the peasantry as they had been used to a different set-up. There were therefore lots of uncertainties with the reforms. In the post-SAP period, there are a lot of incentives to encourage growth in the agricultural sector.
 8. The only inducement of market actors has come up during the SAP period due to the various reforms that have taken place to provide incentives for the development of the private sector's involvement in agriculture and agriculture-related activities.
 9. The state's policy during the pre-SAP period was more to increase productivity in the large-scale agriculture or estate sector in order to bring about economic growth from agriculture exports. During that time the small-scale sector was not supported very well for its development. The implementation of the SAPs was meant to change this approach to the extent that towards the end of the SAP period growth in the small-scale sector was higher than that in the estate sector. In the post-SAP period the policy of the government is to ensure the growth of both sectors more so for the small-scale sector to grow for broad based growth of the economy and for poverty reduction purposes.
 10. Nationalism has played a role in all the periods. In the pre-SAP period and soon after independence, the policy was to show that the country was indeed independent and should not rely on foreign countries for its food needs. This was especially the case because the country is land-locked and for a long time there was war in neighbouring Mozambique, which provides access to sea routes. During the SAP years, the state's policy was to rectify its economic woes by restructuring its own economy to enable it improve and improve the welfare of its citizenry. During the post-SAP period which came in simultaneously with democracy the state's policy is to ensure that the nation should rely on its own resources to reduce the poverty of its citizens with assistance from foreign donors and governments.

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