2. AGRICULTURE IN MALAWI

2.1. PRESENT CHARACTERISTICS

Agriculture is the major economic activity in Malawi, accounting for about 40 % of the gross domestic product (GDP) and employing more than 80 % of the economically active rural population (GoM, 2004). Furthermore, agriculture is the major source of foreign exchange earnings, amounting to about 89 % of the total. Tobacco accounts for around 60 %, with tea and sugar contributing about 10 % each. The agricultural sector has a major impact on the rest of the economy. Agriculture relies mainly on rain-fed crop production; formally or semi-formally irrigated land is only 28,000 hectares. Livestock contributes about 7 % of GDP. Cattle, goats, sheep, pigs and chickens are the major livestock providing for both subsistence and commercial requirements. Production and consumption of animal products are very low. Exports of animals and animal products are virtually non-existent (Campher *et al.,* 2003). About half the dairy products consumed in Malawi are imported. As cropping extends further into grazing areas, the numbers of ruminant livestock, especially cattle, continue to decrease.

Malawi has one of the highest population densities in sub-Saharan Africa with an area of arable land per capita of 0.23 hectare, compared to 0.86 in Zambia and 0.4 in sub-Saharan Africa as a whole (World Bank, 2003). Other countries on the continent with similar population densities have two rainy seasons (which help spread harvests over the year and thus reduce the effect of the 'hungry season') rather than the single rainy season of Malawi (which, except where irrigation is used, means only one major harvest is possible each year).

Maize is the staple food and the dominant crop. It occupies 60 % of cultivated land (GoM, 2003). Most of the maize is grown by smallholders and consists of low-yielding local (unimproved) varieties[1]. Maize is produced using human labour with hand-held hoes, and in loose rotations with groundnut and sunflower. Increasingly, maize is grown on the same land year after year, often sparsely intercropped with bean, groundnut, cowpea or pumpkin. Other important smallholder crops produced include rice, groundnut, soyabean and root crops. Most of these are for local consumption, although there is some trade in rice and groundnut. In the Southern Region, where the average population density reaches 215 persons per square kilometre, maize is the main crop in nearly 90 % of the area and contributes 80 % of daily food calories. Some 60 % of rural households (and 41 % of the total population) produce less than they need to feed themselves through the year. Carr (1994) attributes the popularity of maize to its efficiency as a per hectare calorie producer compared to the other available food plants. As land availability declines, the efficiency of calorie production per hectare becomes of greater importance to farmers. Thus the food security of resource-poor households is critically dependent on the productivity and sustainability of maize-based cropping systems. However, are soil fertility declines, maize tend to be replaced by cassava.

2.1.1. Structure of the agricultural sector

Agricultural land in Malawi is divided between the customary (smallholder) sector, which occupies 6.5 million hectare, and the estate (large scale) sector (1.2 million hectare of private land

[1] For very good reasons: results from an extensive programme of on-farm demonstrations conducted over four seasons in the major maize growing areas of Malawi showed that, even on relatively fertile soils, improved maize varieties gave a very modest yield increase if grown without fertiliser (Jones and Wendt, 1995; Conroy and Kumwenda, 1995; Zambezi *et al*, 1993).

held as leasehold or freehold estate). The estate subsector produces mostly tobacco, tea and sugar. The smallholder sub sector is predominantly subsistence and involves about 1.9 million farm families under customary land. The smallholder farmers supplement their subsistence farming by growing a few cash crops. Of the available agricultural land, at most, about 70 % is considered suitable for rain-fed farming. Recent survey data indicates that the average land holding in Malawi is about one hectare (Table 1). Almost three of four farmers cultivate less than this, and 41 % cultivate less than 0.5 hectare (GoM, 2003) – too small at current levels of productivity and farming systems to achieve food security.

Table 1. Average land holding by region

Average Land Holding (ha)			
	Poor	Non-Poor	All
Northern	1.1	1.2	1.1
Central	1.1	1.3	1.2
Southern	0.71	0.83	0.76
Malawi	0.91	1.9	0.99

Source: GoM, 2000

The major change that has occurred in the smallholder production over the past decade is crop diversification in response to government policies and market liberalisation. Apart from the increase in smallholder tobacco production (burley) that took place in the late 1980s to 1990s, the area grown to groundnut and pulses has increased. In addition, there has been a shift towards drought tolerant crops such as cassava, sweet potato, millet and sorghum (Figure 1). Production of cassava and sweet potato in particular have increased dramatically in the past decade, contributing to household food security as well as cash incomes among the smallholder population. On the other hand, conversion from maize to cassava cultivation is a sign that soils are depleted of plant nutrients. Replacement of maize by cassava in people's diet also implies a decline in their protein intake. But still, maize continues to be the dominant crop among smallholders.

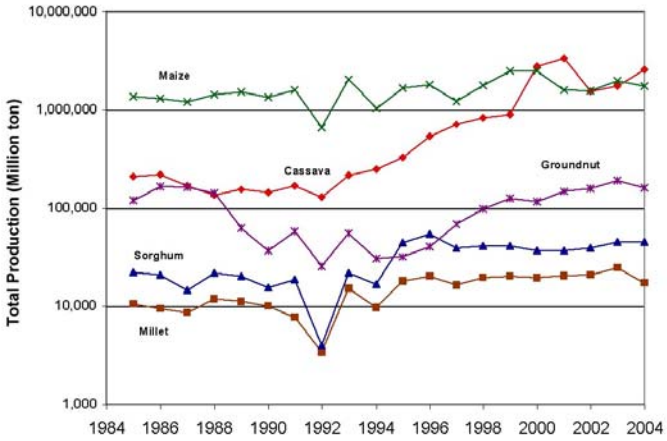


Figure 1. Production of major crops in Malawi 1985-2004 (data for sweet potato not available; note the logarithmic scale; FAO).

Highest population density—and consequently a large proportion of the poor farmers—is found in the highlands of the Central and Southern Region (Figure 2). In these areas, people enjoy relatively good rains and comfortable temperatures. The distribution of poverty is also linked to the size of landholdings. The lowest yields are generally obtained in the most densely populated highlands.

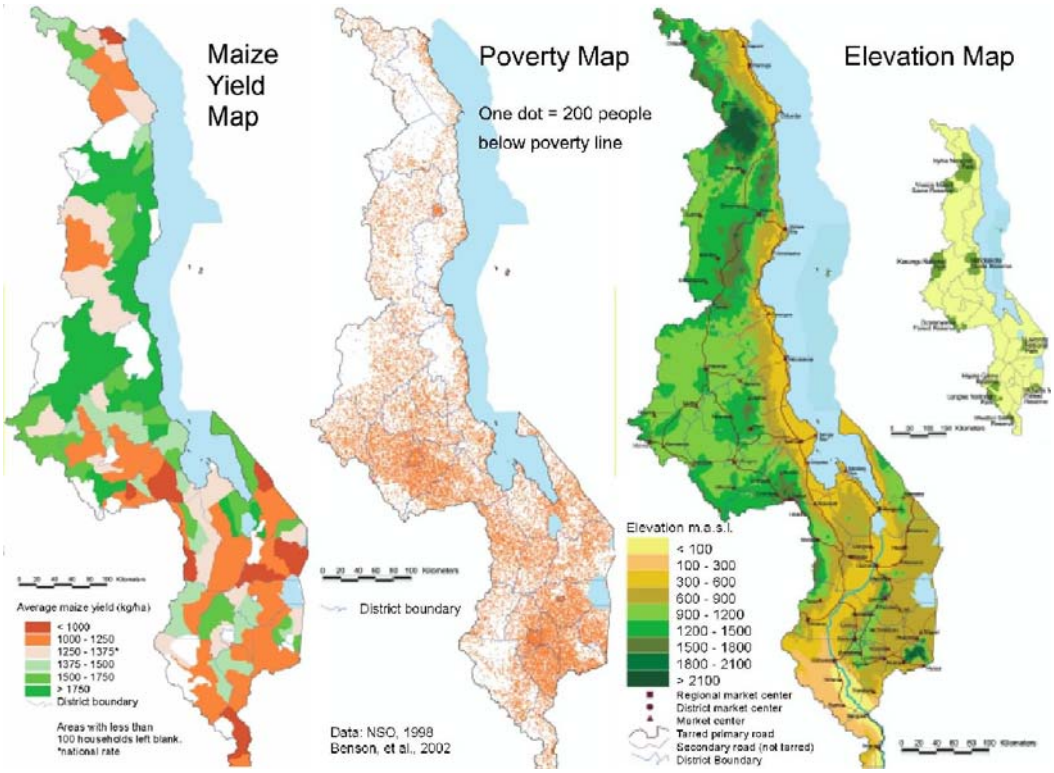


Figure 2. Maize yield and poverty density compared to topography (Benson, 2002).

2.1.2. Economic performance

The annual growth rates of GDP have fluctuated considerably over the period from 1995-2003. Growth from 1998 has been insufficient to match population increases, especially from the year 2000 (Table 2). The main source of income is largely from the agricultural sector, which has experienced sharp declines particularly in 2001 and 2002 (Table 3). Prior to 2000, the agricultural sector contributed a third or more to annual growth, drought caused a sharp decline in 2001 and there was a weak recovery in 2002 and 2003. This increase was mainly from the smallholder subsector, which continues to outperform the estate subsector (which has remained stagnant for the past decade).

Table 2. Economic performance of Malawi.

	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*
GDP annual growth rate (1994 factor cost) (%)		13.8	10.0	6.6	1.1	3.5	0.2	-4.1	1.8	4.4 (Nov)
Average annual inflation (%)	34.7	83.1	37.7	9.1	29.8	44.8	29.6	22.9	14.8	10.7
Interest rates (lending) (%)	31.0	47.3	45.3	28.3	37.7	53.6	53.6			
Average exchange rate (MWK to USD)	8.7	15.3	15.3	16.4	31.1	46	80	67.3	87.3	109

Source: www.nso.malawi.net

Table 3. Share of GDP from the agricultural sector 1997-2003.

	1997	1998	1999	2000	2001	2002	2003
Smallholders	24.1	28.0	30.7	30.5	31.5	30.0	32.6
Large-scale/estates	9.0	7.7	7.3	8.7	7.2	8.9	7.2
Agricultural sector	33.1	35.7	38.0	39.2	38.7	39.0	39.8

Source: Economic Report 2002 (for 1997–2000) and Malawi Economic Growth Strategy 2004 (2001-04).

However, smallholder production is characterised by low productivity due to a number of problems such as small landholdings, inadequate inputs, unfavourable prices, lack of access to credit, unfavourable internal and external terms of trade, external shocks such as drought and floods, and other structural bottlenecks. As such, growth was minimal in relation to population growth, which translates to reduced food production per capita, food insecurity and low incomes among the smallholder population and indeed the nation.

The low growth rate in agriculture also constrains growth in other sectors as Malawi's economy depends on agriculture. It is therefore not surprising that poverty is widespread, with about 65 % of Malawians living below the poverty line (GoM, 2000a). Within this group, about 29 % were living in extreme poverty in 1998; their daily consumption was less than 60 % of the poverty line, which averaged USD 0.40. The 1998 Integrated Household Survey demonstrated that the majority of the poor are in the rural areas, and have subsistence agriculture as their main source of income. However, the most important source of income was not from agricultural sales, but cash income from casual labour. This fact justifies the importance of safety net programmes such as public works, food for work or cash for agricultural labour.

It is clear that economic growth in Malawi depends on the performance of the agricultural sector. At present, the source of growth in the agricultural sector is smallholder production. Transformation of the agricultural sector is therefore central to creating the necessary change that will drive the Malawi economy. The following chapters will show that a number of options and strategies are already in place, and a number of technologies have been promoted. But, the challenge, it seems, is more than a technology problem, development requires us to do things differently, to do 'business unusual'. We should not expect magic solutions but be sure that certain opportunities can work based on social and geographical advantages.

2.2 THE PERENNIAL FOOD CRISIS

Many Malawians express nostalgia for the settled times of the 1970s. In this period, according to popular myth, food was always available, there was little crime, and it was a time of optimism and progress. In this section, we examine how the policies of this period laid the ground for the major problem that afflicts Malawi today – what we term a perennial food crisis. Every year, it seems, food is either short or desperately short. Food insecurity at the national and at the household level dominates the development of policy. Fear of national food shortages paralyses action at many levels. The effects are often contradictory and counterproductive.

2.2.1. Land, agricultural productivity, and land policy

Understanding the evolution of land policy in Malawi is crucial to understanding food insecurity. The first President of the Republic of Malawi, Dr. Hastings Kamuzu Banda had a vision for Malawi of an economy based on labour intensive agricultural exports produced by large-scale "modern" farms (notably tobacco). Smallholder agriculture was perceived as 'backward'. Land

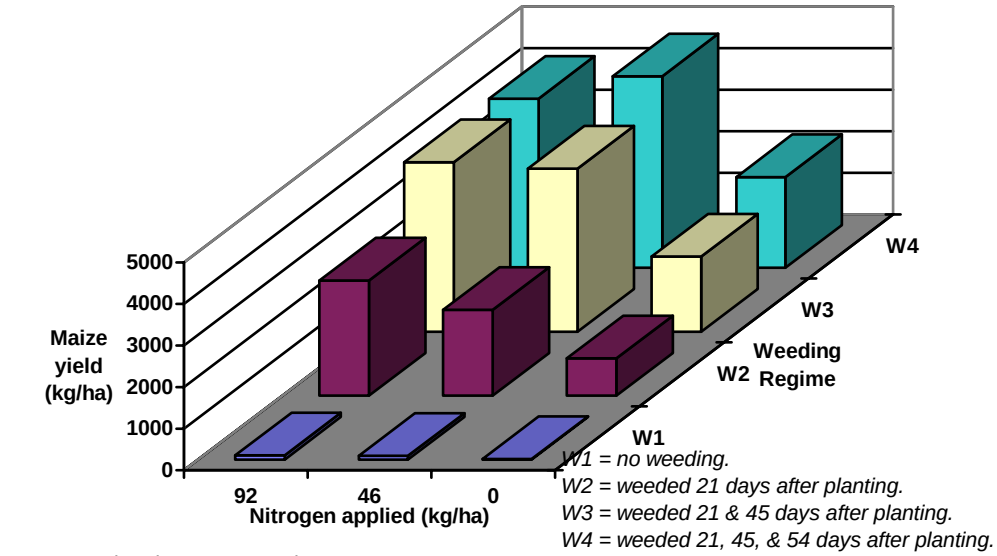
policy was deliberately aimed at stimulating the growth of the large-scale estate sector. A significant amount of land was alienated from the smallholder to the estate sector. The resources needed to finance the expansion of the estate sector were extracted from the smallholder sector via implicit taxation of smallholder export crops. By the end of the 1980s, the amount of land transferred from the customary sector to the estate sector was in excess of 700,000 hectare (Cross, 2002). The principal beneficiaries were members of the political elite, party functionaries and richer smallholders, many of whom failed to use the land effectively.

The effects of this policy on smallholders have been devastating. The transfer of land from, and increasing population pressure within, the smallholder sector increased the scarcity of land in that sector and contributed to the continual fragmentation of plots. Surprisingly, as land availability per capita in Malawi has fallen, the outcome has not been agricultural intensification but rather a long-term decline in soil fertility - resulting in land degradation, falling production per unit area of land, and the consequent impoverishment of majority of the population. Many smallholder land holdings are too small to support the families that live on them and some rural households are effectively landless. In desperation to gain access to land, smallholders increasingly cultivate land that is not suitable for farming (such as erosion prone steep slopes). Forest cover has declined from 26 % to 19 % of the total land area over the past 25 years with attendant problems associated with the management of watersheds (World Bank, 2003). The World Bank (2003) suggests that harvested crops annually remove a net 75,000 ton of soil nutrients, causing further environmental degradation, and compromising long-term family livelihoods and food security.

2.2.2. The central role of moisture, soil fertility, and labour productivity

Maize is the preferred staple food of most Malawians, and low productivity maize cropping, based around traditional (but low yielding) varieties, dominates the agricultural economy. Adopting improved maize seed, without also taking on important complementary crop husbandry changes, does not provide the productivity boost needed to pull many farm families out of poverty. Weeds are a problem when there is insufficient labour for timely weeding. Moisture is often a major constraining factor. Even relatively short dry spells during the rainy season can have devastating effects on maize yields. The seeds have to be watered, and the crop managed, if the farmer is to gain the substantial benefits that fertiliser and improved seeds can provide.

Depletion of soil fertility is well documented as a major cause of low per capita food production in sub-Saharan Africa. Smallholders across the continent have been extracting nutrients from their soils consistently for the past 30 years or more. The low levels of nitrogen in Malawian soils are particularly alarming. But just providing fertiliser (or rebuilding soil fertility) is also not sufficient to reduce poverty and food insecurity. The interaction between weeding and effects of fertiliser use (Figure 3) is an illustration of the complexity of cropping systems. If the crop is not weeded at all (W1), even with very high rates of fertiliser, the crop yields dismally. In contrast, weeding twice gives significantly more yield with less fertiliser (W3 and 46 kg of nitrogen) than weeding only once and double the fertiliser (W2 and 96 kg of nitrogen). In the case of severe water stress, yields will, of course, be minimal regardless of other inputs. In fact, high rates of fertiliser application will exacerbate the negative effect of water stress since fertilisers are salts. As Byerlee *et al.* (1994) note, what smallholders in Africa need (as importantly as improved seeds) are the complementary technologies for maintaining soil fertility, conserving moisture, and increasing labour productivity. Farmers physically weakened by acute food shortage and poor health in the cropping season will, however, find well-meant agronomic recommendations of limited benefit.



Source: Kabambe & Kumwenda, 1995

Figure 3. Interaction between weeding and fertiliser use in maize.

2.2.3. Climate change and food insecurity

Droughts and floods are overriding causes of acute food shortage in Malawi (Clay *et al*., 2003). With an economy largely based on rainfed agriculture, Malawi's national product, food security and poverty are closely linked to the last season weather conditions (Figure 4). Repeated droughts tend to transform the country's economic policy away from long-term economic growth to crisis management. It takes time for shocks to fade and life to return to normal.

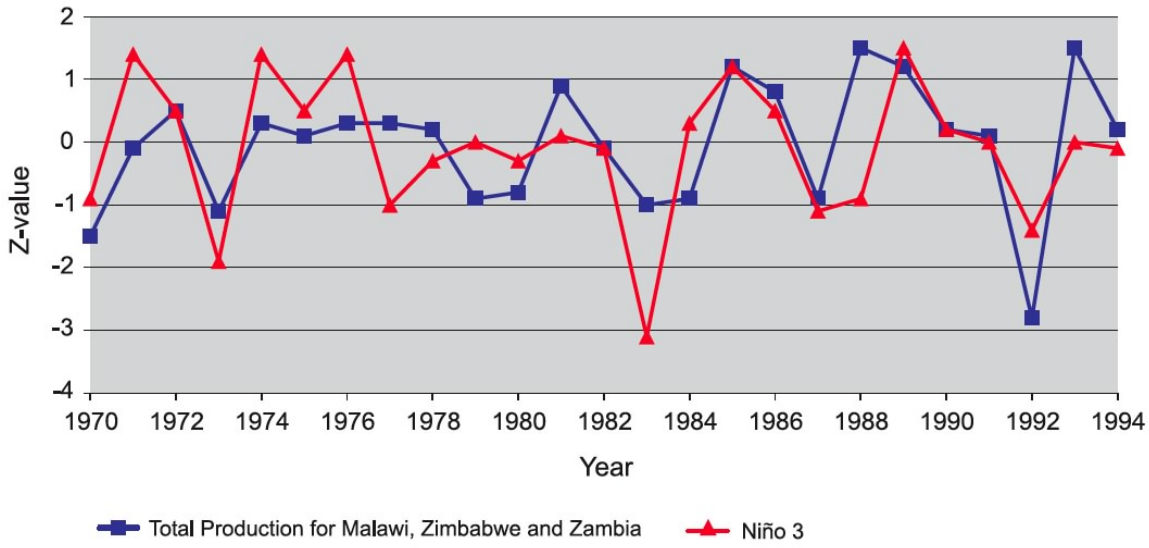


Figure 4. Relationship between agricultural production and Niño 3 in southern Africa (the z-values express the number of standard deviations from the mean) (AfDB, undated).

Predicted climate change may affect agriculture through:

- Changes in temperature and precipitation

- Changes in soil moisture and fertility
- Changes in the length of growing season
- Increased occurrence of extreme climatic conditions

Global climate models predict that the sum of changes in world food production most likely will be small. There is a general agreement, however, that climate change may lead to substantial reductions in agricultural productivity in developing countries (McGuigan *et al*., 2002). Poor countries are particularly vulnerable because most of their agriculture is based on seasonal rainfall, and they have very few structures to attenuate the effects of drought and flood.

Although global climate change is generally expected to lead to more precipitation, much of the water will not fall where it is mostly needed. Dry to semi-dry regions are likely to suffer from reduced rainfall and increased evaporation. Climate change will therefore add to the existing problems of land degradation.

It is important to note that water availability is not always included in global simulations of agricultural productivity since irrigation adaptation has been taken for granted. This illustrates the need to include water resources in the vulnerability assessments in developing countries.

Several meteorological services in Africa issue seasonal climate forecasts. So far, seasonal predictions have not yet been communicated to farmers to enable them to take the necessary precautions for either wet or dry cropping seasons. Thus, opportunities exist for governments to reduce vulnerability using climate forecasts (Amissah-Arthur, 2003). However, one should not overestimate farmers' ability to counteract the impacts of drought and flood.

Precipitation can increase during warm (El Niño) or cold (La Niña) events in some areas, whereas in others, drought might be more likely. In southern Africa, droughts tend to happen in the December to March rainy season after onset of an El Niño event (Thomson *et al*., 2003). Climate models suggest a modest drying over large parts of southern Africa. Intermittent droughts and floods, however, are likely to become more frequent and severe. Since climate change is expected to exacerbate climatic extremes, there is a definite need to address climate-related vulnerability in the context of food security and development strategies.

In some African countries, as much as 80 % of the variability in agricultural production is caused by variability in weather alone (Sivakumar, 2005). In sub-Saharan Africa, the area under irrigation is very limited and crop failure and hunger are well known. Farming in Malawi will remain a risky business since the essential input, water, is highly variable.

2.2.4. The downward spiral into poverty

Lack of cash dominates the choices available to the typical Malawian farmer. The two major costs faced by many smallholders in producing food are labour and the inputs of seed and fertiliser (including home produced organic fertilisers such as composts, which are highly labour intensive). Labour may be provided by the family, it may be bought in from other farmers, and it may be sold to others for food or cash. Often the household is headed by a woman, commonly with small children. The older children may be at school, or have moved to town. If she is fortunate, her husband and children living away will send cash or kind to help support the rural household. If not, she will be attempting to support herself and her children from what she can grow or sell. She will be living on a piece of land that has been cultivated many times before. What inherent fertility was

there has long been extracted from the soil. Weeds, including the devastating *striga*[2], will have established themselves and will compete strongly with whatever she plants for light, water, and soil nutrients.

If she has access to a hectare or more of land, she may produce enough to feed herself and her family if her health is good and the weather favourable. But the start of the rains brings diarrhoea and malaria. Often, illness of herself or her children will result in her planting her crop late. With a poor rainy season her crop may fail. The odds are that in some, if not many, years, she will find herself unable to produce enough food for her family's needs. She will need to go out to work for neighbouring farmers who will then feed or pay her (and any children that work with her) for the days that she puts in. Typically this work will be planting, weeding, or fertilising the neighbour's crop - which means that her own is left unplanted, unweeded, and unfertilised until later in the season. Late planting and poor weeding mean a poor harvest and once again she finds herself without food before the crop comes in. This is the downward spiral that creates much of Malawi's poverty.

While there are technically sound solutions to many of the problems faced by smallholders, all too often these turn out to be financially or managerially unsound. Access to fertiliser has been the cause of innumerable debates and discussions on improving smallholder productivity in Malawi. It is evident that:

- the low level of fertiliser use in Malawi (well below soil nutrient replacement needs) is, in part, caused by the cost of fertiliser,
- fertiliser is the most costly cash input used by the typical Malawi smallholder, and,
- its price (in local terms) has been rising sharply.

But an expensive input can be profitable if used efficiently. In fact, farmers in Malawi have been receiving advice on the use of fertiliser that actively discourages its use. Fertiliser recommendations have ignored soil and climatic variations found in smallholder farming areas (which we know are high), are incompatible with farmer resources (which we know are severely limited), or are inefficient, (which drastically affect the profitability of fertiliser use). An economic analysis of fertiliser policy in Malawi (see HIID, 1994) concluded, at the lower local prices prevailing then, that improvements in fertiliser use efficiency could substantially outweigh feasible price changes in either fertiliser or maize in making fertiliser economically attractive to smallholders. Research on farmers' fields in Malawi shows that, at farmers' levels of fertiliser application, with improved timing and application methods the maize response to nitrogen can be increased from 15 to 20 kg grain per kg N applied for unimproved maize and from 17.4 to 25 for hybrid. But, despite the very real costs of using this critical input inefficiently, little has been done to improve efficiency of fertiliser use. An illustration of the cost of this neglect is shown by the work of Piha (1993) in Zimbabwe. Piha designed a simple, practical, and farmer friendly system to apply fertiliser based on rainfall patterns and nutrient need. Over a five year period, Piha's system gave 25-42 % more yield and 21-41 % more profit than did the existing fertiliser recommendations.

[2] *Striga spp*. is a species of parasitic weeds of maize, sorghum, and related crops. The plant attaches itself to the root system of the host plant and lives off the nutrients that should be going to make grain. *Striga spp.* will produce millions of seeds each year if allowed to flower and the seeds last for many years in the soil before germinating. It is particularly problematic on low fertility soils and can almost wipe out the crop. Control of the parasite is exceptionally difficult.

A crucial component of any programme to develop Malawian agriculture would thus be to improve the efficiency and the returns to using inputs such as high-yielding seed and fertiliser. That would involve improved timeliness of supply of the optimal seed varieties and nutrient mixes. And it would involve improved recommendations on locally adapted use of the inputs and other farming practices.

Even if fertiliser use can be very profitable, the risk of rain failure makes it a risky investment. Crops that have been planted at the right time, and that have received optimal levels of nutrients are more likely to yield even when there is a dry spell. In the case of severe drought, however, farmers may lose most of their investment in fertiliser.

2.2.5. Land degradation

The majority of the Malawian people have settled in the highlands to benefit from the relatively high rainfall and pleasant temperatures. Removal of permanent vegetation, erosion and depletion of plant nutrients leave this situation critically unsustainable. Low crop production per unit area requires that large parts of the landscape must be cultivated to provide a minimum of food for the people. In the Southern Region, 55 % of the cultivated land is 'not suitable for cultivation' under present methods of land use (based on data from NEAP, 2005). In the Central and Northern Regions, the proportion is somewhat smaller (Table 4). The main reason for land being classified as 'not suitable for cultivation' is steep slope. Expansion of agriculture into marginal and unsuitable land is a major threat to Malawi's sustainability both with respect to land and water resources. Soil erosion and water runoff is therefore, rampant. Slash-and-burn agriculture commonly practiced in the hills are particularly damaging for the environment (Figure 5). Soil and plant nutrients are quickly washed away and the landscape is left bare (Figure 6).

Figure 5. Slash-and-burn agriculture in northern Malawi ruins the environment (photo: K. Esser).

Soil and water conservation projects have generally had little or limited effect. Decades of conservation efforts in Ethiopia, for instance, give little reason for optimism. Conservation farming requires additional time and labour, which poor farmers cannot afford. On the other hand, area

closure (total elimination of cropping and grazing) have generally resulted in high recovery rates in drylands.

Figure 6. Hills have been deforested, rainwater disappears quickly and the landscape is left dry (northern Malawi; photo: K. Esser).

Unfortunately, construction of roads in the uplands and improved market contact, tend to exacerbate the problem. Unless properly drained, roads tend to capture runoff and concentrate water in spots where gullies form (Figure 7). From an environmental standpoint, inaccessibility is, in fact, the best assurance for land conservation.

Figure 7. Erosion caused by the construction of a low-cost feeder road in the hills of northern Malawi (photo: K. Esser).

Table 4. Areas and proportions of suitable and unsuitable land used for cultivation (based on data from NEAP, 2005).

Region	Cultivated land (incl. short fallow) (ha)	Land suitable for cultivation (ha)	Cultivated land not suitable for cultivation (ha)	Proportion of cultivated land not suitable (%)
Northern	902,900	623,500	279,400	31
Central	2,171,850	1,658,750	513,100	24
Southern	1,503,500	672,250	831,250	55
Total	**4,578,500**	**2,954,500**	**1,624,000**	**35**

Long-term agricultural planning should envisage a future situation where crops are grown only on suitable land and permanent vegetation covers land not suitable for cultivation. The best-suited cropland can yield about ten times the present average crop production per unit area. Assuming two cropping seasons based on irrigation on the best croplands, 80-90 % of the present hill slopes could be converted from eroding cropland to permanent vegetation without reduction in the total national food production. Converting highlands to permanent vegetation would reduce runoff significantly, reduce sediment transport, increase land surface evaporation and maybe improve rainfall.

Cultivation of sloping lands followed by soil erosion has led to rapid sedimentation in Lake Malawi. Destruction of spawning areas as a result of sedimentation is believed to be a partial reason for the rapid reduction in fish catches in the lake, and consequently, loss of protein in people's diet.

For obvious practical reasons, large-scale changes in land use are not possible within a short time frame. However, long-term planning should keep in mind that substantial and extensive land use changes will be absolutely necessary to stabilize the landscape while maintaining food production. The necessary land use changes needed to end excessive erosion and restore the hydrology will not be possible without major investments in science-based, highly productive agriculture located in the most suitable areas where the rate of erosion is low and water is available for double cropping seasons. Continued cropping on non-suitable land coupled with donor funded conservation projects (repair work) will not work. Soil and water conservation projects in marginal areas tend to fail shortly after the project funding ends despite great promises in project proposals.

Figure 8. Songwe River in northern Malawi is largely unutilized (photo: K. Esser).

2.2.6. Structural adjustments

In the first years following Independence in the early 1960s, Malawi's economic growth was largely based on two key, and interrelated, factors:

- tobacco production by the estate (large-scale) sector, and,
- the introduction of fertilised hybrid maize (using subsidies to disguise the real cost of production) to the wealthier farmers in the smallholder sector.

But growth across the agricultural sector was highly uneven, with smallholders playing a minor role. Widespread poverty and ecological decline resulted despite the best efforts of the Banda government to conceal these facts (and the continuing nostalgia for these times often expressed by Malawians). By the mid 1980s there was compelling evidence that, despite the well-stocked retail maize markets of the Agricultural Development and Marketing Corporation (ADMARC), tens of thousands of Malawian households were too poor to buy this maize. In the face of national surpluses, chronic malnutrition afflicted nearly half of the Malawian children.

In response to a deteriorating macroeconomic situation, the Malawi Government introduced a structural adjustment programme in late 1979 with support from the World Bank and the International Monetary Fund (IMF). A series of such programmes continued through the 1980s and 1990s supported by successive IMF standby arrangements and World Bank-financed structural adjustment loans. The (entirely laudable) aim was to redress the policy bias against smallholder agriculture.

The structural adjustment exercises were intended to remove market distortions that encouraged too many resources being devoted to maize production and that inhibited smallholders from participating in crop markets. But, as following paragraphs will show, price incentives alone were not sufficient to generate the needed supply response. The need to develop complementary but essential policies to address technological, land and credit constraints faced by smallholder households remained largely ignored (Harrigan, 2002). The basis causes of food insecurity and agricultural stagnation in Malawi lay in the failure to implement reforms to address basic questions of declining land availability, fragmentation of holdings, and the decline in soil fertility in the smallholder sector.

In 1987, three simultaneous events catapulted Malawi from a routine national food surplus to regular national shortages. The cassava mealy bug decimated the staple crop of Malawi's northern lakeshore population; drought ravaged the Shire Valley; and Malawi became a safe haven for large numbers of Mozambicans fleeing a devastating civil war. With maize weighted heavily in the consumer price index, inflationary pressures mounted.

This set the stage for the long and continuing slide in the value of the Malawi kwacha and made more difficult and painful the opening of the economy to market forces. There followed an extended period of intermittent food crises with donors providing extensive food aid. Following the great drought of 1991-92 and the collapse of the credit system, donors started to provide emergency free distributions of seed and fertiliser to maintain maize production. Even with an overvalued currency and high fertiliser subsidies, few households found the use of fertiliser on maize (based on official recommendations for its use) an economic option. The sharp devaluation of the Malawi kwacha in the 1990s drove fertiliser prices beyond the reach of almost all maize growers. The removal of subsidies is widely believed to be the main culprit for the rise in fertiliser prices. In fact, they had a minor effect compared to that of devaluation.

2.2.7. Credit collapse and fertiliser subsidy removal

Fertiliser subsidies were targeted early on in Malawi's reform process as part of the implementation of the second Structural Adjustment Loan in the mid 1980s. The high import costs of fertiliser as the result of devaluation made the costs of policies to promote growth through fertiliser subsidies fiscally unsustainable. But other national changes also had their own effects. The country was moving towards a more conventionally democratic political system. A significant casualty of political change was the smallholder credit system that delivered the subsidised seed and fertiliser to a minority of larger smallholders. When the ruling party changed, so did the ability of government to collect credit repayments[3].

The credit system suffered blows from other sources as well. After the 1991-92 drought, there was an entirely reasonable moratorium on credit repayments – it was impractical as well as inequitable to demand credit repayments from families on the edge of survival. Farmers learned fast that credit did not always have to be repaid. A policy of post-drought credit expansion to boost fertilised hybrid maize and restore grain reserves also brought in new and less credit-worthy borrowers. What was intended to be an expanded credit programme in reality became a large free-inputs programme for the final round of credit recipients. Whereas before 1990, the quantity of fertiliser not paid for did not exceed 5 % in any one year of the total used by smallholders, by 1996 this had risen to over 50 % (Whiteside and Carr, 1997).

2.3. BREAKING OUT OF POVERTY AND FOOD CRISES

Neither the Malawi Government nor donors anticipated how fundamentally the twin events of the collapse of the credit system and the increased cost of fertiliser would affect food security. Once improved maize seed and fertiliser technology were priced beyond the cash means of most smallholders, the outcome was tragic. The 1996/7 supply of marketed maize (after a good growing season) fell precipitously, the village level purchase price of maize quadrupled, and there was widespread hardship amongst the majority poor section of the population. The liberalisation of markets (agreed generally as essential to Malawi's future growth) was in danger of becoming discredited amongst the public by the high consumer price of maize and by the conspicuous rents evidently being extracted by private traders. The economy experienced the downside effects of liberalisation, but few of its benefits.

In 1998, the deteriorating food security situation threatened to undo completely the impressive progress made in laying the policy framework for growth. High maize prices were creating powerful inflationary pressures, compromising household food security, promoting labour unrest, and fuelling demands for higher wages. Emergency maize imports contributed to Government's runaway expenditure that further fed inflation. Interest rates rose sharply and the kwacha collapsed, undercutting productive investment and further driving up the cost of fertiliser for the next crop. With the looming food crisis (and the associated high consumer prices for maize meal and large scale theft of drying maize from fields), households were eating an unusually high proportion of the crop as green maize - with consequently less available for the following year's consumption. This scenario is now repeated, in varying degrees of severity, almost on an annual basis.

It was evident then, and remains true today, is that Malawi needs urgently to implement a strategy for broad-based and vigorous income growth, within a non-inflationary environment. While,

[3] The Banda government had used draconian measures to ensure credit repayment and, as a result, had an impressive repayment record (although a dreadful human rights one).

in the longer term, high maize prices may allow greater investment at the farm level and thus lead to increased productivity, the tragic famines of 2002 and 2003 suggest that it is quite possible that many Malawians would not survive to benefit from these changes. The message of this chapter is that many Malawian farm families face a dreadful series of choices. The technologies that they are recommended to use are incomplete, often uneconomic, and do not provide a reliable and effective road from poverty. Reforms carried out at the macro level have failed to reach their potential largely because the ever-present threat of a food crisis drives much of what is implemented as policy. Needed long-term change is lost in the urgency of dealing with immediate real or perceived crises.