



**GOVERNMENT OF MALAWI**

**THE NATIONAL FERTILISER STRATEGY**

**MINISTRY OF AGRICULTURE AND FOOD SECURITY  
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## ACRONYMS

ACP	African Caribbean and Pacific
ADC	Area Development Committees
ADMARC	Agriculture Development and Marketing Corporation
AFTC	Area Fertiliser Trading Clubs
AIDS	Acquired Immune Deficiency Syndrome
AISAM	Agri-Input Suppliers Association of Malawi
APIP	Agricultural Productivity Investment Program
APIP	Agricultural Productivity Investment Programme
CAN	Calcium Ammonium Nitrate
CISANET	Civil Society Agriculture Network
CNWFA	Citizen Net Work for Foreign Affairs
COMESA	Common Market for Eastern and Southern Africa
DARS	Director of Agricultural Research Services
DFID	Department for International Development
EPA	Extension Planning Area
EU	European Union
FFAM	Farmer Fertiliser Association of Malawi
FINCA	Foundation for International Community Assistance
FOB	Free on Board
FSP	Fertiliser Subsidy Program
FSP	Implementation of Fertiliser Subsidy
FTAM	Fertiliser Trader's Association of Malawi
GAD	Guide to Agricultural Production
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
IAP	Input for Assets Programs
IFDC	International Fertiliser Development Centre
IMF	International Monetary Fund
ISP	Input Subsidy Program
MASAF	Malawi Social Action Fund
MFAC	Malawi Fertiliser Advisory Committee
MFIP	Malawi free inputs program
MIPA	Malawi Investment promotion Agency
MK	Malawi Kwacha
MOAFS	Mandate Ministry of Agriculture and Food Security
MPRSP	Malawi Poverty Reduction Strategy Paper
MPTF	Maize Productivity Task Force
MRFC	Malawi Rural Finance Company
MTPSD	Ministry of Trade and Private Sector Development
MUSCO	Malawi Union of Savings and Credit Cooperative
NABW	National Association of Business Women
NABW	National Association of Business Women
NFCMB	Establish the National Fertiliser Agricultural Credit Management Bureau
NFS	National Fertiliser Strategy

NNFS	New National Fertilizer Strategy
SACA	Smallholder Agricultural Credit Administration
SADC	Southern Africa Development Community
SAPS	Structural Adjustment Programs
SFFRFM	Smallholder Farmers' Fertilizer Revolving Fund of Malawi
SPIS	Starter pack Initiative Scheme
SPS	Starter Parker Subsidy
TAMA	Tobacco Association of Malawi
TIP	Targeted Input Program
VDC	Village Development Committees
VFTC	Village Fertiliser Trading Clubs
WMS	Welfare Monitoring Survey
WSP	Warehouse Subsidy Program

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## **EXECUTIVE SUMMARY**

### **1. BACKGROUND**

*Agriculture is the single most important sector in the Malawi's economy, contributing about 36% of value added GDP, employing 85% of the workforce and contributing 90% of foreign exchange earnings in 2003 (MPRSP, 2003). However, over the past five years agricultural GDP grew at an average of 2.27 % with large swings ranging from -6 % in 2001 to 5.9 % in 2003. Therefore Government's overarching development issue is improvement in the productivity and profitability of agriculture, especially among smallholder farmers. By the year 2020, Malawi envisions a high level of agricultural productivity that will ensure equity in household food security, income and employment and sustainable utilization of natural resources. This is in line with the mission of the Ministry of Agriculture and Food Security of promoting the country's economic growth by raising farm incomes, employment and household food security through the development of partnerships and promotion of private sector investment for increased agricultural productivity, diversification, commercialization and sustainable use of natural resources.*

*Malawi's agriculture has been characterized by low and stagnant yields, factors which are contributing to pervasive poverty and food insecurity. The five-year average growth rate in production is below the officially estimated population growth rate of 3%. For example, yields of major crops are far lower than the attainable potential and world averages in most cases. In the case of maize, yields of local and hybrid varieties among smallholder farmers average almost one quarter and one fifth of the potential yields obtainable at research stations, respectively, whereas average burley and flue cured tobacco yields among smallholder farmers is less than half the potential yields at research station.*

*Low nutrient application especially inorganic fertilizer estimated at an average of 43 kg per hectare is among the major factors contributing to declining agricultural productivity. The level of nutrient application is too low when compared with the world average of about 100 kg/ha or that of several developing countries like China (>300 kg), Egypt (>300 kg), Bangladesh (>110 kg), Pakistan (>110 kg). The general recommendation in the case of hybrid maize is to apply 87 kg or 2x50-kg bags of DAP as basal and 175 kg or 4x50-kg bags of urea as topdressing per hectare. However, most Malawian farmers apply half or less than half of this quantity which is not only resulting in low production but is also leading to a rapid depletion of nutrients from the soils.*

*Adoption of fertilizer technology especially among smallholder farmers has been affected by the absence of a policy framework to guide the formulation, importation and marketing of fertilizer types as well as enforcement of standards. Although demand for various types of fertilizers used in Malawi has gone up from approximately 98,000 tons in 1987 to nearly 225,000 tons at present, this falls much below the potential demand for fertilizer in Malawi estimated at about 500,000mt annually.*



*The purpose of the National Fertilizer Strategy is to identify key issues affecting adoption and utilization of fertilizer technologies and to provide short, medium and long term actionable programs for developing private sector led fertilizer markets with a view to improving agricultural productivity and profitability, especially among smallholder farmers. The strategic plan also identifies priority areas for bold actions which are likely to accelerate farmers' access to affordable fertilizer and incentives for its use. Considering that Malawi is a net importer of fertilizer, the strategic plan provides input into the development of a Regional Fertilizer Action Plan to accelerate access of millions of poor farmers to chemical fertilizers and other complementary inputs.*

## **2. STRATEGIC ISSUES**

### **2.1 Fertilizer Availability**

*Total fertilizer supply in Malawi is composed of carry over stocks, imports and locally granulated and blended compounds. Factors affecting each of these components influence availability of this input. These factors include delayed procurement, inadequate capacity for local manufacture, high cost of transportation, poor access roads and transport infrastructure.*

#### **2.1.1 Timeliness of Fertilizer Importation and Distribution**

*Twelve to fourteen weeks are required between the time fertilizer orders are placed and when consignments arrive in the country. For the past decade during which the Government has been implementing safety-net programs and lately subsidy schemes, decisions to import fertilizer have been delayed until July/August pending passing of the budget in June. Delayed procurement caused by policy uncertainty has resulted in late and inadequate delivery of the input relative to time of planting in October/November. Importation of fertilizer in July/August coincides with the period when world prices are high and the Government or private traders pay a lot more in foreign currency than if orders were placed two or three months earlier. The high import prices are inevitably passed on to smallholder farmers making fertilizer expensive and unaffordable.*

#### **2.1.2 Inadequate Local Capacity to Manufacture Fertilizer**

*Malaw, is endowed with mineral resources, for fertilizer manufacture, including rock phosphate, sulphides, gypsum, potash rocks and limestone (phosphate, sulphur, calcium and magnesium). However, feasibility studies to demonstrate the cost/benefit of manufacturing fertilizer locally have been inconclusive. In addition, fertilizer experts have described the quality of fertilizer minerals in the country especially phosphate rock, as being inferior compared to sources found in major fertilizer exporting countries such as Egypt and Saudi Arabia. Furthermore, conversion of these rocks into fertilizer would require importation of*

*sulfuric acid and massive amounts of energy to convert them into fertilizer. It is therefore unlikely that local fertilizer manufacturing would be cost effective. Furthermore, the size of fertilizer market in Malawi which is potentially 600,000mt may be too small to justify establishing a manufacturing plant. However, the market demand may increase beyond 600,000 mt with an expansion in irrigated farming.*

*The cost of importing fertilizer can partly be offset by locally blending compounds. Currently, the country has two plants, one involved in blending and the other in granulation. **Optichem**, operate a steam granulation plant and the **Malawi Fertilizer Company** operates a bulk blending plant to produce compound fertilizers. A third fertilizer plant from the Republic of China will shortly join the industry. These three manufactures are able to produce substantial quantities of compound fertilizers such as the traditional 23: 21: 0 +4s for Maize and D compound (8:18:15 + 6s 0.1 B) for tobacco. However, one concern with blended fertilizer is sedimentation of granules when the product is transported over long distances. As such, it is recommended that granulation should take place close to areas where the fertilizer is to be used. Blending does not entirely solve Malawi's foreign exchange problem as the major ingredients involved in the process such as urea, di-ammonium phosphate (DAP) and muriate of potash (MOP) have still to be imported. The capacity for steam granulation is currently limited to 50,000 mt, annually.*

### **2.1.3 High Cost of Transportation**

*Transport cost, port and handling charges represent more than 40% of the retail price of fertilizer. Although importers have no control over the bulk of transport and handling charges, importation of small quantities and bagged fertilizer is not cost effective. Delayed fertilizer imports coincide with the period of transporting humanitarian relief food, creating congestion at the port and also increasing demand and cost of haulage. A greater volume of goods and commodities is imported into Malawi than is exported. This means that trucks bringing goods into Malawi must often return empty. The lack of backloads results in inward transport rates being well in excess of outward rates. Outward tariffs are estimated to be only 46-65 percent of the inward tariff. Trucks travelling regionally are subject to heavy charges levied by the countries through which they pass. For example a 30-tonne truck transporting goods from Beira to Malawi would be subject to the Mozambican tolls, fees, and other costs.*

*Some delays may be encountered at border posts when documents have not been forwarded properly. The Mwanza border is the only one that is relatively well-equipped. It has telephones, a fax, and electricity. If some documents are missing, it is easy for the authorities to contact the firm or the freight forwarding agent. The other border posts lack communication equipment. For road transport, the authorization to proceed is given at the border, while the clearance and the settlement of all duties is done inland. Customs activities are still very much centralized in Blantyre. When a shipment is contentious, all matters are settled in Blantyre even if the port of destination is Lilongwe. Given the high amount of seizures or disputes arising from missing documentation and under-invoicing, it may take several months before matters are settled.*

*Other delays are reported with SGS inspections. Imports of FOB value equal to or in excess of US\$2,000 are subject to pre-shipment inspection. The inspection ensures that a correct value is endorsed for import duty assessment on arrival of cargo. The importer gets the documents mentioned above and submits them to SGS with a copy of the clean report of findings to be issued with a Tax Assessment Notice (TAN), which is lodged at Customs.*

*The requirement for pre-shipment inspection by SGS is expensive for importers, demanding three percent of the value of the import as payment. Delays are experienced in the system, with importers having to pay for storage charges. There are doubts as to the effectiveness of the whole system, since inspections are not carried out when the goods arrive in Malawi, but are carried out in the country of origin.*

#### **2.1.4 Poor Transport Infrastructure and Access Routes**

*Malawi has four major trade routes, the Northern Corridor via Mbeya which gives access to the port of Dar Es Salaam, Nacala, Beira and the southern route via Mwanza to Durban. Of all four, the Nacala corridor is the shortest (815km from Blantyre). The rail has the capacity to carry more than five times the number of trains currently in operation (700,000 mt/annum). Transit time is a significant factor in selecting the mode of transportation. The current transit time from Nacala to Blantyre of 14-20 days due is of great concern. This compares unfavourably to road transit time for Beira-Blantyre of (2-3 days) and Durban-Blantyre (5-6 days). It is generally acknowledged that, at such a slow transit speed, cost has less relevance, e.g., for perishable cargo such as tea, possible or likely delays in transit are an absolute barrier to the use of the Corridor.*

*Distribution of fertilizer from wholesale depots to retail outlets is limited by poor and unreliable road infrastructure and access routes. Although substantial investment in roads were made in the 1980s more than 60% still have an earth surface and less than 20 per cent are of bitumen. Lack of regular maintenance and reliable bridges make many rural roads inaccessible during the rainy season. The average Extension Planning Area (EPA)<sup>1</sup> in Malawi has a limited amount of paved roads (about 32 km). The length of dirt roads (113 km) is three times as long as paved roads and twice as long as gravel roads (56 km). During the rainy season (December to March), most dirt roads and some gravel roads become impassable.*

## **2.2 ACCESS TO FERTILIZER**

*Three major factors constrain farmers' access to fertilizer. These include distance to markets, lack of purchasing power and escalating prices.*

### **2.2.1 Distance to Markets**

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<sup>1</sup> This is the smallest agricultural extension planning and administrative area based on agro-ecological zones.

*Until 1987 when the marketing of smallholder agricultural produce was liberalized and followed by removal of all licensing and registration procedures for private traders in produce and input markets in 1996, farmers were able to purchase fertilizer from points almost within ten km of their homesteads. This was because ADMARC was operating an elaborate and widespread network of input and produce markets throughout the country. Attempts to fill the vacuum created by closure of ADMARC markets through (a) increased entry of the private traders into the input marketing sub-sector from 1994 to date; and (b) through the establishment of small-scale agri-input distribution network close to the farmers' homesteads through the Agri-input Suppliers Association of Malawi (AISAM) and Citizen's Network for Africa (CNFA) between 2002 and 2006, has met a number of challenges. Firstly, poor road infrastructure and unreliable transport network as observed above is among the major factors making it commercially unattractive to distribute fertilizer within close proximity of farmers' homesteads. Secondly, poor communication and inadequate market information have limited private sector capacity to make sound investment decisions in the rural areas. Thirdly, dominance of parastatal input dealers (ADMARC and SFFRFM) input marketing particularly in the years of free or subsidized inputs distribution, has limited private sector incentive to establish an alternative network, let alone utilize the existing storage infrastructure. Fourthly, inadequate capital base especially among small to medium scale agri-input dealers has made it difficult for them to stock sufficient quantities of inputs at the time farmers need them. In addition, private sector investment in rural areas is hampered by deteriorating security situation.*

### **2.2.2 Purchasing Power**

*Access to fertilizer is also a function of purchasing power. The widespread, deep and severe poverty is the major factor constraining access to fertilizer in Malawi affecting more than 50 % of the population and low mean per capita annual expenditure of MK22,454 imply that only a few farmers can afford to purchase fertilizer. The problem of low purchasing power also affects the capacity of small to medium scale operators to import and distribute of inputs in the country.*

*Until 1994, farmers' access to subsidized inputs was made possible through government credit scheme the Smallholder Agriculture Credit Administration (SACA) which was established within the Ministry of Agriculture and Livestock Development (MoALD) in 1988 and implemented through farmers clubs. In spite of its success, SACA collapsed in 1994 as a result of political interference which led to the decline in recoveries which dropped to 25% in 1991-92 and to 16% in 1993-94. In 1994, a commercially oriented credit scheme known as the Malawi Rural Finance Company (MRFC) was established to replace SACA. However, success of the MRFC intervention has been minimal due to stringent lending condition and high lending rates.*

*Low purchasing power has also resulted from unfavourable producer prices received by smallholder farmers. Most farmers in Malawi use fertilizer in the production of maize and tobacco. An examination of value cost ratios for maize using 23:21:0 + 4s and CAN or Urea show a rapid decline since 2003 implying that farmers are getting much less in terms of return*

to maize for one kg of nutrient applied. Although the VCRs for tobacco are higher than those of maize, their trend has also been declining over the past decade primarily due to poor prices offered at the auction floors. This has resulted in reduced income as demonstrated by declining gross margin. Lack of bargaining power and uncompetitive marketing arrangements are major contributory factors to declining profitability and income among smallholder farmers.

### **2.2.3 Fertilizer Prices**

Farmers' access to fertilizer has been limited by escalating prices. An assessment of fertilizer price trend between 1995 and 2004 (IFDC 2004) shows that nominal fertilizer prices increased four-fold as a result of devaluation in the Malawi Kwacha, although the actual US\$ retail price of fertilizers in Lilongwe declined slightly over the same period. But since 2004, FOB prices for Urea have experienced some of the highest increases witnessed since the oil shortage of 1974. These changes reflect the rising the cost of oil related charges which escalated quite rapidly in early July 2004. Further analyses shows that inland transportation which constitutes approximately 16 % of the cost of fertilizer is also the major factor contributing to the input cost after FOB.

The rising cost of fertilizer prices when unaccompanied by a corresponding increase in producer prices<sup>2</sup> constrain farmers' ability to apply adequate amounts of nutrients and translate into reduced crop productivity and household incomes.

## **2.3 FERTILIZER UTILIZATION**

Factors that have influenced utilization include introduction of new crops by colonial settlers, research and extension, and legislation and regulations.

### **2.3.1 Historical Factors**

Until late 1968/69, the use of inorganic fertilizer was not linked to soil nutrient testing and crop requirements. Most of the fertilizers some of which are still being used today were introduced by colonial settlers who were engaged in the production of tea, tobacco, cotton and other estate crops using agronomic practices from the countries of origin, especially from within the British Empire. In contrast to the colonial period, the country passively contributed to the fertilizer policy landscape by choosing to grow flue cured and burley tobacco in the post independence era using technologies predominantly developed in Zimbabwe. As a result, most flue and burley tobacco varieties and current lines of maize varieties as well as use of major fertilizers types such as D compound (8:18:15 + 6s 0.1 B), C Compound (6:18:15 + 4s 0.1 B), S compound (6:18:6) can be traced to Zimbabwe and South Africa.

### **2.3.1 Research and Extension**

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<sup>2</sup> Government has for the past three decades deregulated agricultural prices except maize with a view to protecting consumers against food prices increases.

*During the 1968/69 crop-growing season, a “Mass Soil Analysis Laboratory” was established within the Chitedze Soil Chemical Laboratory Complex to address soil fertility concerns related to subsistence agriculture. The main purpose of the laboratory was to process as many soil samples as possible that were collected from smallholder farmers’ fields and make quick, but reasonably reliable, site-specific fertilizer recommendations. Although, soil nutrient testing was introduced in the country, blanket recommendations have dictated adoption and utilization of fertilizer technologies over the years. These recommendations were compiled as guidelines in the fertilizer use through a Government Publication called “the Guide to Agriculture”.*

*Government efforts to ensure food self sufficiency in the early 1970s emphasized maize-based technologies which constituted predetermined package of seed and inorganic fertilizer which were not site specific. The type of extension education and system of service delivery were all designed to increase adoption of specific types of fertilizers, 20:20:0 (later 23:21:0 + 4S) as basal dressing and Sulphate of Ammonia and later Calcium Ammonium Nitrate (CAN) as top dressing. As a result the use 23:21:0 + 4S and CAN as maize fertilizers has intensified among smallholder farmers and become embedded in policy programmes over the years. This is in spite of the fact the application of these fertilizers does not reflect the crop nutrient requirement relative to soil fertility status of varied ecological environment in the country. The product was developed in the eighties when the overriding priority was to get high nutrient fertilizers into Malawi with as little logistics cost as possible. Furthermore, 23:21:0+4S fitted the bill as a maize compound at a time where potassium levels in Malawian soils were high. Since then, however, soils have undergone a depletion of minerals such as potassium and trace elements such as sulphur, zinc and magnesium.*

### **2.3.2 Legal Framework**

*The legal framework for fertilizer use in terms of importation and sale was regulated through the Fertilizer and Farm Feeds Act which just listed fertilizer types such as D compound (8:18:15 + 6s 0.1 B), C Compound (6:18:15 + 4s 0.1 B), S compound (6:18:6), etc. The listing and specifying of fertilizer products that can be sold in a country is not compatible with an open market system. This is considered to be a legal rather than a scientific definition of fertilizer and it restricts fertilizer compositions (from a quality standpoint) by using a list of approved grades. However, the Government should have some control over the composition from an environmental and public health standpoint (e.g., heavy metals), but for most fertilizer products “truth-in-labelling” should be the means of regulation. Additionally, when government establishes specifications for products such as urea, DAP, Compound D (8:18:15 + 6s 0.1 B), or Super Compound D (10:24:20+ 6s 0.1 B), it is reinforcing to the farmers that they are buying named products when, in fact, they should be basing their purchase on the nutrients in the product and the cost per unit of nutrient.*

## **2.4 FERTILIZER POLICY**

*In the absence of a comprehensive fertilizer policy detailing national goals and objectives, it is difficult to provide a coherent private sector driven strategy for improving access to this critical input. Unprecedented changes in Government’s fertilizer procurement and distribution plans between one regime and another and even within a single year provide evidence of policy unpredictability and the nature of risk the private sector faces in conducting business in this*

*sub-sector. This implies that Government policy, for example on safety-net programmes, becomes unpredictable making it difficult for the private sector to effectively participate in the marketing of inputs and produce. It must be noted that Government's involvement in input procurement and distribution in times of disaster or when there is market failure is both politically and economically sound. However, there is need to build private sector capacity for medium to long terms sustainable input delivery system, especially considering that input marketing and distribution are not core Government functions. Therefore, implementing coherent and predictable policies is crucial in the process of private sector capacity development.*

*At regional level, fertilizer policies have not been harmonized although reliance on imported fertilizer will need to be continued for most countries within the communities. Availability of fertilizer from the global industry is not foreseen as a constraint. However, high price variability and small national markets result in cost uncertainty and high procurement costs. These are exacerbated for land locked countries such as Malawi where inefficient, high cost transport results in fertilizer prices that are often double the landed cost. These high prices are deterrents to affordability and indirectly to accessibility of fertilizers for most small farmers.*

### **3. NATIONAL STRATEGY**

#### **3.1 Vision**

*The vision of this strategy is to achieve high levels of agricultural productivity ensuring equity in household food security, income and employment and sustainable utilization of natural resources.*

#### **3.2 Objectives of National Fertiliser Strategy**

*The vision will be realised through the achievement of the following objectives:*

- 1. To increase fertilizer availability,*
- 2. To improve farmers access to affordable fertilizer.*
- 3. To improve utilization of fertilizer and related inputs.*
- 4. To facilitate improvement of infrastructure.*
- 5. To create an enabling environment for public-private sector partnership in the development of the fertilizer industry.*

#### **4.1 Priority Initiatives for Promoting Fertiliser Availability, Access and Utilization**

##### **4.1.1 Build private sector capacity for bulk procurement, blending and distribution of fertilizer using existing nation-wide marketing network of public infrastructure.**

###### **i. Bulk Importation**

*Most of the fertilizer is imported in bags and in ship loads of about 10,000mt. Bulk procurement and bagging at the port of entry would reduce cost and price of fertilizer to*

importers and farmers, respectively. In order to facilitate bulk importation, importers should be encouraged to form an association through bulk procurement using 12,000 to 14,000 mt shiploads. In order to increase the availability of foreign currency, the strategy will promote the creation of a foreign exchange fund dedicated to fertilizer importation.

## **ii. Blending**

The bulk of the fertilizer imported into this country is in granulated form containing approximately 30% of filler material which could be manufactured locally at minimal cost. With the exception of straight types of fertilizer such as Urea, Di-Ammonium phosphate (DAP), Muriate of Potash (MOP) and Sulphate of Potash (SOP), the cost of fertilizer could be reduced by 40% if most of the granulated compounds were locally blended. The private sector should be encouraged to establish a number of fertilizer blending plants close to areas of utilization, at least two in the Central Region, another two in the Southern Region and one in the Northern Region particularly where raw materials for blending are available. Use of limestone will be promoted in the blending of fertilizers and ensure that particle sizes are uniform within the range of 3-5 mm diameter. The advantage of blending is that the blended fertilizer will be cheaper than granulated. Public-private partnership should be promoted to allow the private sector to utilize public market and storage infrastructure to house blending plants in the three regions.

## **iii. Fertilizer Distribution**

The nation-wide market infrastructure is currently being underutilized. Developing public-private partnership would enhance maximum utilization of the market infrastructure to distribute fertilizer to all areas in the country. Some public storage and marketing infrastructure and facilities should be transferred at a reduced cost to the private sector to facilitate fertilizer marketing.

### **4.1.2 The Ministry of Agriculture should implement a 5 to 10 year market-friendly input intervention program with a clear exit plan.**

#### **i. Market friendly input interventions**

Currently there is inadequate participation of the private sector in the design and implementation of Government input intervention programs. This undermines the capacity of the private sector to import and distribute inputs. The Ministry of Agriculture with the full participation of the private sector and other key stakeholders should redesign the input intervention program to cover a period of five to 10 years with an exit plan. Procurement and distribution of inputs should be channelled through the private sector by introducing a flexible voucher system that allows farmers to buy inputs of their choice<sup>3</sup>.

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<sup>3</sup> Flexible voucher shall not confine a beneficiary to a specified agricultural input or dealer



**(ii) Fertilizer Buffer Stock**

*This will be aimed at stabilizing fertilizer availability in Malawi to take care of the problems shipping of fertilizer into the country as a result of the country's landlocked ness. Government will empower its parastatals to import fertilizers which should be released to the private sector at a wholesale price when there is a crisis*

**(ii) Exit Strategy**

*Input intervention programs are not sustainable in the long run, as such there is need for an exit plan. Farmers' purchasing power should be enhanced through a combination of the following:*

- *Identify target groups based on wealth ranking and ability to purchase inputs so that you have three groups, one eligible for inputs for assets (self targeting), the next eligible for seasonal credit in kind and the third, highly vulnerable and eligible to receive free inputs.*
- *Gradually reduce the size of intervention over the five year period;*
- *Promoting contract farming and out-growers schemes;*
- *Buying inputs and selling produce in bulk through farmers' organization;*
- *Intensify market information system addressing for example value-cost relationships; and*
- *Promote diversification of high value crops emphasizing integrated utilization of organic and inorganic fertilizers.*

**4.1.3 The Ministry of Agriculture in collaboration with the private sector and development partners should enhance skills and knowledge base in the use of organic and inorganic fertilizer and other inputs, especially among smallholder farmers.**

***i. Plant nutrient requirement and ecological specification***

*Fertilizer use in the country does not address crop nutrient requirement versus soil fertility status. The Ministry of Agriculture in collaboration with the private sector and key stakeholders should introduce cost effective fertilizer formulations and recommendations based on plant nutrient requirement and agro-ecological specifications.*

***ii. Skills and Knowledge in Fertilizer Use and Dealer Development***

*Effective and efficient utilization of fertilizer is compromised by inadequate skills and knowledge among the majority of smallholder farmers and input dealers. The Ministry should implement a comprehensive, pluralistic and demand driven farmer and dealer training program to enhance integrated utilization of organic and inorganic fertilizer and related inputs.*

**4.1.4 Public investment in road and transport infrastructure and access routes to rural areas to be scaled up.**

Poor road infrastructure and access to sea ports are major factors contributing to high fertilizer prices.

**i. Rural Infrastructure**

The Ministry of Agriculture in consultation with the Ministry of Transport and Public Works should identify and prioritise rural access routes based on strategic plans in the Agriculture Road Map to link areas of high production potential to market outlets. The Ministry of Transport and Public Works should intensify maintenance and construction of District feeder roads by taking advantage of the on-going Rural Infrastructure Services Project and other related initiatives.

**ii. Access to the Sea Ports**

The Malawi Government in collaboration with the Mozambican and the Zambian Governments should prioritise infrastructure development in the Nacala Corridor to ensure maximum utilization of the Nacala and Beira Rail Lines and the Shire-Zambezi Waterway.

**4.1.5 The Ministry of Agriculture to develop a Fertilizer Policy and enforce legislation and regulations governing formulation, procurement and distribution of fertilizer.**

The proliferation of fertilizer types in the country such as D compound (8:18:15 + 6s 0.1 B), C Compound (6:18:15 + 4s 0.1 B), S compound (6:18:6) and the absence of truth in labelling in the marketing system are symptomatic of an effective legislative and regulatory system. Although the country has legislation and regulations governing formulation, importation and marketing of fertilizer, these are outdated and not supported a comprehensive policy.

**i. Fertilizer Legislation and Regulations**

Review of fertilizer legislation and regulations was undertaken by the International Fertilizer Development Centre (IFDC) in 2003 and the proposed Fertilizer Bill and Amended Regulations are waiting for approval by Parliament and the Minister of Agriculture, respectively. The Minister of Agriculture should expedite legal review, enactment of the Bill and approval of the amended regulations. In order to enforce rules and regulations, the Ministry of Agriculture should establish a Fertilizer Commission which shall operate independently with initial financial support from Government and Donors and eventually by the fertilizer industry.

**ii. Fertilizer Policy**

The Ministry should immediately initiate the development of the Fertilizer Policy which should embrace issues affecting food security, poverty, soil fertility and environmental sustainability. The policy should further address issues of harmonization at regional level.

## CHAPTER 1: INTRODUCTION

### 1.1 Background Information

Poverty in Malawi is widespread, deep and severe. Empirical evidence demonstrates that 50% of the Malawian population lives below the poverty line (Welfare Monitoring Survey, 2005). In 1998, 89% of a majority of the poor lived in rural areas where agriculture is a key source of income (IHS, 1998). Based on the 2005 IHS, deeper poverty in rural areas is depicted by its lower mean per capita annual expenditure levels of MK22,454 compared to the urban per capita expenditure of MK52,594 (Table 1 in the appendix). On average, it means that the rural dweller is 2.3 times worse off than an individual living in an urban area in terms of consumption levels.

The poor, in this case, are defined as those whose consumption of basic needs (both food and non-food items) is around an estimated average put at MK61.52 per day (IHS, 2005). Within this number of the poor, 21% of the total population are living in dire poverty (Welfare Monitoring Survey, 2005). In general, the poor have low levels of access to or acquisition of certain basic social services or capabilities” (MPRSP, 2003).

The level of inequality is further illustrated by the fact that in 1997/98, the richest 20% of the population consumed 46.3% while the poorest 20% consumed only 6.3% of the total reported consumption of goods and services. In urban areas, the richest 20% consumed 58.4% while the poorest 20% consumed only 4.5%. Consumption was, also more unequally distributed within urban areas where the Gini coefficient was 0.52 as opposed to 0.37 in rural areas (see Table 2 in the appendix)<sup>4</sup>.

Despite this pervasiveness, some sections of the population are generally more affected than others. These include land-constrained smallholder farmers, labour-constrained female-headed households, estate workers or tenants, *ganyu*<sup>5</sup> and other casual labourers, destitute or disadvantaged children, like orphans, street children and child heads of households, persons with disabilities, low income urban households, the elderly, the uneducated and the unemployed (MPRSP, 2003).

### 1.2 Agriculture’s role in the economy

Agriculture is the single most important sector in the Malawi’s economy, contributing about 36% of value added GDP, employing 85% of the workforce and contributing 90% of foreign exchange earnings in 2003 (MPRSP, 2003). At individual/household level, empirical evidence shows that increasing agricultural productivity leads to an increase in incomes on both small and large farms. In Malawi, 92% of households grow crops (WMS 2005) and 56-61 % of households depend on crop sales as a major source of income (Nyirongo et al., 2001).

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<sup>4</sup> Ibid.

<sup>5</sup> *Ganyu* is piecework in return for cash or in kind

### **1.3 Agriculture Sector Development Policy and Role of Agro-input markets in Promoting Agricultural Development**

The motive to increase fertiliser consumption can best be achieved if a comprehensive agriculture sector development strategy exists, and agro-input markets are operating efficiently. Section 1.3.1 briefly describes the agriculture sector development strategy of Malawi. The role of agro-input markets in promoting agricultural development in Malawi is covered in section 1.3.2

#### **1.3.1 Agriculture Sector Development Strategy**

By the year 2020, Malawi envisions a high level of agricultural productivity that will ensure equity in household food security, income and employment and sustainable utilization of natural resources. This is in line with the mission of the Ministry of Agriculture and Food Security of promoting the country's economic growth by raising farm incomes, employment and household food security through the development of public-private sector partnership and promotion of private sector investment for increased agricultural productivity, diversification, commercialization and sustainable use of natural resources.

Malawi's agriculture, however, is characterized by low productivity (Table 3 in the appendix), a major obstacle to attainment of food and income securities at household and national levels as envisioned. The medium to long-term policy framework of the vision 2020 identifies deficient policies, ineffective institutional arrangements and capacities, and low and inefficient investment as major factors contributing to low productivity of the Malawi's economy. The Agriculture Sector Development Strategy intends to reverse this scenario by increasing access to land by smallholder farmers, increasing access to credit and farm inputs, improving agricultural technology, preventing land degradation and deforestation, improving agricultural marketing and trading systems, promoting agricultural diversification, improving extension and farming, and developing irrigation systems.

#### **1.4 The Role of Agro-input Markets in Promoting Agricultural Development**

Before agricultural trade was liberalized in Malawi in the 1980s, procurement and distribution of inputs in the smallholder farmer sub-sector was a monopoly of the two Government controlled companies, Agricultural Development and Marketing Cooperation (ADMARC) and Smallholder Farmer Fertiliser Revolving Fund of Malawi (SFFRFM). There existed no private sector entities to link the main suppliers of fertiliser and the smallholder farmers.

This Government intervention was defended on the grounds of promoting national food security and ensuring that all smallholder farmers, including those in remote areas, had access to markets for their products, and protection from exploitation by intermediaries. Government announced the prices of inputs and outputs at the beginning of the season. Farmers were able to plan for the season as to which crops to grow. ADMARC were the main buyer and seller of inputs and output and developed an extensive network and infrastructures of markets across all sections of the country to facilitate this process. These policies may have induced a maize supply response, as

evidenced by the national maize surplus enjoyed by Malawi until the 1980s. However, these policies proved to be unsustainable, as the cost of the subsidies contributed to the large budget deficits. A price band on maize was implemented in the late 1990s but was later abandoned.

Malawi realises that growth in agriculture production would reduce the frequency of food crises that the country has been experiencing over the years. However, this would be impossible if the current level of low fertiliser uptake persists. The fertiliser uptake has been very low compared to the potential that the country has, based on available arable land. Fertiliser consumption studies indicate that the sector has potential to consume over 547,000Mt of fertiliser per year, see table 5 (Kamchacha, 2003). For the past ten years, the consumption has varied between 83,000 Mt and 215,000 Mt per year (See table 4 and figure 2 in the appendix).

Agro-input dealers have increased farmer's access to various agricultural inputs through their retail shops located in some semi-urban and rural areas. By passing on basic information on the use of inputs to some farmers, agro-input dealers not only complement government extension efforts in promoting agricultural development but they also help in the rational utilization of meagre Government resources. In places where the agro-input dealers double as produce markets, they have helped to induce competition in the produce markets.

## **CHAPTER 2: THE FERTILIZER SITUATION**

### **2.1 Main fertiliser types, current levels of use, trend in fertiliser use for the past 20 years**

#### **2.1.1 Rate of Growth in Food Production**

Table 8 and figures 8 and 9 suggest that per-capita food supply is falling in Malawi because its population grows at higher rate than the growth rate of food production. Malawi's population continues to grow at the rate of 2.1% per annum (see table 7). Agricultural estimate figures show that maize production has been static, stagnating at between 1.3 and 1.8 million Mt for the past 15 years. It can, therefore, be inferred from this, that food production might be growing at less than 1% in Malawi. This scenario is resulting in people being increasingly food insecure with high rates of malnutrition.

There are quite a number of factors, which have led to this declining per capita food production. Notably, inadequate resources for investment; over reliance on rain fed agriculture; low levels of irrigation development; poor crop varieties; declining soil fertility and inadequate access to agro-inputs such as fertiliser. The high fertiliser price problem has also been compounded by low produce prices caused by poor market structures, poor market linkages coupled with poor government pricing policies and deepening poverty among the smallholder farmers.

In section 2.1.1, we briefly cover the main fertiliser types used in Malawi. The current levels of use are reviewed in section 2.1.2 and section 2.1.3 reviews trends in fertiliser use in Malawi.

#### **2.1.2 Main Fertiliser Types**

The main fertiliser types used in Malawi are Urea, 23:21:0+4S, CAN, and D compound. Figure 2 shows the uptake of these four types of fertiliser in Malawi over the last 15 years using sales as its measure. Urea and 23:21:0+4S are commonly applied to Maize, whereas CAN and D compound suit tobacco production. The proliferation of these fertiliser types in the Malawian agriculture reflects the country's dependence on these two crops. Table 4 shows a comprehensive breakdown of sales of 25 fertiliser types used in Malawi from 1991, including the aforementioned compounds.

#### **2.1.3 Current Levels of Use and Trends in Fertiliser Use for the past 20 years**

Malawi's fertiliser consumption is constrained by heavy dependence on rain fed crops and low levels of irrigation. Malawi has an irrigation potential of up to 500,000 hectares but only around 26,000 hectares are currently irrigated (Kumwenda and Dzanja, 2005). As a result, Malawi experiences one main cropping season that runs from October to April every year. Within this period, fertiliser use is mostly concentrated in the months of October through to December with late application sometimes occurring in January. It is estimated that 70 to 80% of the fertiliser is annually used in these months.

Table 5 shows a break down of recommended fertiliser application rates for all crops in Malawi. Malawi has an advantage over other developing countries, in that its soils have retained some of their base nutrient levels. The recommended average rate of application across all crops, regardless of fertiliser type, is around 160 kg/ha. On average, however, the nutrient use per hectare of fertiliser is only around 43 kg. This is much lower than the world's average of 100 kg per ha and other developing countries such as China (>300 kg/ha), Egypt (>300 kg/ha), Bangladesh (>110 kg/ha) and Pakistan (>110 kg/ha) (Kumwenda and Dzanja, 2005).

Malawi's low fertiliser use is reflected in low levels of fertiliser sales. Over the past 20 years, the use of fertiliser has varied. Between 1964 and 1990s, the annual average growth rate of fertiliser use has been estimated at 8.8%. Fertiliser consumption has been increasing slowly over the last 15 years, but is still well below the potential demand. Figure 2 shows the trend in fertiliser sales and imports from 1991 to 2004, including sales of the four dominant types<sup>6</sup>. Sales have fluctuated dramatically, but increased steadily over time. Between 1996 and 2003, however, fertiliser sales began to level off, averaging 186,000Mt per year, with annual incremental increases becoming smaller and smaller over time. Based on the crop area and application rates recommended by the Ministry of Agriculture and Food Security's guide to agricultural production, potential fertiliser consumption in rain fed crops in Malawi is over 547,000Mt annually (Kamchacha, 2003). This has been calculated by multiplying the recommended application rate by the total hectareage of each crop, averaged over a given time period.

## **2.2 Fertiliser production capacity**

### **2.2.1 Current levels of imports and domestic production**

Malawi is a net importer of fertiliser. In the last ten years imports have increased from 54,000Mt to 215,000Mt in 2003/4 (see Figure 3 in the appendix), predominantly from the Middle East, East Asia, Ukraine and South Africa. Despite reliance on imports, Malawi has its own mineral resources for fertiliser manufacture including rock phosphate, sulphides, gypsum, potash rocks and limestone (phosphate, sulphur, potassium, calcium and magnesium). Rock phosphate, Sulphides, Gypsum, potash rocks and limestone are very valuable mineral resources in the manufacture of fertilizers but currently the country does not have fertilizer manufacture plants. Malawi, however, does have fertilizer blending and granulation plants.

Malawi has two blending plants and one small granulation plant. The two blending plants have a tremendous amount of flexibility to (1) efficiently blend fertiliser with many different grades, (2) blend fertiliser with many different raw materials, and (3) convert batches of one grade into smaller one tonne quantities. Additionally, the granulation plant is small enough to be flexible in changing grades that it manufactures.

Malawi Fertiliser Company's bulk blending plant at Liwonde has a capacity of more than 30,000 Mt per annum. Malawi's second blending plant, and its only granulation plant, is owned and run by Optichem 2000 Ltd. The Optichem plant is in Blantyre and supplies compound fertilisers to smallholder farmers and estates. The capacity of the plant is 40,000 Mt per year. This only

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<sup>6</sup> Where sales are higher than imports this can be explained by two factors: stock carried over from the previous year, and the presence of an informal market in operation.

satisfies the estates requirements and not smallholder farmers who are major contributors to agricultural exports in the country.

A better quality of blending could be achieved if the blending plants are stationed in each region to reduce transportation distances and also problems of the fertilizer desegregation. Malawi's dependence on fertiliser imports would be further reduced if the capacity of the Optichem granulation plant were expanded.

## **2.2.2 Competitiveness of the Malawi Fertiliser Production Industry**

The change in internal transaction costs and concomitant increase in free on board (FOB) price and sea freight during the project period is illustrated by Figure 5, which presents the results of cost chain analysis for the retail price of urea fertiliser in Malawi for 1998, 2003 and 2005. The cost chain was divided into six activities: access to fertiliser (f.o.b. price); sea freight; port handling; land freight; handling; and margin. The analysis revealed that while the cost contributions made by the f.o.b. price and sea freight increased between 1998 and 2005, the cost contribution of handling and margins (the internal transaction costs) decreased substantially during this same period.

### **2.2.2.1 Domestic Production.**

Table 6 shows a pre-feasibility study on the possibilities of mining Apartite Rock up to producing a concentrate  $P_2O_5$ . The study estimated that the cost, including a 20% mark up would be around \$13.5/ tonne  $P_2O_5$

However, this information is inconclusive because the concentrate is sold to the manufacturers who in-turn will concentrate it further to produce the final products. The cost of importing the other ingredients has not yet been established. This area requires further study if an accurate competitive analysis can be done.

Potential domestic production should be compared to import prices, which in 2004/05 were \$425/tonne for urea, \$365/tonne for CAN and \$490/tonne for 23:21:0+4S.

## **2.2.3 Current Fertiliser Supply and Distribution**

Before liberalization of trade in the World Bank and International Monetary Fund (IMF) structural adjustment programs (SAPS) of the 1980s, the procurement and distribution of inputs in the smallholder farmer sub-sector was a monopoly of the government-controlled companies, ADMARC and SFFRFM. There were no private sector entities, then, to link the main suppliers of fertiliser and the smallholder farmers. Although trade was liberalized in the 1980s, participation of organized input-dealers was hardly evident. The private traders involved were not organized in one way or another.

However, in 1993, the government of Malawi adopted a policy to liberalise fertiliser importation, distribution and marketing, which was fully supported by the donor communities. Figure 4 shows how the market share between the public and private sectors has altered since 1995.



Market liberalisation has seen an increased private sector participation in agro-input trading. Yara, Farmer's World, Agora, Rab Processors, Export Trading and Transglobe are among the main fertiliser suppliers in Malawi, with Farmers World and Agora being the dominant supplier (see Figure 1). Private firms are currently the major importers of fertilisers in Malawi with about 92% of fertiliser imported and sold in Malawi.

As a way of promoting private sector participation in the fertiliser markets, government encourages the development of small-scale business enterprises. These participate in the distribution and marketing of fertilisers in Malawi among other commodities. Overall, there are now over 1,000 fertiliser outlets in the country largely confined in urban areas. The policy of liberalising fertilizer markets has led to the development of more organized small-scale agro-dealers scattered throughout the country. Most small-scale agro-dealers are supported by such institutions as Citizen Net Work for Foreign Affairs (CNWFA) and Agro-input Suppliers Association of Malawi (AISAM) which source funding from international organizations. However, profit-seeking motives and increased commercialisation, has led to a reduction in fertiliser sales and distribution in rural areas.

The two parastatals ADMARC and SFFRFM continue to supply the country with fertiliser, though currently there is a debate to restructure ADMARC. Advocates for the reorganisation of ADMARC cite the deteriorating financial position of the institution and its impact on the national budget as major factors for undertaking the process of reorganisation. It is also argued that its warehouse infrastructures and marketing activities in the rural areas discourage private traders from investing and trading in those areas although the market share of ADMARC appear to decline.

Similarly, it is felt that SFFRFM's involvement in the fertiliser business is to the disadvantage of the private sector development in the industry hence SFFRFM should be privatized to give room for full private sector participation in the business.

Conversely, it has been argued that removing ADMARC and SFFRFM on the fertiliser marketing would be to the disadvantage of the remote areas, where private traders are unlikely to reach due to high transport costs and other related logistical factors. It is felt that the importance of ADMARC in marketing of farm inputs and outputs outweigh the data available backing the closing or reorganisation of ADMARC. It is further felt that the reorganisation of ADMARC should lead to establishment of a public company that should provide input and output marketing services to replace ADMARC. But in areas of market failures, Social ADMARC should be established to serve the resource poor farmers.

### **2.3 Existing Government Policies and Market Interventions**

In 1998/99, the government launched a free inputs programme called Starter Pack Scheme. Without a specific "Fertiliser Policy", the Government has been undertaking ad hoc approaches to administer fertiliser issues in the fertilizer markets. This has involved policy statements and cabinet directives, which have provided policy guidelines on importation, marketing and use of fertiliser in the country. Some of these include directives on fertiliser subsidy policy, the aforementioned SPS and TIP, location specific fertiliser recommendations in the "Guide to

Agriculture”, and by the maize productivity task force and guaranteed fertiliser loan schemes for tobacco farmers.

The SPS aimed at increasing fertiliser and other input accessibility to the poor resource farmers such that about 2.86 million smallholder farm families benefited from this initiative in its initial year in 1998. Two years later, the scheme was changed to Targeted Input Programme (TIP). The two initiatives were funded by the Government of Malawi and the UK Department for International Development (DFID), the European Union (EU), the World Bank and other donors. However, questions over the long term sustainability caused donors to pull out and the programme ceased in 2004/05 agricultural season.

### **2.3.1 Existing projects and interventions to increase fertiliser use and supply**

The Government of Malawi currently implements the EU supported Agricultural Productivity Investment Programme (APIP) and the inputs for assets programme under various donor and government funded projects. The government has also adopted, in place of the TIP, an input subsidy programme that handled close to 147,000Mt of fertiliser in 2006. These schemes help the government mitigate the negative social impacts of market liberalization by increasing poor resource-smallholder farmer’s access to inputs. However, without a comprehensive action plan detailing goals and objectives of its fertilizer intervention programmes, it is difficult for government to provide a coherent private sector driven strategy for improving access to fertilizer and other critical inputs.

Based on the extent of private sector involvement in the supply of fertilizers to farmers and its price determination mechanism, the fertilizer market in Malawi has developed over three distinct phases.

In the first phase (1964-1990), the fertilizer supply system mirrored the dualistic structure of the overall agricultural sector with a separate marketing and support system. In the smallholder sector, the public sector had monopoly in the procurement and distribution of fertilizer, while the government set heavily subsidized pan-territorial and pan-seasonal prices. The requirements of the estate sector were met on commercial basis through Optichem Malawi Ltd, an organization in which ADMARC had a major stake. However, there were considerable fertilizer leakages from the smallholder to the estate sector.

The second phase (1991-1994) was marked by the partial liberalization of the fertilizer marketing system as the private sector was allowed to import fertilizer and distribute, while the government continued to set subsidized pan-territorial and pan-seasonal prices.

The third phase started in 1995 when the era of public monopoly ended as the private sector was allowed unrestricted involvement in the importation and distribution of fertilizers, and the formal subsidization of fertilizer prices was eliminated. Since then a number of policy changes and programs that are related to fertilizer marketing have taken place. For instance, government and its development partners have launched various initiatives aimed at improving accessibility of fertilizer by the resource poor farmers. Such initiatives have included the Starter pack Initiative Scheme (SPIS), the Targeted inputs Program (TIP), Agricultural Productivity Investment Program (APIP), Maize Productivity Task Force (MPTF) and the Input Subsidy Program (ISP).

### **2.3.1.1 SPIS and TIP**

In 1998/99, the government launched a free inputs programme called Starter Pack Scheme (SPS), which was aimed at increasing resource poor smallholder farmer's accessibility to fertilizer and other inputs. About 2.86 million smallholder farm families benefited from this initiative in the 1998/99 agriculture season. Two years later, the scheme was changed to Targeted Input Program (TIP). The program was implemented until 2004/05 agricultural season. The two initiatives were funded by the Government of Malawi and the United Kingdom, the European Union (EU) and the World Bank.

### **2.3.1.2 Agricultural Productivity Investment Programme (APIP)**

The APIP has been implemented since 1997/98-crop season. The program distributes fertilizer and seed on credit to creditworthy smallholder farmers with a view of mitigating the adverse social impacts of market liberalization, expand smallholders' access to credit and agricultural inputs and generate income as well as employment in the rural areas.

### **2.3.1.3 Maize Productivity Task Force (MPTF)**

This was established in 1995/96-crop season with the aim among others of investigating crop response to applied mineral and organic fertilizers. Countrywide on-farm demonstration trials were conducted on more than 2,000 smallholder farmer fields. These trials investigated the response of maize grain yield to applied N, P and S. The results of these trials were used to make recommendations for use by smallholder farmers in Malawi.

### **2.3.1.4 Input Subsidy Programme (ISP)**

The government plans to subsidize fertilizer cost to farmers by half were initiated in May 2004. In 2005/06 the government resumed the implementation of the input subsidy program abandoned in 1995 due to enormous pressure it exerted on the government budget. A total of 147,000 mt of fertiliser was sold under the program 110,000 mt of which was for maize production (Urea and 23:21:0+4S) and 37,000mt for tobacco production (CAN and D-compound).

Although input subsidies are still politically popular and their removal is associated with recurring food deficits, when poorly managed, the poor may not benefit from the programme. Leakages into the estates sub-sector have been observed in the previous input subsidy programmes. Besides, input subsidies in the past contributed to an increase in the government expenditure resulting in increased government borrowing. This led to deterioration of some macroeconomic variables such as inflation, exchange rates and interest rates. For example, it is estimated that fertiliser subsidy rates ranging from 22 to 28 per cent cost the government between 0.7 to 3.2 per cent of the national budget between 1983 and 1987.

### **2.3.2 Micro-Level Fertilizer Policy**

Currently, Malawi does not have a clear and coherent fertilizer policy. There is no document in the country that one would point to as a fertilizer policy as is the case with seed, extension, irrigation and other agricultural inputs. The country normally, embarks on ad hoc programs based on cabinet directives and sometimes motivated by donors. The overall goal of the micro-level fertilizer policy is to ensure food security of the majority of Malawian population. The key policy issues include the overall policy on fertilizer, pricing, subsidies and trade.

#### **2.3.2.1 Overall fertilizer policy**

Over the years, policy statements and cabinet directives have provided policy guidelines on the importation, marketing and use of fertilizer in the country. Some of these include directives on fertilizer subsidy, starter pack, targeted input programs (TIP), location specific fertilizer recommendations, in the “Guide to Agriculture”, and by the maize productivity task force, guaranteed fertilizer loan schemes for tobacco, etc. With the absence of a comprehensive document detailing goals and objectives, it is difficult for government to provide a coherent private sector driven strategy for improving smallholder farmer access to this critical input. It is therefore not surprising that well intended safety-net programs such as TIP and public works programs are misconstrued as development programs.

#### **2.3.2.2 Pricing**

In the past government intervention in input and output markets were defended on the grounds of promoting national food security and ensuring that all smallholder farmers, including those in remote areas, had access to markets for their products, and protection from exploitation by intermediaries. Because of that the government used to announce input and output prices at the beginning of the season. Farmers were able to plan for the season as to which crops to grow. The Agricultural Development and Marketing Corporation ADMARC were the main buyer and seller of inputs and outputs in the smallholder farmer input and output markets. Minimum price policy announcements may have induced a maize supply response, as evidenced by the national maize surplus enjoyed by Malawi until the 1980s. But, these policies proved to be unsustainable, as the cost of the subsidies and price support programmes largely contributed to the large budget deficits the government experienced.

The preceding argument entails that most organizations in the public sector that operated in Malawi largely followed a pan-territorial pricing policy. Although there are minor differences in prices of fertilizer and other critical inputs from one location and another, these do not necessarily reflect the higher transport or other distribution costs.

#### **2.3.2.3 Subsidies**

Although input subsidies pursued until 1994 are still politically popular and their removal has been associated with the recurring food deficits in the past decade, they increase the resource poor smallholder farmer's accessibility to fertilizer and other critical inputs among other benefits if properly managed otherwise may present a lot of disbenefits to the beneficiaries. Among the reasons for the poor not to benefit from input subsidies, include leakages into the estates sub-sector and unfavourable producer prices received by the smallholder farmers. Input subsidies in the past have also contributed to increase in government expenditure resulting in the deterioration of macroeconomic variables such as inflation, exchange rates and interest rates. For example, it is estimated that fertilizer subsidy rates ranging from 22 to 28 per cent of the cost of fertilizer, cost government between 0.7 to 3.2 per cent of the national budget between 1983 and 1987. Recent attempts to subsidize fertilizer across the board by half would cost the country approximately US \$48 million which is almost six per cent of the national budget.

#### **2.3.2.4 Trade**

As a signatory to many bilateral and multilateral trade arrangements including the Lome Convention of African Caribbean and Pacific (ACP) countries, SADC Trade Protocol, Common Market for east and Southern Africa (COMESA) and the World Trade Organization, Malawi's potential to expand its volume of exports and imports exists. However, the country does not have an effective strategy to penetrate and compete in the regional and international markets.

### **2.3.3 Macro-Level Fertilizer Policy**

The overall goal of the macro-level fertilizer policy is to attain a stable macro economic environment that allows the private sector to invest in agriculture. This would ensure food security at national level and Malawi would not be importing food. The key issues include stability in the exchange rate, adequate supply of foreign exchange and increased access to capital.

#### **2.3.3.1 Exchange Rate**

Depreciation of the Malawi Kwacha has negative effects on input supply and use. In the event that the Malawi Kwacha depreciates substantially against major currencies, traders are unable to import sufficient quantities of fertilizer reducing market supply and farmers are unable to buy the fertilizer because of high fertilizer prices resulting from higher demand than supply at the market and the loss of value of the currency. In a competitive environment, local currency depreciation makes domestic products more competitive internationally. This scenario hardly exists in Malawi due to low productivity, limited number of produce traders and lack of value adding. This limits the extent to which international demand for Malawian products would increase following currency depreciation.

### **2.3.3.2 Availability of foreign exchange**

Availability of foreign exchange to import fertilizer has at times been a major problem for fertilizer importers. Ensuring that adequate foreign exchange is available in the market each year for the procurement of inputs is an essential prerequisite to both the improvement of food security and the production of export crops. This would be possible by ensuring adequate supply of foreign exchange in the market for fertilizer imports. If possible, preference should be, given to fertilizer importers in the access of foreign exchange.

### **2.3.4 Extension Messages and Programmes**

Extension plays a very important role in promoting fertiliser consumption. It is the main mechanism for transferring knowledge and agricultural technologies to farmers. The Department of Agricultural Extension Services, in an attempt to improve fertiliser use, produced a guide to agricultural production (GAD). GAD is a manual in which various agricultural messages are documented to assist extension workers, as well as farmers, on the technical recommendations of various technologies including fertilisers.

Demonstrations on different appropriate technologies for different crops in the farmers' own gardens or fields across the country are also used as a measure for scaling up fertiliser use. The government or private companies often supplies resources for setting up these demonstration plots and participating farmers contribute labour and land. Farmers from around the demonstration plots benefit through field days organised by the Ministry of Agriculture and Food Security.

Another measure used in scaling up the fertiliser use is the production and distribution of leaflets on fertiliser types and application methods. For example, during TIP implementation period leaflets were used to guide farmers on fertiliser application as regards time, distance from the planting station and amounts to be applied. These leaflets also carried instructions on seed placement, crop management, harvesting and storage. Radio programs can be used to back up these measures. Organizing farmer workshops/seminars in day training centres located in EPAs is another measure used in scaling up fertiliser use intervention.

### **2.3.5 Existing donor support programs for fertilisers**

#### **2.3.5.1 Agricultural Productivity Investment Programme (APIP)**

The APIP has been implemented since 1997/98 crop season. The program distributes fertiliser and seed on credit to credit worthy smallholder farmers with a view of mitigating the adverse social impacts of market liberalization, expand smallholders' access to credit and agricultural inputs and generate income as well as employment in the rural areas.

#### **2.3.5.2 Description of existing safety net programs**

The evaluations of the Public Works Components of the Malawi Social Action Fund (MASAF) led to the development of the inputs for assets program. In this section we briefly look at these programmes.

### **2.3.5.3 Inputs for Assets Programme**

The overall aim of the inputs for assets programme was to identify viable methods for targeting the poor for disbursement of free resources to them. The inputs for assets program engages the poor resource farmers in rural feeder-road building projects for which the participants are rewarded with agricultural inputs such as urea and hybrid maize seed using the voucher system. The liberalization of agricultural markets in the IMF and World Bank structural adjustment programs reduced the quality of inputs, in addition to making them expensive for the resource poor farmers because the prices farmers paid for the inputs accounted for all the marketing costs with the removal of input subsidies. Input access by farmers became extremely difficult. The input for assets program complemented the efforts of TIP in increasing farmer access to quality inputs. Enhancing the quality of inputs would increase agricultural productivity and enhance household food security (IFDC, 2005).

The fertiliser subsidy implementation may leave out others who are not in a position to raise money for accessing the subsidised bag of fertiliser. The safety net program will be reorganized in such a way that it does not act as a disincentive to the private sector investment in fertiliser operations but compliment the efforts of the fertiliser subsidy programme.

### **2.3.6 Successful Interventions in Increasing Fertiliser Use and Supply**

APIP, input for assets and the Malawi free inputs program (MFIP) appear to have been successful in increasing fertiliser access, use and supply in Malawi. For instance, study results show that MFIP average production was much higher than the pre-MFIP production. For example average maize production increased by 27% in MFIP period while that of groundnuts increased by 249%, beans by 106% and soya beans by 70%. A greater proportion of this production is associated with MFIP because the programme contributed a large proportion of seed and fertiliser. This led to an increase in area under crops and their yields.

## **CHAPTER 3: CONSTRAINT ANALYSIS**

### **3.1 Fertiliser supply and demand side constraints**

A number of factors impinge the consumption levels of inorganic fertilisers in Malawi. These factors include: high fertiliser prices, climate and weather conditions, and though unsubstantiated, farmer's knowledge, quality of fertilisers, land holding sizes, procurement modalities and transportation issues, among others. These factors affect both the demand and supply sides of the equation and are discussed in detail below.

#### **3.1.1 Demand side constraints**

##### **(a) High Fertiliser Prices**

Figure 6 and 7 shows the fertilizer price in real dollar terms. The price of fertiliser has actually decreased over the last five years, when inflation, increased costs of transportation and the increased costs of production of fertiliser is factored in. Recent studies undertaken by the International Fertiliser Development Centre (IFDC) have shown that the fertiliser industry in Malawi is operating on profit margins lower than those generally accepted as sustainable in many business enterprises. In order for them to achieve this, the businesses industries have been accessing cheaper shipping companies, cheaper international finance; buying at times fertiliser is at its lowest price and reducing stock levels to keep down interest charges.

Figure 6 further depicts US\$ granular urea prices ex-Arabian Gulf by time (Jan 1997 – Jul 2004). This graph clearly shows the dynamics in the world fertiliser market over the past 7 years. In the past two months alone the market has experienced some of the highest prices witnessed since the oil shortage of 1974, with no signs of price decreases to come.

However, between 1995/96 and 2005/06, the prices of fertilisers has risen 10 fold from an average of MK316 to around MK3200 per 50kg bag. This increase is due to the devaluation of the Malawi Kwacha against the US dollar from US\$1 = MK44 in 1998 to US\$1 = MK 132 in 2006, and the rising price of oil. This is against a low and stagnant per capita income estimated at less than US\$ 200 per annum. This is further confirmed by Levy (2005) who reported that about 44% of TIP beneficiaries and 35% of Non-TIP beneficiaries failed to purchase fertilisers because of price.

##### **(b) Poor access to credit**

Until 1993, smallholder farmers accessed credit facilities through the Smallholder Agricultural Credit Administration (SACA). SACA failed to successfully channel and recover medium term loans amounting to MK 50 million (US \$ 9.7 million ) to smallholder farmers partly due to administrative hiccups and political interference associated with change of one party to multiparty system of governance. The Malawi Rural Finance Company (MRFC) was established to replace SACA but on commercial basis using group lending as a form of social collateral.



The low cost and scanty micro- credit facilities for both agricultural and non-agricultural activities are available through non-governmental institutions and safety net programs. The following NGOs provide credit facilities to their members or target groups with low or no collateral: the Foundation for International Community Assistance (FINCA), the Malawi Union of Savings and Credit Cooperative (MUSCO) and the National Association of Business Women (NABW) jut to mention a few. At a small scale CNFA provides guarantees to its target agro-dealers to access input credit from companies and cash from Malawi Rural finance Company (MRFC).

In spite of these initiatives, access to agricultural credit is still one of the major bottlenecks faced by smallholder farmers, input providers and traders and high interest rates being one of the major limiting factors. Apart from the inflationary pressure, high default rate usually influenced by political interference and lack of trust on the part of borrowers, and political manipulation have led to an increase in the risk premium in smallholder agricultural loans.

### **(c) Low Output prices**

The economics associated with nutrient use are dictated by unstable producer prices especially for food crops. For instance, recommendations for maize are influenced by whether or not the maize is for home consumption or for market sale. The home-consumption maize has assured demand and hence farmers are recommended to higher rates of fertilisers compared with the risky market maize where the prices drop considerably during good harvests.

Consequently, farmers have not been keen on investing in fertiliser application due to plummeting output prices and a general slump in world prices. Fall in output prices has been associated with poor quality while in other quarters; it has been associated with high collusion rates as a result of few buyers operating in the smallholder farmer output markets. Lower output prices are reflected in decreased demand for fertilizer. For instance, if farmers spend about MK 13,000 on fertiliser alone to produce one hectare of maize, the gross proceeds from such an investment may not be more than MK17, 000<sup>7</sup> and the farmer will not be in a position to meet the cost of fertilizer.

### **(d) Poor Farmer Organisation**

Smallholder farmers who are not organised into groups cannot benefit from economies of scale thus purchase fertilisers individually at most exorbitant retail prices since they buy limited quantities owing to limited purchasing power. Facilitating the transformation of farmer organisation into clubs, associations and cooperatives or trusts will enable farmers belonging to a particular group access fertiliser at reasonable prices through bulk purchases at wholesale prices. The other merit of getting farmers organised is that they will access other services related to fertilisers easily and quickly.

### **(e) Limited Fertiliser Application Technologies**

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<sup>7</sup> This is based on the average price of MK3200/50kg bag of maize, and an estimate of 200kg of fertiliser per hectare, and a commercial price of MK850/50kg bag for maize.

The current fertiliser technologies in Malawi are cumbersome and tedious. The technologies are being promoted against a background of numerous agriculture activities that compete for time and labour. This is aggravated by inadequate knowledge about fertilizer types and application. Fertiliser application technologies should be diversified to allow a wide range of farmers such as the elderly and the sick to apply fertilisers with ease without compromising on the procedure.

**(f) Other constraints on the demand side**

One of them is small landholdings which lead to low fertilizer consumption levels. The other is over reliance on organic matter by some farmers and this over reliance on organic matter cuts on the actual amount of fertilizer applied by farmers while weak extension delivery system fails to make farmers realise the role of fertilizer on attaining the green revolution for eradicating poverty.

**3.1.2 Supply side Constraints**

**(a) Unfavourable Macro-Economic environment**

The key issues include instability in the exchange rate and inadequate supply of foreign exchange. The depreciation of the Malawi Kwacha has had negative effects on input supply and use. In the event that the Malawi Kwacha has depreciated substantially against major currencies, traders are unable to import sufficient quantities of fertiliser and farmers are unable to buy the fertiliser.

Availability of foreign exchange to import fertiliser has at times been a major problem for fertiliser importers. Ensuring that adequate foreign exchange is available in the market each year for use in the purchase of input requirements is an essential prerequisite to both the improvement of food security and the production of export crops. Currently, this is limited by inadequate availability of foreign exchange.

**(b) Procurement, Transport costs and Distribution**

Fertiliser imported into Malawi is usually in small parcels, which drives up product prices and freight costs. Handling and transportation of small quantities is always expensive because of diseconomies of scale. These expenses are borne by farmers who are forced to purchase the product at very high prices and limit the levels of fertilizer bought.

Haulage companies and truckers are sometimes reluctant to penetrate into the remote areas with poor roads and freight rates are abnormally high in Malawi compared to the rest of the region due to the high cost of fuel, spare parts and high rate of depreciation resulting from poor roads. The rail links to seaports are in a state of disrepair and cannot be fully relied upon to ferry fertilisers and nether are domestic rail lines in frequent use forcing transporters to use the expensive land routes. Most parts of the rail link through Mozambique were washed away (about 80km on the Beira link) and about 20% on the Zambian link.

The situation is further exacerbated by the lack of fertiliser dealerships in remote areas. Fertilisers are stocked at rural trading centres so that farmers have to move 10-50 km to get the product.

**(c) Market Information Systems**

Information about sources of fertilisers, prices, types and uses is not readily available for both farmers and dealers. Farmers and dealers are not able to make informed decisions about what fertilisers to buy and where to buy them from. To improve upon the dissemination of extension marketing information messages on fertilisers there is need for one-stop shops for information on fertilisers. Such shops should provide users with full package of information to guide the use of fertilisers. Such shops need to be strategically positioned to enable farmer's access to information about fertilisers. The resource centres ought to be established in various parts of the country. The centres should stock all the necessary information on fertiliser sources, handling procedures, prices and even uses of different types of fertilisers. Such information will enable farmers make informed choices and decisions about the type of product to go for, how to source it, handle it and manage it.

**(d) Inadequate Agro dealer Network**

A vibrant agro-dealer network would ensure the timely availability of fertilisers and information to a wide range of farmers in the rural areas. Existing agro-dealers do not have adequate capacity and management skills for handling fertilisers. A sound agro-dealer network should be extensive enough to allow farmers to access agro-dealers by foot. Furthermore, the agro dealers should be able to provide information leading to proper use of fertilisers.

**(e) HIV/AIDS Pandemic**

Timeliness in fertiliser application is an issue of concern as it affects results of a given type of fertiliser negatively.

The affected and infected cannot apply fertilisers timely to their crops due to absenteeism from the fields resulting from chronic illness in case of the infected and caring for the sick and even attending to funerals in case of the affected. The challenge in extension is to reverse the trend in the short and long term.

To enhance the current efforts by the National AIDS Commission, there is need for specific strategy for the Ministry of Agriculture and Food Security to pass AIDS messages to the farming communities. This effort should use the extension services machinery to alert farmers of the dangers of HIV/AIDS and how it adversely affects agricultural productivity.

**(f) Poor public-private partnership**

This has been observed to be weak. In a situation where the public-private partnership is weak, usually, the public entities operate on their own and so do the private entities depriving each other of moral support in the fertilizer market and economies of scale if their resources are

pooled by working together. The weak relationship between the public and the private sector entities in Malawi is heavily reflected in the failure of the government to involve the private sector in the initial planning stages and allowance of a small private sector share in the implementation of the government funded input interventions as a result of lack of trust between them.

### 3.2 Strengths Weaknesses, opportunities and threats

The table below summarises the strength, weaknesses, opportunities and threats in the implementation of the NFS.

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
Averagely functional institutions	Poor access to agricultural inputs	Donor support	Unfavourable weather conditions
Peace and stable political environment	Poor infrastructure and unreliable utility services		HIV/AIDS impact
Averagely high capacity personnel	Low adoption of improved technologies	Low labour costs	Hinterland ness of the country
A diversity of underdeveloped crop and livestock enterprises	Environment degradation	High labour supply for agricultural and industrial expansion	High inflation rates from external forces
A high proportion of arable land for industrial and agricultural development	Weak public private sector partnerships	Unexploited natural resources (Water, minerals etc)	Frequent currency devaluations
No communication barriers	Inadequate social and property security		
Upcoming agro-dealer network.	Weak regulatory framework		
	High dependency syndrome		
	Gender imbalance		
	Reliance on rain fed agriculture		
	Few and small private sector firms		
	Private sector lacks diversity		
	Low agricultural diversification		
	High dependency on maize as staple food		
	High brain drain		
	Low effective demand		
	Small sized economy		

## **CHAPTER 4: NATIONAL FERTILIZER STRATEGY**

### **4.2 Vision**

The vision of this strategy is to achieve high levels of agricultural productivity ensuring equity in household food security, income and employment and sustainable utilization of natural resources.

### **4.3 Objectives of National Fertiliser Strategy**

The vision will be realised through the achievement of the following objectives:

6. Increase fertilizer availability,
7. Improve farmer access to affordable fertilizer.
8. Improve utilization of fertilizer and related inputs.
9. Facilitate improvement of infrastructure.
10. Create an enabling environment for public-private sector partnership in the development of the fertilizer industry.

### **4.4 Role of the National Fertiliser Strategy (NFS) in promoting agricultural sector development**

The NFS will provide the government with means for intervening in the level of prices paid by farmers for fertilisers in the fertilizer markets. As a short-term measure, the NFS will continue to implement a fertiliser subsidy programme. By ensuring the use of pan-territorial fertilizer retail prices farmers will pay the same price for the fertiliser irrespective of location, social status or season. In so doing, the strategy will increase the affordability and accessibility of fertilizers by the poor resource farmers. The fertilizer market experiences rampant market failures in Malawi especially in rural areas as a result of inadequate public goods such as road and warehouse services. By deploying state agencies such as SFFRFM and ADMARC to undertake the delivery of fertilizers to such areas where private trader operations are not profitable, the NFS is likely to increase availability of fertilizers in these areas.

One of the public goods inadequately and poorly provided in the country is the road network. By initiating projects in the road construction area, NFS will promote agricultural sector development by improving the physical flow of fertiliser to farmers and produce to the markets. The number of private operators in fertilizer and produce markets is likely to increase with improvements in road network. The flow of fertilizer into agricultural areas and outlet of produce from these areas into markets will promote diversified agricultural productivity. The strategy will attain this by creating linkages with the infrastructure services project the Government of Malawi is currently implementing. The overall effect of this will be increased farmer's liquidity, thereby increasing farmer's capacity for consuming more fertilizer.

The consultation process undertaken as part of the process in developing this NFS has revealed that Malawi does not have clear standards for fertilizers and that some of the fertilizers blended in the country have had cases of adulteration. Such situations counteract the productive capacity of fertilizers often associated with negative agricultural development. By improving Malawi's regulatory services through the formation of fertilizer commission and revitalization of the Malawi Bureau of Standards, the NFS is expected to play a major role in improving fertilizer quality and standards in order to promote agricultural development. Intensification of awareness campaigns on appropriate standards and improvement of storage capacity that the NFS intends to promote will not only reinforce the good standards of fertilizer but also increase the capacity of the private sector to produce and market fertilizer.

Other than that, the NFS is expected to increase fertilizer profitability amongst farmers and private operators through the provision of appropriate information on the type of fertilizer needed and available on the market and potential and effective demand of fertilizer because the operators will be in a position to make informed decisions. The NFS will make a deliberate effort on improving the synchronisation of crop nutrient requirements with soil fertility levels. Through improved fertilizer information systems, information on synchronisation process of nutrients with soil fertility levels will be made available to the fertilizer producers and traders and farmers for profitable decision-making.

The NFS by providing practical and relevant information that enhances widespread adoption of innovations by farmers will increase fertilizer profitability among farmers. The NFS will intensify extension service in the delivery of the innovation information through field days, on farm demonstrations, day training centres, leaflets and/or radio and television programs. The innovation information that goes to the farmers becomes instrumental to agricultural sector development if it is consistent with the advice being given across different avenues of communication systems to the framers and that there is compatibility between fertiliser advice and the agronomic requirements of specific crops and varieties.

#### **4.5 Role of National Fertiliser Strategy in ensuring access, affordability and incentives to farmers**

In 1993 maize yield increased by 27% over that of 1992 from 1211 Kg/Ha in 1992 to 1533 Kg/Ha in 1993 because it is speculated that the resumption of a fertiliser subsidy made the fertilisers cheaper and accessible for most smallholder farmers (Kherallah and Govindan, 1997). It has also been observed that aggregate maize production in the MFIP period increased by 27% over that of the aggregate pre-MFIP period production. The 2005/06 input subsidy has also demonstrated to have increased fertilizer affordability. In the short-term, FSP and IAP are, therefore, expected to make fertilizer cheaper and accessible to farmers and ultimately increase agricultural productivity. In the medium to long-term, increased capacity of the private sector in fertilizer production as a result of improved marketing and rural market infrastructure/communication network in the NFS among others will ensure fertilizer accessibility and affordability to farmers.

#### **4.6 Priority Actions**

#### **4.6.1 Five National Bold Initiatives for Promoting Fertiliser Access, Affordability and Incentives**

- Build capacity for the private sector such as agro-input dealers and farmers
- Implement market-friendly input intervention programmes with a clear exit strategy
- Enhance skills and knowledge base in the use of organic and inorganic fertilizer and other inputs.
- Scale up public investment in road and transport infrastructure and access routes to rural areas
- Develop a fertilizer policy and enforce legislation and regulations governing formulation, procurement and distribution of fertilizer

##### **4.5.1.1 Objectives**

- Increase food security levels at household and national levels through building capacity of farmers and the private sector involved in fertiliser marketing in the country.
- Promote fertiliser consumption among farmers through an effective delivery system
- Strengthen the fertiliser production and marketing information systems in the country through timely provision of relevant information and statistics.
- Attain a stable macro economic environment that allows the private sector to invest in agriculture and provides prosperity to farmers.
- Increase farmer's income

##### **4.5.1.2 Rationale**

Malawi is characterized by low-income levels, low productivity, high dependency ratio, high malnutrition rates, and high mortality rates among other development variables. In 2000, Malawi's gross national income per capita was estimated at US\$ 170. The gross domestic product growth was 1.7% compared to a population annual growth rate of 2.1% in the same year. This implies that Malawi has not done much in addressing her development problems. These indicators imply existence of high poverty levels in Malawi (see table 7). This poverty ultimately denies the Malawian farmer opportunities to access and afford fertilizer resources that would promote production. A number of these farmers are not able to afford improved inputs such as fertilizer and seed at a market price. And yet, empirical evidence shows that use of improved inputs such as improved seed, inorganic fertilizers and pesticides increases agricultural productivity. The farmer's inability to access improved inputs in Malawi is aggravated by low improved input supply (Malawi Government, 2003; Chilowa, 2004; Nyirongo et al., 2001).

Poor and inadequate infrastructure aggravates the problem of fertilizer access and affordability by farmers in Malawi. For example, Malawi has inadequate and poor road network and poor and inadequate warehouses for storing fertilizers and timely distributing them. 18.5% of the Malawi's road network was in a paved state in 2000 implying that a greater proportion of the existing road network in Malawi is impassable in the rainy season when the mono-rainfall dependent agriculture is at its peak. Because of this transport service supply is usually lower than demand particularly in rainy season. This pushes transport service costs up for fertilizer dealers.

Subsequently, fertilizer prices increase beyond the reach of poor Malawian farmers. The land locked ness of Malawi prevents the fertilizer retail prices to come down suggesting that even if the fertilizer market were very competitive, the transport element would still make the fertilizer prices high and difficult for most farmers to afford (see table 7).

It is for the aforementioned argument that a sound NFS is likely to reverse the situation Malawi is experiencing now. Eventually, the NFS will ensure access, affordability and provision of incentives to farmers especially if it provides mechanisms for government's intervention in the fertilizer market by providing suitable arrangements for implementing fertilizer strategy programmes, build necessary capacity for farmers and the private sector, improve fertilizer production and marketing information systems and provide a sound macro-economic policy management.

#### **4.5.1.3 Implementation Strategy**

In order to achieve its objectives, the NFS will adopt short-term, medium-term and long-term approaches as outlined below.

##### **4.5.1.3.1 Short-term Strategies**

###### **(a) Improve Implementation of Input Intervention Programmes by using market friendly approaches (FSP and IAP)**

Fertilizer markets are not working efficiently in Malawi because of availability of inadequate public goods particularly in rural areas. This makes fertilizer scarce and expensive for the rural farmers. The private operators in fertiliser trade have a small coverage of the country with few scattered retail outlet markets mostly confined in trading centres. Handling costs as a result are high. All these create serious problems of fertilizer access by poor resource farmers. In view of this the NFS will implement smart subsidies and input for assets programmes for a minimum period of 5 to 10 years to make fertilizer available, affordable and accessible to the poor resource farmers. In smart subsidies, there will be definition of roles between the government and the private sector.

Fertilizer procurement, transportation and distribution will be the private sector role because the private sector has structures and mechanisms for performing such a role. The NFS proposes that during implementation of the government fertilizer intervention programmes 30% of such programmes should initially be handled by the private sector and 70% by the government. This will help clear mistrust that currently exists between the government and private sector in the private sector involvement in the government programmes. Eventually, it is expected that with increased private sector capacity the whole process procurement and distribution will be a responsibility of the private sector.

The government's main role will be concentrating its efforts and resources on targeting beneficiaries and regulation of the fertilizer act. In this way, the scarce resources of the government will be put to other equally important uses. But in areas of total market failures, the government will be responsible for the transportation and distribution of fertilizer using state



delivery systems such as SFFRFM and ADMARC. Clear contract arrangements between government and the private sector will be encouraged in implementing smart fertilizer interventions by involving a stakeholder committee on procurement and distribution of fertilizer.

The smart FSP and IAP will not only enhance public-private sector partnership through definition of roles between government and private sector but also promote joint forward planning between government and private sector. This will help government and private sectors know the gap these programs will fail to cover and hence ensure reasonable sharing of the fertiliser market to the private sector for the identified gap. In so doing issues of uncertainty in the fertiliser market by the private sector will be eliminated.

The smart FSP and IAP will encourage the use of flexible discount vouchers as a medium of exchange for fertilizer. The floating vouchers will be used in place of money and hence increase effective demand for fertilizer. Other than the open tender system, which discriminates against small-scale business operators, the voucher system is inclusive and will eventually lead to development of the private sector.

#### **(b) Other Short-term Measures**

The other short-term strategies which the NFS will encourage to increase the availability, affordability and accessibility of fertilizer include enhancing income transfer projects such as money for work programmes, promoting commercial awareness campaigns amongst smallholder farmers, rehabilitating and selling ADMARC warehouse space in the north to receive imported fertilizer from Dares-Salaam for serving northern and part of central region areas and those in the south to receive imported fertilizer from Beira for serving southern and part of central region areas to minimise transportation and handling costs, synchronising fertilizer supplies in markets with agricultural produce marketing and matching government funding the calendar of the agricultural activities.

#### **(c.) Proposed exit Strategies**

Input intervention programs are not sustainable in the long run, as such there is need for an exit plan. Farmers' purchasing power should be enhanced through a combination of the following:

- Identify target groups based on wealth ranking and ability to purchase inputs so that you have three groups, one eligible for inputs for assets (self targeting), the next eligible for seasonal credit in kind and the third, highly vulnerable and eligible to receive free inputs.
- Gradually reduce the size of intervention over the ten year period;
- Promoting contract farming and out-growers schemes;
- Buying inputs and selling produce in bulk through farmers' organization;
- Intensify market information system addressing for example value-cost relationships; and
- Promote diversification of high value crops emphasizing integrated utilization of organic and inorganic fertilizers.

#### **4.5.1.3.2 Medium-term Strategies**

##### **Skills and Knowledge in Fertilizer Use and Dealer Development**

Effective and efficient utilization of fertilizer is compromised by inadequate skills and knowledge among the majority of smallholder farmers and input dealers. The Ministry should implement a comprehensive, pluralistic and demand driven farmer and dealer training program to enhance integrated utilization of organic and inorganic fertilizer and related inputs

##### **(a) Intensify Farmer and Extension Specialist Training in Fertiliser Use, Handling and Management**

This will be achieved by conducting training needs assessment for farmers and Extension Workers in the area of fertiliser use, handling and management and then develop training manuals for extension workers and farmers. Competent fertiliser specialists will be profiled to undertake a comprehensive training for extension workers who will in turn train farmers. The training will be organized in a way that regular refresher courses to update and maintain sound knowledge levels in the area of fertiliser use, handling and management amongst the extension workers and farmers are made available. In the course of training, lead farmers will be identified for further dissemination of the fertiliser technologies.

For effective training, these farmers will be organised into fertiliser clubs/groups which could later be developed into the Fertiliser Association of Malawi with all importers, distributors and consumers of fertilizer included etc. The association could be responsible for negotiations with government and other stakeholders on issues affecting fertiliser marketing such as foreign exchange for fertiliser imports, credit issues, and policy issues.

In these clubs/groups, farmers will enjoy bargaining power and access to loans for procuring fertilisers. NFS will also conduct leadership-training sessions for the clubs to ensure that they operate effectively in promoting the use of fertilisers in recommended practices and their assimilation into the overall fertilizer association.

Further, NFS will introduce targeted field days in which the poor resource farmers will be identified and mobilized to the demonstration plots to reinforce the fertiliser trainings. The targeted farmers that participate in the targeted field days will be issued with inputs for setting up similar demonstration plots in their gardens in the following season. The NFS will also organize competition for the best farm demonstrations. The best farmers will be rewarded with fertiliser bags. Use of jingles, radio slots, comedies, mobile vans and campaigns in addition to print and electronic media will be encouraged.

##### **(b) Train Agro-input Dealer in Fertiliser Use, Handling, Management and Marketing**

- i. NFS will intensify agro-input dealer training by organizing district, area and village workshops and seminars on fertiliser use and management, sales and marketing, promoting informal education sessions to ensure that agro-input

dealers who are illiterate are brought on board and channelling the appropriate fertiliser management, sales and marketing messages through the electronic and print media. ADMARC or SFFRFM will be entrusted with this responsibility.

- ii. The strategy will also expand its training horizon to capture those agro-input dealers who do not fall under any training programme provided by any other institution.
- iii. Adequate training of the agro-input dealers will ensure that sub-standard fertilisers are not brought on to the market.
- iv. The NFS will empower the agro-input dealers to conduct farmer training on the use and management of the fertiliser they are trying to promote. Since the government does not have adequate financial and human resources, the involvement of agro-input dealers in farmer training on fertiliser use and management will not only make their business competitive but also minimize the financial pressure the government is currently facing. In addition, the agro-input dealers are located in the area as their farmer clientele. In view of this, site-specific recommendations of fertilisers will be easy to implement.
- v. The NFS will suggest a number of tools the agro-input dealers would use in their training endeavours. For example, it is expected that NFS will encourage the agro-input dealers to intensify on farm trials (demonstrations) of the fertiliser they would like to promote, organizing farmer-farmer field tours, distributing pictorial leaflets on the use and management of fertiliser brand to ensure that the message even carters for those farmers who are unable to read and organizing informal classes.
- vi. The training will be organized in such a way that it enhances effective participation of agro-input dealers in the distribution and marketing of government/donor fertiliser program products.
- vii. The training will also be designed in promoting the advantages of small packages for all types of fertilisers for the rural outlet markets

**(c) Formation of Agro-Input Dealer Associations and Cooperatives**

The Government will strategize on how best the economies of scale of the agro-dealers could be increased. For example, the strategy will encourage the dealers to operate in groups such as associations or cooperatives so that they pool their resources and optimize on the economies of scale. By pooling resources together, the agro-input dealers will not only be in a position to strengthen their collateral security for accessing credit facilities but will be able to procure large volumes of fertiliser for sell in their retail outlets.

**(d) Build other capacities of the Agro-Input Dealers**

Apart from increasing the fertiliser productivity, the NFS is also expected to increase the capacities of the private sector to handle relatively large amounts of fertiliser than is currently the case. For instance, the NFS will be expected to increase the warehouse volume of fertilisers handled per unit time, so that in the event of the strategy inducing increased demand for fertiliser as a result of increased productivity, the volume of fertiliser handled doesn't run out of space.

The NFS will do this by taking advantage of numerous warehouses lying idle in areas where ADMARC is inactively trading and has completely withdrawn its transactions. These warehouses could be transferred to the agro-input dealers in a well-organized and scrutinized agro-input dealer's subsidy program. Chilowa (2004) observes that Malawi's poor performance of the input and output private traders is a result of inadequate financial, human and other vital resources. The subsidy programme will offer warehouses for rent to agro-input dealers at subsidised rates to compliment the distribution of fertiliser.

The strategy will try to co-opt more traders into agro-input dealership so that increase in their number correlates with increase in geographical coverage. Incentives to attract the agro-input dealers into the fertilizer trade will be encouraged. For example promoting use of vouchers in the fertilizer intervention programmes, public-private sector joint planning of the fertilizer intervention programmes and classifying fertilizer as a product of national importance.

The NFS will also set recommended standards for agro-input dealer participation in fertiliser marketing. This will ensure that farmers get the best services both from the agro dealers and the extension workers.

**(e) Plant nutrient requirement and ecological specification**

Fertilizer use in the country does not address crop nutrient requirement versus soil fertility status. The Ministry of Agriculture in collaboration with the private sector and key stakeholders should introduce cost effective fertilizer formulations and recommendations based on plant nutrient requirement and agro-ecological specifications.

**(f) Establishment of a fertilizer buffer stock**

One of the impeding factors of market supply of fertilizer on Malawi fertilizer markets identified during consultations is landlocked nature of the country which calls for a relatively long period of time between the day fertilizer orders are pressed from international suppliers and the time it lands on Malawi soils. The timely receipt of the ordered fertilizers is not only limited by long distance from the sea ports of Mozambique, South Africa and Tanzania but also because of poor and inadequate transport facilities serving the fertilizer industry in Malawi. There has been a lot of congestion of late on the international roads to Malawi making imports, fertilizer inclusive, to the country arrive late for the intended purpose. The Sena (Mozambique-Beira ) which is currently not operational has been observed as another factor. The Nacala corridor which is operational has limited warehouse and handling capacity at the port. Further more, the rail line becomes unreliable during the rain season due to frequent wash-aways. The NFS intends to go round this problem by introducing a Fertilizer Buffer Stock Programme (FBSP) with a view of

not only regulating the market fertilizer prices but also ensuring that fertilizer supply is timely available to its consumers for timely use in the fields. Initially, the programme will be initiated by the government under umbrella of the SFFRFM in which a fund will be established and serve all players in the fertilizer market. The private sector will be allowed to buy fertilizers at a wholesale price when there is a crisis for distribution through out the country. Because of the fertilizer market operators will be requested to affiliate themselves to the fund by paying a certain fee. Eventually the fund will be wholly private sector operated.

The annual demand for fertilizer will be maintained by intensifying winter cultivation through promotion of irrigation. This will ensure that the fertilizer in the buffer stock has a disposal market that in turn will stimulate continuous orders of fertilizers into the country.

### **(g) Bulk Importation**

The bulk of the fertilizer imported into this country is in granulated form containing approximately 30% of filler material which could be manufactured locally at minimal cost. With the exception of straight types of fertilizer such as Urea, Di-Amonium phosphate (DAP), Muriate of Potash (MOP) and Sulphate of Potash (SOP), the cost of fertilizer could be reduced by 40% if most of the granulated compounds were locally blended. The private sector should be encouraged to establish a number of fertilizer blending plants close to areas of utilization, at least two in the Central Region, another two in the Southern Region and one in the Northern Region particularly where raw materials for blending are available. Public-private partnership should be promoted to allow the private sector to utilize public market and storage infrastructure to house blending plants in the three regions. Ministry of Finance should consider allowing a tax holiday for five years to encourage investment in blending plants.

#### **4.5.1.3.3 Long-term Strategies**

##### **(a) Facilitate the Development of Fertilizer Plants**

##### **(i) Fertilizer Manufacturing**

Domestic production of fertilizer could be potentially an efficient and effective way of reducing the cost of fertilizer Malawi is currently facing and improve its access to the smallholder farmers. Malawi has deposits of phosphorous that could be tapped for processing fertilizer. Based on the extensive feasibility study results in which an assessment of comparative advantage of fertilizer production in Malawi will be one of the issues of interest and supply chain analysis the other, the NFS will promote the establishment of fertilizer factory production, blending and granulation industries. The critical supply chain analysis will help identify the least-cost supply chains that could be part of the fertilizer strategy especially in the component of domestic fertilizer production.

The manufacturing of fertilizer in Malawi will be a wholly private sector activity. It is assumed that the outcomes of the short-term and medium-term strategies of the NFS will increase

effective demand for fertilizer and this in turn attract the private sector operators into the fertilizer market to embark on fertilizer manufacturing. By increasing the number and production levels of fertilizer, the market fertilizer supply will eventually increase leading to ultimate decreases in the current high fertilizer prices.

Malawi does not have all the raw materials for manufacturing fertilizers. For example, Malawi does not have natural gas and sulphuric acid which are some of the major raw materials required in fertilizer manufacturing. The critical supply chain analysis will isolate the raw materials from the list that Malawi has into those that could be used to promote least cost production of fertilizer in Malawi. Since Malawi does not have enough raw materials for processing as many fertilizer types as possible, the NFS will put in place a comprehensive contingency plan for the importation of fertilizers not to be manufactured by the set up fertilizer industry especially after identifying which fertilizer types could be optimally produced in the country and which ones could not be. The contingency plan will be determined jointly with the private sector.

### **(ii) Fertilizer Blending**

The bulk of the fertilizer imported into this country is in granulated form containing approximately 30% of filler material which could be manufactured locally at minimal cost. With the exception of straight types of fertilizer such as Urea, Di-Ammonium phosphate (DAP), Muriate of Potash (MOP) and Sulphate of Potash (SOP), the cost of fertilizer could be reduced by 40% if most of the granulated compounds were locally blended. Since the current blending plant at Liwonde does not produce enough to satisfy fertilizer demand in the country, the private sector should be encouraged to establish a number of fertilizer blending plants close to areas of utilization, at least two in the Central Region, another two in the Southern Region and one in the Northern Region. Use of limestone will be promoted in the blending of fertilizers and ensure that particle sizes are uniform. The advantage of blending is that the blended fertilizer will be cheaper than granulated one. Public-private partnership should be promoted to allow the private sector to utilize public market and storage infrastructure to house blending plants in the three regions. Ministry of Finance should consider allowing a tax holiday for five years to encourage investment in blending plants.

### **(b) Develop Fertiliser Production and Marketing Information Systems (FPMIS)**

The NFS will document the scanty fertiliser production and marketing statistics and information to form a foundation of a database; set up an active data collection centre to specifically collect, analyze and disseminate fertiliser production and marketing related information and statistics which can either be owned by government or the private sector. The NFS will encourage both the public and private sectors in the industry to conduct market research in the rural areas and international arenas. The data from the international operators will help understand how the international fertilizer suppliers operate and easily promote the domestic and regional fertilizer market operators to operate jointly in a way of maximising the economies of scale.

In addition, FPMIS will sensitize the farming community, traders etc on availability and use of fertiliser production statistics and information to ensure they are able to plan properly. The fertiliser production statistics and information will be concentrated in the Fertiliser Resource

Centres (FRC) to be set up in strategic areas throughout the country. Weekly fertilizer prices, quantities in different markets and potential demand areas will be posted in these FRCs, aired on radio and be published in the print media to aid dissemination of information and enhance competition in the market.

**(c) Improve Fertilizer Credit Systems**

One way that the fertilizer credit system will be improved is by establishing the National Fertiliser Agricultural Credit Management Bureau (NFCMB). This bureau will put in place mechanisms for minimizing the wilful default element prevalent in most credit beneficiaries in Malawi. For example, the bureau will introduce and operationalize a national identify card. The national identity card will be developed in a way to prevent individuals from obtaining a number of credits simultaneously from several other lenders or use different names for accessing new loans while in default on the on-going loans elsewhere. The use of national identity cards will be integrated with initiatives that are underway to use MALSWITCH. These biometric registration systems are expected to contain high default rates associated with multiple registrations by an individual farmer in the country.

Commercial banks traditionally do not recognize rural facilities as collateral for credits and this deny the rural farmers access to credit for promoting agricultural production. The NFS intends to lobby banks to consider using permanent rural infrastructure as collateral security for credit legibility so that farmers in rural areas will be able to access credit facilities. The strategy will also promote non-traditional high value crops among the smallholder farmers to increase farmer's cash flow, which will be tendered for credit legibility at the commercial banks. Consideration for loan for beneficiaries of Malawi origin will also be promoted in the implementation of the NFS. This is expected to minimize capital flight from the fertilizer industry.

Multi-party democracy in Malawi has been associated with high default rates in Malawi. This has led to collapse of many credit systems. The NFS will intensify education campaigns on the benefits and disbenefits of effective loan repayments and defaults respectively. The farmer organizations such as farmer clubs, cooperatives or associations will be the entry points for these education campaigns. The farmer organizations will also used as entry points and collateral securities for credit access. Banks will issue credit to the farmer organizations and not individuals. In the same manner, loan recoveries will be a responsibility of the farmer organizations that signed for the loan from the bank. Apart from that, the farmer organizations will be used as vehicles for disseminating fertilizer related technologies.

**(d) Improve Micro-economic and Macro-economic Policy Management**

This could be achieved by increasing the availability of foreign exchange. Malawi for a long time has been dependent for foreign exchange on mono-modal rainfall pattern and on tobacco exports in particular. Tobacco, as a principle foreign exchange earner generates a narrow window between April and July within which all finances for agricultural input imports have to be raised and secured. There is, therefore, need to diversify the range of enterprises over the year

and also intensify irrigation of a number of high value key crops that would provide alternative sources for foreign exchange.

Malawi is a small open economy and as a 'price-taker', cannot influence prices of its tradable products on the world market. Apart from improving infrastructure such as the transport system (road network & railway), warehousing, and the quality of products and value addition, foreign exchange availability and quantity could be increased by making the country's products more competitive through a devaluation of own currency strategy. Between 1995 and 2004, empirical evidence demonstrates an increase in the volume of exports in Malawi, although the rise was lower than the growth in imports in monetary terms resulting in the negative current account balances (Killick, 1995). In the stabilization program, the exchange rate policy management using devaluation of currency, constricts import levels and increases exports through its expenditure switching mechanism. Although these improvements have not been able to eliminate the running of a current account deficit, the country should continue to explore exchange rate policy of currency devaluation. Prudence in government expenditure could complement these efforts and promoting stability in the exchange rate by making appropriate monetary and fiscal policies.

The Ministry of Agriculture and Food Security will liaise with infrastructure services project to improve road and market infrastructure in rural areas to buffer the transport costs currently forming a major component of the fertiliser prices. The current road network is inadequate and in poor state. Because of this, the private sector fails to penetrate the remote areas of the country to supply fertilizers and makes fertilizer prices to be very high. The NFS will facilitate the improvement of rural road network and market infrastructure by promoting community based rural infrastructure repairs and maintenance, public works programme and private-public sector partnership in the development of rural infrastructure/communication.

The Malawi Government in collaboration with the Mozambican and the Zambian Governments will also prioritise infrastructure development in the Nacala Corridor to ensure maximum utilization of the Nacala and Beira Rail Lines and the Shire-Zambezi Waterway to increase the country's access to sea ports of Mozambique.

**(e) Promote Integrated Use of Organic and Inorganic Fertilizer**

Although the use of inorganic fertilizer immediately replaces the mined crop nutrients, it does not improve the physical characteristics of soil and this limits its productivity. The NFS strategy will intensify the use of both inorganic and organic fertilizers in the name of conservation farming in order to reverse this problem. While the inorganic fertilizer will quickly replace the mined soil nutrients, the organic fertilizer through conservation mechanisms will play the role of improving soil granulation, which eventually increases soil productivity. In the long run, organic fertilizer will also release nutrients to the soil and hence improve its fertility. The amount of inorganic fertilizer to be applied will decrease. This will be a cost-effective way for farmers in using inorganic fertilizer whose costs are high. The incorporation of herbicides in conservation farming will mean reduced demand for labour services. With the increasing effect of HIV/AIDS on availability of labour for agriculture activities, incorporation of conservation farming the strategy will be a viable option.



#### **(f) Strengthen Fertilizer Regulatory Framework**

The observed super-normal profits by fertilizer dealers results from inadequate competitive practices accentuated by high collusion amongst the traders. This calls for the Government of Malawi to play a role of regulatory-monitoring in the fertilizer market. The quality and standards of fertilizer in the fertilizer markets in Malawi are questionable. The NFS will facilitate the formation of Malawi Fertiliser regulatory Board (MFRB) to provide regulatory services on the fertilizer market. MFRB will monitor the adherence of players in the fertilizer market to the stipulated operational conditions. A bill will be drafted to lead to the establishment of the MFRB. Collection and analysis of soil samples and training of technicians will be promoted to increase the capacity of the MFRB to effectively regulate the fertilizer market. The MBS role will be to set standards.

The NFS will facilitate the improvement of fertilizer production and storage capacity by lobbying private sector into fertilizer and warehousing investments. It will also set standards in the fertilizer production and packaging areas as well as storage. Awareness campaigns on appropriate standards will be promoted alongside provision of soil analytical services to facilitate the development of new fertilizer recommendations. Utilisation of the recommended fertilizer will be promoted developing a fertilizer guide for Malawi.

#### **(g) Regulate Fertilizer and Output Prices**

High fertilizer prices currently bar farmers from accessing adequate amounts of fertilizer negatively affecting agricultural development. High handling costs resulting from inadequate and poor road network and warehouses are responsible for these high fertilizer prices. The private operator's motive to make high profits especially in rural remote areas aggravates this situation resulting in low effective demand for fertilizer. The low effective demand is also an issue of low farmer liquidity mainly associated with low producer prices resulting from oligopolistic traders operating in the rural output markets.

The NFS will promote the setting up of maximum prices for fertilizer to improve accessibility of by farmers.

In output markets, the NFS will promote the use of floor prices to ensure that farmers realise reasonable income from their agricultural produce. The government has already embarked on the price support programmes by introducing minimum prices for the strategic food and cash crops. This strategy will reinforce this approach to ensure that farmers benefit from their production.

#### **4.5.1.4 Intervention Description**

The NFS will build capacity of farmers, agro-input dealers and the private sector suppliers of fertiliser. In this respect NFS will promote the formation of associations among fertilizer dealers and farmers. These associations will play a major role as entry points in the delivery of services such as farmer and agro-input dealer trainings, sensitization meetings.

In addition to the above, NFS will undertake needs assessment to assess the level of capacity of farmers and the private sector involved in the fertiliser business.

NFS will also ensure that information and statistics is made available to all players in the industry to enable them to make informed decisions.

In trying to enhance the financial capacity of both farmers and the private sector and the agro-input dealers in particular, the NFS will put in place mechanisms for linking them to the lending institutions and improving credit management by minimizing the default rate currently observed at an increasing rate. The NFS intends to influence the NFACMB formation and one of its objectives will be to facilitate the introduction of a national card identity. The other objective is to expand and improve the MALSWITCH program. The NFACMB will also ensure that cheaper credit is available for the agro-input dealers and farmers. It will do this by lobbying with the Reserve Bank of Malawi on possibilities of lowering the cost of credit to reflect the vibrancy of the economy.

#### **4.5.1.5 Identification of Key Players**

Poor resource smallholder farmers, private sector national fertiliser suppliers, agro-input dealers, Government of Malawi and the public companies will be the key players in the implementation of the NFS.

In any fertilizer related intervention participatory methods will be used to identify farmer beneficiaries. In this regard Area Development Committees (ADC) and Village Development Committees VDC) will be empowered to undertake these responsibilities. The same will apply in all social protection/safety net programs.

#### **4.5.1.6 Key Activities**

##### **(a) Sensitisation Campaigns**

The NFS will conduct a number of sensitization meetings and workshops for the government program implementers, ADMARC, SFFRFM, VDCs, ADCs, DDCs, AFCs, VFCs, beneficiary farmers, FFAM, agro-input dealers, national fertiliser suppliers and FTAM. These meetings will give highlights on modalities of the NFS implementation, monitoring and evaluation.

##### **(b) Beneficiary Farmer and Agro-input Dealer Identification**

While a census will be used in taking stock of the agro-input dealers and their financial legibility to benefit from the WSP, beneficiary farmers will be identified by poverty targeting approaches. As for beneficiary farmers, this will ensure that the number identified does not exceed the planned size of the subsidy.

##### **(c) Fertiliser Production and Marketing Survey Conduction**

For all players to make informed decisions in the fertiliser market, information asymmetry should be reduced. Provision of information to the players would facilitate the attainment of this objective. It is for this reason, that the NFS will put in place mechanisms for conducting domestic and international fertiliser production and marketing surveys, analyze the data and disseminate the fertiliser production levels and price information to the fertiliser market players. The NFS will also put in place mechanisms for developing fertiliser production and marketing databases.

**(d) Formation of Clubs and Associations**

Clubs and associations for beneficiary farmers, agro-input dealers and other private sector players will be instrumental in planning and implementation of the NFS program. For example, clubs and associations will facilitate implementation of sensitization campaigns, program reviews, re-planning, implementation and monitoring of the program. VFCs, AFCs, FFAM, AFAM and FTAM are among some of the organizations, which will facilitate implementation of the NFS program activities.

**(e) Voucher Production and Management**

For the market approach to work, the voucher system will have to be effective and efficient. The NFS will select capable private sector organizations that are in a position to handle and manage the program without any difficulties. These will be identified through a tender system. ADMARC and SFFRFM will also be allowed to participate in the voucher system of subsidy implementation. These will cover areas where the private sector finds it difficult to conduct their transactions at a margin.

**(f) Procure and Distribute the Subsidy Fertilisers**

The 2005/06 Input Subsidy Program sold 147,000 Mt of fertiliser to its beneficiaries on voucher system. Taking into account higher levels of poverty in which 60% of the Malawi population lives below the poverty line and rising prices of fertiliser due to the effect of currency devaluations and higher transport costs, the NFS will explore the opportunity of increasing the subsidy package. This will increase the number of beneficiaries and hence increase the possibility of increasing food security for many households.

Optimal use of the subsidy is crucial to achieving the motives of fertiliser accessibility and affordability. The NFS will put in place mechanisms of ensuring that their procurement is timely done to in turn facilitate timely distribution and application. The issue of timeliness will be attained by making sure that the procurement is shared amongst various dealers. Among them will be ADMARC, SFFRFM and those companies from the private sector who will be given an offer from the open tender system. The NFS will put in place mechanisms of liaising with the private sector through the FTAM to ensure that procurement is taken into account for the gap to

be established between the potential demand for fertiliser and the amount FSP and IAP will procure and manage. This will ensure that fertiliser supplies tally with the effective demand. In so doing, this will protect the FSP and IAP fertiliser from being mismanaged.

**(g) Form Farmer Organisations and NFCMB**

Political interference in the credit system at the beginning of the multiparty democracy in the 1990s made the credit recovery rate to fall as low as 25%. Since then, the recovery rate records have not picked up for most credit institutions. In addition, the cost of credit is too high for most farmers. Interest rates have gone up as high as 49% for some lending institutions. Using NFCMB, the NFS will reverse this by introducing national identity cards and MALSWITCH for systemically identifying the credit beneficiaries. It will also aim at lowering the cost of credit lobbying from the Reserve Bank lower borrowing rates. The formation of farmer's and trader's fertilizer groups will be promoted in the NFS to ease the delivery of services to these groups.

**(h) Train Farmers, Extension Workers and Agro-input Dealers**

The NFS will organize various informal classes for farmers, extension workers and agro-input dealers to ensure efficient handling, use and management of fertilisers. VFCs, AFCs, FTAM, AFAM and FTAM will be entry points for training them. Own demonstrations, field days, agriculture shows, leaflets and radio/TV program, complement the informal classes.

**4.5.1.6 Performance Indicators**

Some of the performance indicators that will show achievement of the program objectives are as follows: number of poor resource households benefiting from IAP increased; number of households benefiting from FSP increased; average nutrient use per hectare of fertiliser increased from the current levels of 43kg; number of farmer associations operational; number of agro-input dealer associations operational; volume of fertiliser distributed by agro-input dealers; warehouses operated by agro-input dealers; number of farmers and private sector operators serviced by the fertiliser production and marketing information system; number of farmers and agro-input dealers serviced by the NFCMB; default rate for fertiliser credits moving towards zero; volume of credit increased and number of private sector operators involved in voucher system of selling fertiliser increased.

**4.6.1.4 Implementation Timeframe**

The NFS is planned to run for a period of five to ten years after which it will be reviewed.

**4.6.1.5 Proposed Funding Mechanisms**

The NFS activities are expected to run on government but supplemented by the donor initiatives.

#### **4.6.1.6 Monitoring and Evaluation Systems**

A baseline survey will be conducted in the base year of the NFS implementation period. A household survey and stakeholder consultations will be used in order to consolidate baseline data. A baseline report will be distributed to all the stakeholders to facilitate implementation of the program. The data and analyzed statistics for the baseline will be a precursor for the intended fertiliser production and marketing information system to be set up in the Ministry of Agriculture and Food Security.

In the implementation phase of the program, fertiliser production statistics, fertiliser imports, fertiliser price data, and quantities marketed, fertiliser utilization, produce prices and production volumes and quantities marketed among others will be summarized from administrative reports. Multi-stakeholder review meetings will be conducted on quarterly basis. Verification visits will also be used to see what happens in different stakeholder arenas. The existing structures in various stakeholders will be deployed to collect monitoring data. A data sharing system and reports will be put in place coordinated by the Ministry of Agriculture and Food Security where the fertiliser production and marketing information systems will be housed. Targeted monitoring surveys will be conducted every 6 months complemented by annual evaluations.

#### **4.6.2 Rural Input Dealer Network Development**

The private sector is said to be the engine of growth that benefits the poor. This, it does, by unveiling economic opportunities to them and letting them access essential services. The private sector is able to do this in a situation where it has the necessary enhanced capacity. Normally, capacity building comprises a systematic combination of human resources, working systems and institutions that lead to attainment of strategies and objectives in an economy. In the case of the NFS of Malawi, a systematic combination of human resources, working systems and institutions is likely to result in increased crop productivity, which may eventually increase food security and incomes at household and national levels. The NFS will, therefore, make sure that a viable agro-input dealer network thrives in the country.

##### **4.6.2.4 Linkages between Input and Output Markets**

###### **(a) Fertiliser Accessibility in Rural Areas**

Despite the presence of over a 1000 retail fertiliser outlets across the country, many rural areas are not fully covered and farmers have to travel approximately 10-50 km to look for fertilizer supplies. Most of the fertilisers are usually sold in 50kg bags thereby making it difficult for poor resource farmers in the rural areas to access the commodity. The NFS will lobby for packaging fertilizer in small packs and opening of more retail outlets in rural areas. It will also promote competitive agricultural produce pricing in output markets to increase farmer's liquidity so that they access more fertilizer for increased productivity.

###### **e) Linkages with International Markets**

The fertiliser market in the country taken alone is too small to allow multiple high volumes, low-cost importers to compete. Studies have shown that imports from low cost world fertiliser markets are significantly lower for shipments on consignments of 15,000-30,000 tonnes at a go for a single product. However, only 1-2 shipments of that size can be absorbed in the country and this hinders others companies to import and compete. Most companies in Malawi, import relatively small volumes of high cost fertilisers.

This is worsened due to the nature of Malawi fertiliser marketing system which has inadequate linkages with the international markets and very little global information does exist to facilitate fertiliser trade between countries. The situation leaves very little choice for the country's importers hence even high cost inputs are imported thereby resulting into exorbitant fertiliser prices.

To facilitate the adequacy of fertilisers in the country in the medium term, integration of controlled regional markets can cut costs by allowing more large-volume low-cost imports and can also cut costs by allowing traders to move fertilisers across borders from time-to-time based on unexpected and particular supply and demand conditions that develop over a season. However, this strategy has to be implemented with well-versed regulations on quality and pre-shipment inspections and other issues relating to subsidizing the agricultural inputs.

#### **4.6.2.5 Private Sector Development**

##### **(a) Quantity of Fertiliser Handled By Agro-Dealers**

Since 1992, the private sector has handled up to 208,183MT of different types of fertilisers. Urea, and 23:21:0+4S of all the fertilisers appear to have been handled in the largest quantities both estimated at 24% of 13 year total. CAN put at 17% of the total ranks the second in the amount of fertilisers used. The common use of 23:21:0+4S, Urea and CAN in relative terms could largely be linked to their use in maize, a staple crop grown by the majority of Malawians as observed by Nyirongo et al 2003.

##### **(b) Farmer Resource Capacity**

Smallholder farmers' income sources are quite diverse. Sale of crops, ganyu wages and small business constitute the main sources of cash income. However, smallholder purchasing power is still very low as they do not realize much income from these sources as result of market failures. Due to poor linkages to input and output markets as a result of poor infrastructure network, smallholder farmers are not able to access competitive markets for their commodities. This problem is aggravated by weak bargaining power due to poor farmer group organization, poor and inadequate infrastructure and financial resources. The NFS will strengthen these farmer organizations so that they are entry points for credit facilities and other services.

##### **(c) Farmer Training by the Agro-input Dealers**

Much of the farmer training on fertiliser use and management both in the pre and post-structural adjustments programs in Malawi has been the responsibility of the government. The agricultural extension staffs have been the core link between the knowledge generated by research and the farmers on fertiliser use and management. Among others, the fertiliser messages are documented in the guide to agricultural production where specific fertiliser grades are outlined. This approach fitted best in the time before trade liberalization when the market was closed and operated by a few monopolists. In the open market system, competition would be enhanced if the private sector were left to develop and promote specific grades of fertiliser that provide the necessary nutrients to a given crop. In this way, the government would be concentrating its resources on regulating the nutrient recommendations for particular crops (IFDC, 2005).

#### **4.6.2.6 Legal and Regulatory Framework**

The deregulation and marketing of fertiliser market in Malawi was set in 1990/91 when private sector was allowed to import larger quantities of fertilisers through issuance of licenses. The deregulation and liberalization of domestic marketing activities was completed in 1994/95 with a complete removal of subsidies and price controls from the fertilizer markets. For some time, to import and market any type of fertiliser anywhere in Malawi, any private individual or firm was only required to go through a simple registration process. However, in practice the requirement was hardly enforced. Government efforts to, eventually privatize the parastatals involved in fertiliser marketing are still in progress.

Private sector has responded to these initiatives and a number of companies have been in business for several years. However, since the parastatals are still in operation and there is frequent intervention in the market in form of free distribution of fertilisers and seeds, this creates uncertainty for private sector investment.

The policy framework on liberalization of the fertiliser market remains unclear due to government interventions in the form of subsidized or free fertiliser and seed giveaways through APIP and Starter Pack and recently universal fertiliser subsidy and these disturb the market. Private sector hesitates to bring in additional or fresh investment into the business in this environment.

## **CHAPTER 5: CONCLUSION AND RECOMMENDATIONS**

The ADMARC restructuring and its consequential closure of some markets should be conducted in phases to allow the emerging small scale business acquire experience in trade

Malawi realises that growth in agriculture production would reduce the frequency of food crises that the country has been experiencing over the years. However, this would be impossible if the current low levels of fertiliser uptake persist. The fertiliser uptake has been very low compared to the potential that the country has.

The proposed NFS intends to reverse this situation by increasing availability, affordability and access to fertilizer by farmers, improving fertilizer quality and standard, increasing farmer and private sector capacity in fertilizer utilization and production and marketing respectively, improving the synchronization process of crop nutrient requirements with soil fertility levels, facilitating the improvement of infrastructure, increase fertilizer profitability amongst farmers and the private sector operators and enhancing agricultural diversification among smallholder farmers.

A number of short to medium and long-term strategies will be adopted to achieve this dream. Among these strategies will be improvement in implementation of fertiliser intervention programmes for 5-10 years, farmer and agro-dealer training in fertilizer use, handling, management and marketing, development of fertilizer production and marketing information systems, improvement of fertilizer credit systems, improvements in macro-economic management, promotion of integrated use of organic and inorganic fertilizer and strengthening of fertilizer regulatory framework.

A fertilizer buffer fund has also been proposed in the NFS to ensure continuous supply of fertilizer in the country and also ensure that acquired fertilizer is used timely. The NFS further proposes the domestic production of fertilizer. It, however, realises that they are a lot hiccups associated with this venture. Because of that, it has been suggested that there is need to undertake fertilizer production comparative studies and critical supply chain analyses to identify entry points for the NFS.

The proposed NFS, it is assumed, will stimulate the private sector development whose ultimate impact will be increased fertilizer availability, accessibility and utilization by farmers in rural areas while accelerating agricultural development and reduce the private sector's reliance on the fertilizer government programmes.

Fertilizer operators should be encouraged to procure the fertilisers during the period when the international prices are low.

Some of the public warehouse facilities should be transferred to the private sector operators in the fertilizer market as incentives to them to increase competition amongst them and eventually increase fertilizer availability.



The proposed fertiliser Act shall be presented to parliament as soon as possible for passing to enhance the fertiliser regulatory system. Government will have to enforce all fertiliser regulations in the fertiliser Act once it is passed. The strategy calls for the formation of the MFRB expected to strengthen monitoring of the fertilizer regulations.

The role of the private sector in fertiliser distribution and marketing in Malawi is currently concentrated in the main trading centres mostly along the main roads with few small-scale agro – dealers scattered in few selected rural areas. It is therefore recommended that they too should spread their activities into the remote areas by establishing seasonal selling points in event of the rural infrastructure undergoing some improvements under the NFS programme. The NFS will lobby for the improvement and development of rural infrastructure from the Infrastructure Services Project embarked upon by the government.

As evidence has shown that fertiliser prices have skyrocketed making it difficult for the masses of the poor farmers who live on less than a dollar a day to access fertiliser, the government should continue with its fertiliser programs such as fertiliser subsidy. This promotes access to fertiliser and therefore improves food security. A 5-10 year period has been suggested. This should be reinforced by the output price support programmes the government has already started operating such as minimum prices for the strategic food and cash crops.

The government should strengthen credit systems to farmers. This should be in the form of expanding access to agricultural credit and use of rigorous procedures in credit recovery

## ANNEXES

**Table 1: Mean and Median Annual Households Expenditure**

HOUSEHOLD BACKGROUND CHARACTERISTICS, MALAWI 2005	Households		Per Capita		
	Mean (MK)	Median (MK)	Mean (MK)	Median in (MK)	
<b>Malawi</b>	99,532.20	72,279.50	26,058.60	18,509.50	
Households Sex : Male	107,595.40	78,027.08	26,817.90	18,896.40	
Female	72,499.09	54,961.07	23,522.20	17,482.60	
Residence Place: Urban	191,303.50	11,258.40	52,594.40	31,43.10	
Rural	87,066.10	68,504.00	22,454.00	17,467.20	
House per capita expenditure quintile	1 <sup>st</sup>	46,049.10	43,181.80	7,394.60	7,884.20
	2 <sup>nd</sup>	61,077.70	58,496.40	11,724.20	11,690.10
	3 <sup>rd</sup>	75,908.50	71,107.60	16,188.70	16,997.80
	4 <sup>th</sup>	94,790.50	84,859.70	22,861.50	22,619.10
	5 <sup>th</sup>	173,621.00	124,482.50	54,793.00	41,397.20

Source: 2004/05 IHS data and information

**Table 2: Indices of Inequality in Consumption**

	Gini Coefficient <sup>8</sup>	Consumption of Group as Percentage of Total Consumption of Population	
		Poorest 20%	Wealthiest 20%
National	<b>0.40</b>	<b>6.3</b>	<b>46.8</b>
Rural	<b>0.37</b>	<b>6.7</b>	<b>44.3</b>
Urban	<b>0.52</b>	<b>4.5</b>	<b>58.4</b>

Source: Government of Malawi (2000) Profile of Poverty in Malawi: Poverty Analysis of the Integrated Household Survey

**Table 3: Yield Gap between Smallholder Farmers and Research on Selected Crops**

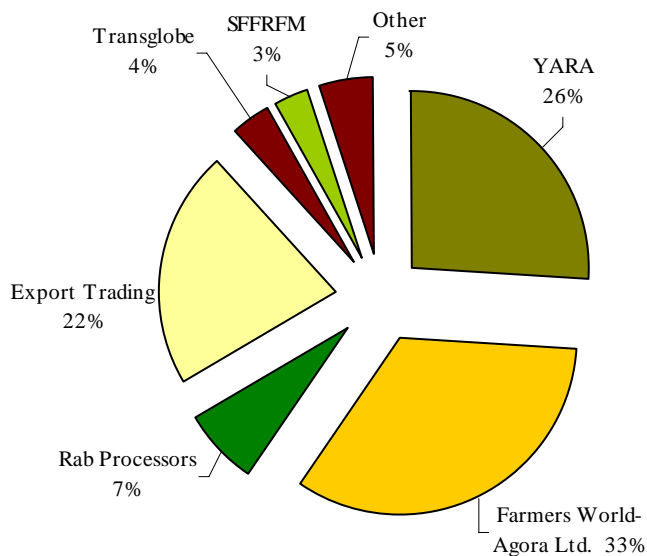
<sup>8</sup> The 1997/98 Gini-coefficient cannot be compared with the 1991/92 Gini-coefficient of 0.62 due to methodological differences.

Crop	Average Farm-level Yield (kg/ha)	Research Yield (kg/ha)	Ratio of Actual to Potential yield
<b>Maize:</b> Local Maize	838	3,000	1 : 3.6
OPV Maize	1800	5,000	1 : 2.8
Hybrid Maize	2,195	10,000	1 : 4.6
<b>Pulses</b>	564	2,000	1 : 3.6
<b>Groundnuts</b>	750	1,750	1 : 2.3
<b>Rice</b>	1,250	3,750	1 : 3.0
<b>Tobacco:</b> Burley	1500	4,000	1 : 2.7
Flue-cured	1700	3,000	1 : 1.8
<b>Cotton</b>	880	2,400	1 : 2.7

*Sour*

*ce: Ministry of Agriculture, Irrigation and Food Security (2003).*

**Figure 1: Private Sector Market Share of Fertiliser Imports in 2004/5**



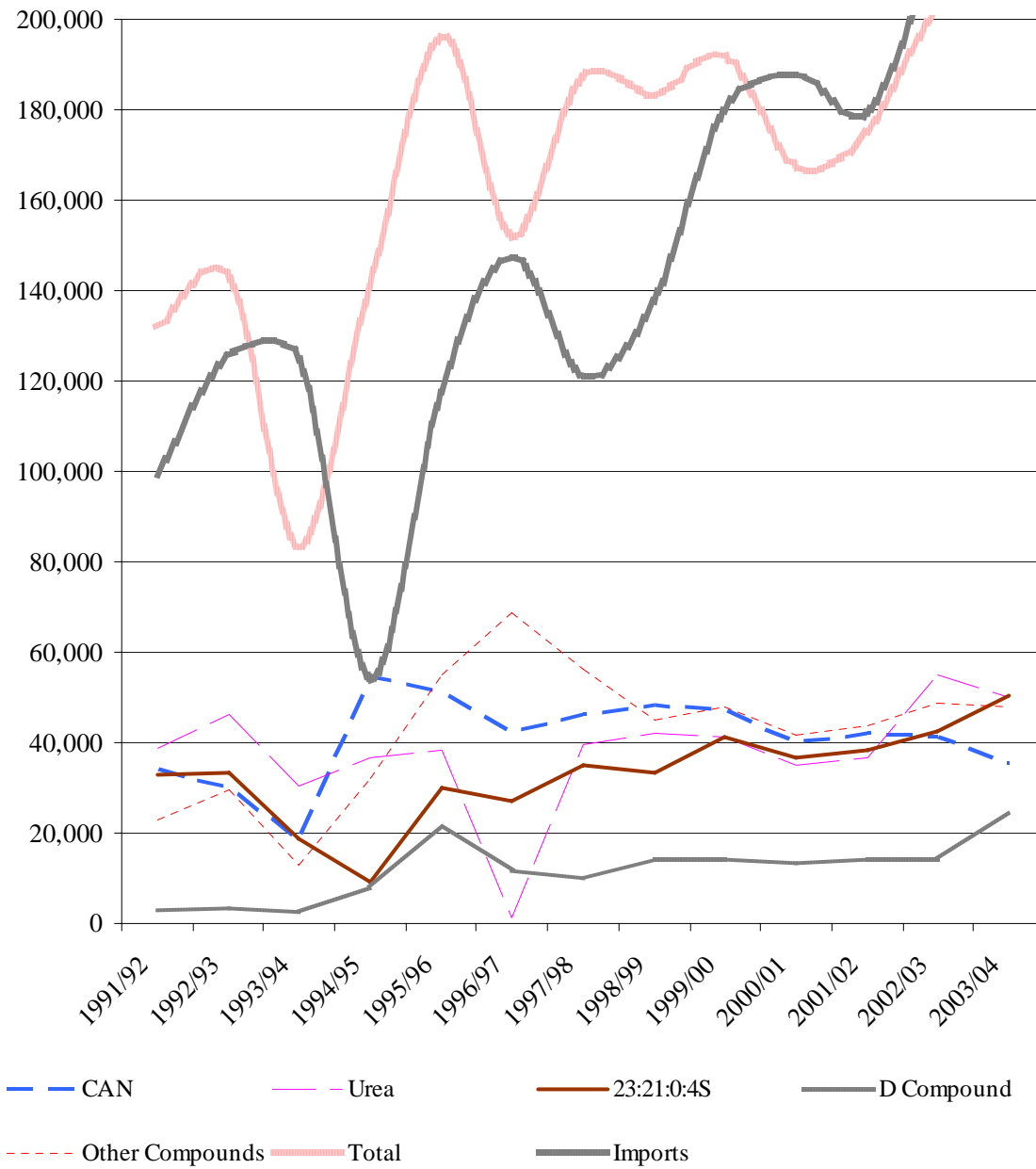
<b>Table 4: Historical Fertiliser Sales in MTs (as a measure of consumption )</b>													
<b>Type of Fertiliser</b>	<b>1991/92</b>	<b>1992/93</b>	<b>1993/94</b>	<b>1994/95</b>	<b>1995/96</b>	<b>1996/97</b>	<b>1997/98</b>	<b>1998/99</b>	<b>1999/00</b>	<b>2000/01</b>	<b>2001/02</b>	<b>2002/03</b>	<b>2003/04</b>
CAN	34,3	29,997	18,204	54,46	51,125	42,580	46,125	48,350	47,225	40,05	41,964	41,211	35,480
Urea	38,6	46,227	30,514	36,73	38,167	1,438	39,450	42,116	41,150	35,044	36,719	55,131	49,914
Ammonium Sulphate	3,3	2,977	1,865	3,14	13,900	6,855	7,510	6,950	8,120	6,675	6,994	10,952	12,491
Nitrate of Soda					79	44	50	69	65	50	52	273	-
Potassium Nitrate				73	162	112	95	122	116	100	105	648	-
Ammonium Nitrate					151	8,561	6,760	7,210	5,115	3,338	3,497	3,022	833
DAP	19,0	26,042	10,701	19,26	19,612	866	2,115	1,195	3,119	2,670	2,798	4,834	1,603
TSP					1,379	451	-					114	296
SSP					176	203	200	195	150	117	122	30	78
MAP												1,962	109
MOP				50	2,287	15,169	11,125	9,150	10,212	10,346	10,841	4,225	6,067
SOP				10	150	24	50					1,100	85
23:21:0:4S	33,0	33,494	18,757	9,28	30,067	27,189	35,145	33,188	41,120	36,711	38,467	42,478	50,565
3:02:01				40	188	357	-						
0:22:30				9	8							86	86
B compound	40	346	263	34	245	100							
Super B compound				5	4,032	100							
C Compound				1,00	698	390	415	365	318	167	175	481	481
Super C compound				15	698	387						221	221
D Compound	2,8	3,421	2,676	8,05	21,588	11,613	10,114	14,150	14,251	13,350	13,988	14,108	24,440
Super D Compound				5,00	8,686	9,434	8,459	8,150	6,288	6,008	6,295	7,802	7,735
Super J Compound					1,053	491						1,000	870
S Compound	8	101	92	1,30	1,461	1,065	965	1,114	1,255	1,001	1,049	241	344
NPK20:11:16					121	219						9,054	5,369
Dolomite lime												2,609	450
Other Compound						23,826	18,348	10,452	13,148	11,348	11,890	216	10,666
<b>Total</b>	<b>131,6</b>	<b>142,603</b>	<b>83,072</b>	<b>140,64</b>	<b>196,033</b>	<b>151,474</b>	<b>186,926</b>	<b>182,776</b>	<b>191,652</b>	<b>166,978</b>	<b>174,957</b>	<b>201,798</b>	<b>208,183</b>
<b>Imports</b>	<b>99,000</b>	<b>125,400</b>	<b>124,700</b>	<b>53,942</b>	<b>117,700</b>	<b>147,185</b>	<b>120,736</b>	<b>137,497</b>	<b>179,570</b>	<b>187,530</b>	<b>179,275</b>	<b>215,026</b>	

**Table 5: Potential fertilizer demand in Malawi based on recommended rates of application and hectareage cultivated**

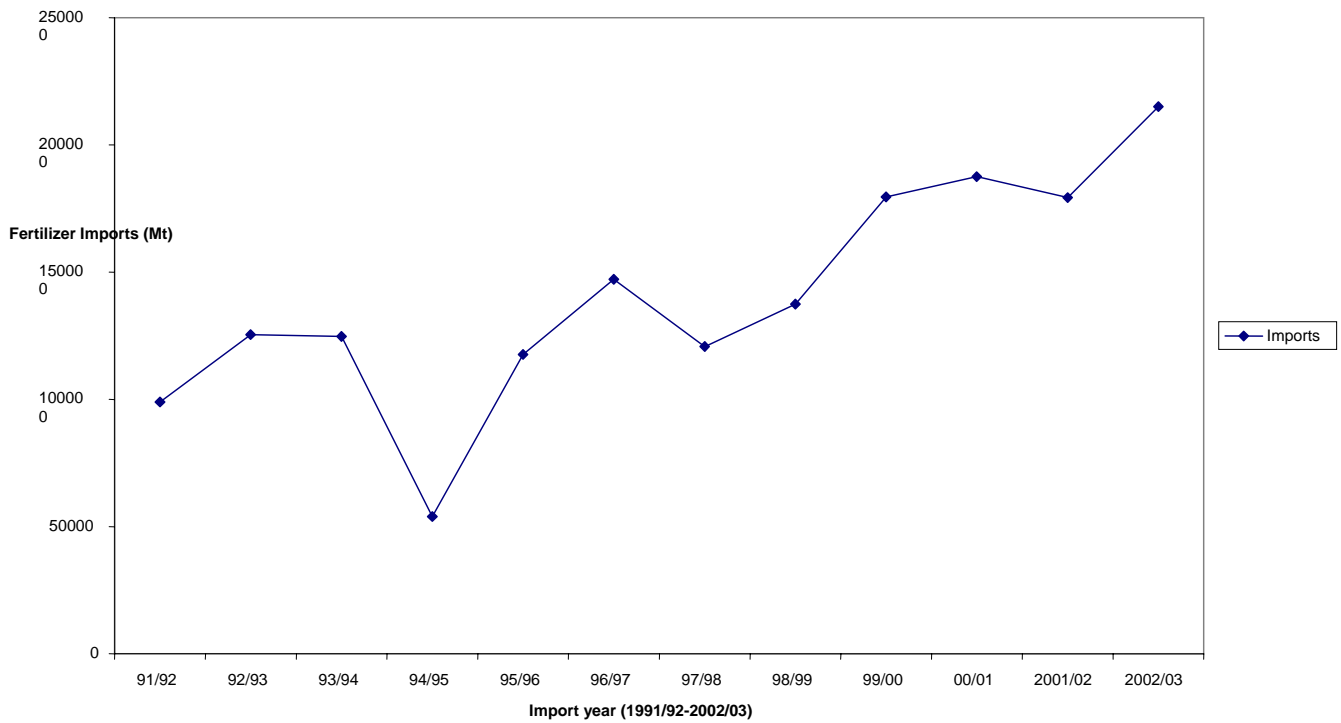
<b>Input Type</b>	<b>Crops</b>	<b>Recommended application rate. (kg/ha)</b>	<b>Estimated Area cultivated (ha)</b>	<b>Estimated required amounts (Mt)</b>
<b>Basal application</b>				
23:21:0+4s	Hybrid Maize	200	354,921	70,984
DAP	Local Maize	22	912,751	20,081
UREA 46%N	Local Maize	44	912,751	40,161
23:21:0+4s	Sorghum	200	67,937	13,587
23:21:0+4s	Finger millet	200	35,165	7,033
23:21:0+4s	Wheat	100	2,483	248
23:21:0+4s	Phaseolus beans	200	171,663	34,333
DAP	Soyabeans	100	40,829	4,083
compound s	Soyabeans	200	40,829	8,166
23:21:0+4s	Sunflower	200	3,898	780
DAP	Cotton	100	45,023	4,502
D Compound	Tobacco	600	105,000	63,000
DAP	Sorghum	300	67,937	20,381
DAP	Rice	50	41,770	2,089
UREA 46%N	Rice	65	41,770	2,715
MOP 60%K2o	Sugarcane	300	15,000	4,500
DAP	Sugarcane	300	15,000	4,500
<b>Top dressing</b>				
UREA 46%N	Hybrid Maize	150	354,921	53,238
CAN 27%N	Local Maize	150	912,751	136,913
UREA 46%N	Sorghum	50	67,937	3,397
UREA 46%N	Finger millet	50	35,165	1,758
CAN 27%N	Wheat	100	2,483	248
CAN 27%N	Sunflower	90	3,898	351
AS 21%N24%S	Cotton	100	45,023	4,502
CAN 27%N	Tobacco	400	105,000	42,000
AS 21%N24%S	Rice	45	41,770	1,880
AS 21%N24%S	Sugarcane	100	15,000	1,500
<b>TOTAL (MT)</b>				<b>546,929</b>

*Source: IFDC - the Malawi Agricultural Input Markets Development Project (AIMS)*

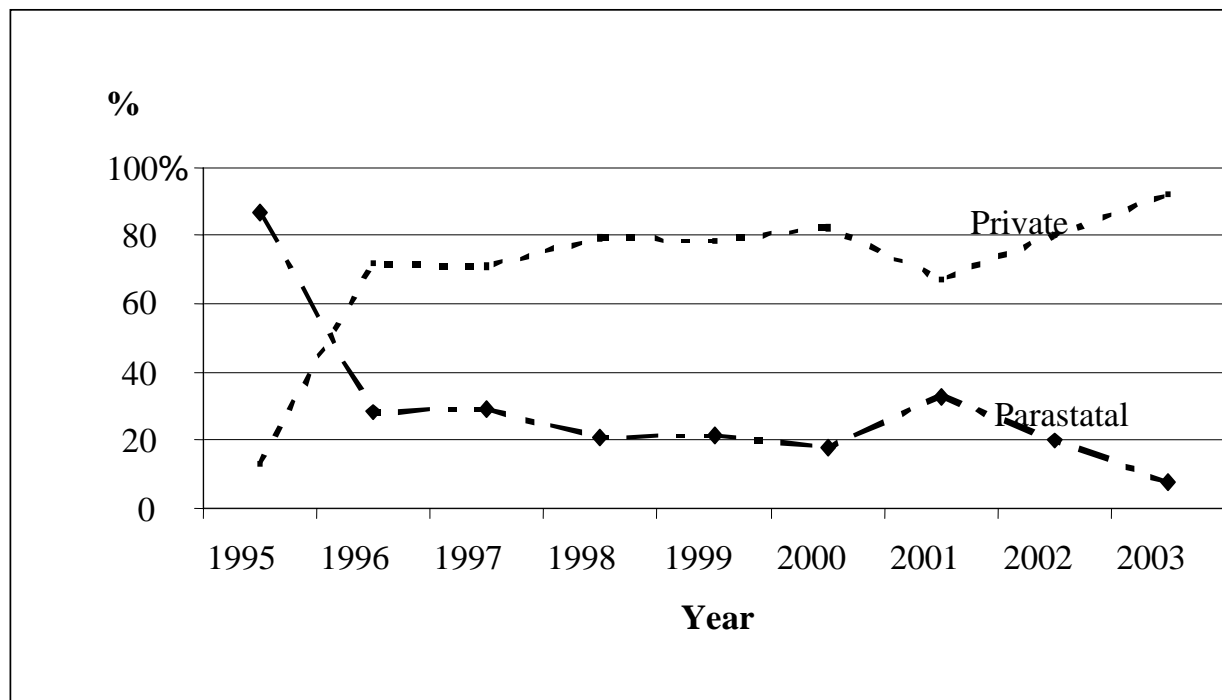
**Figure 2: Private and public sector fertilizer sales as a measure of consumption against imports**



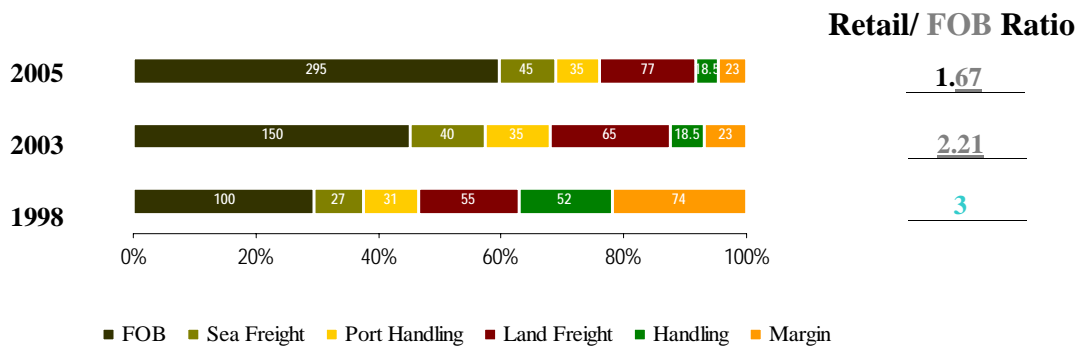
**Error!** Figure 3: Fertilizer Imports in the past 10 years



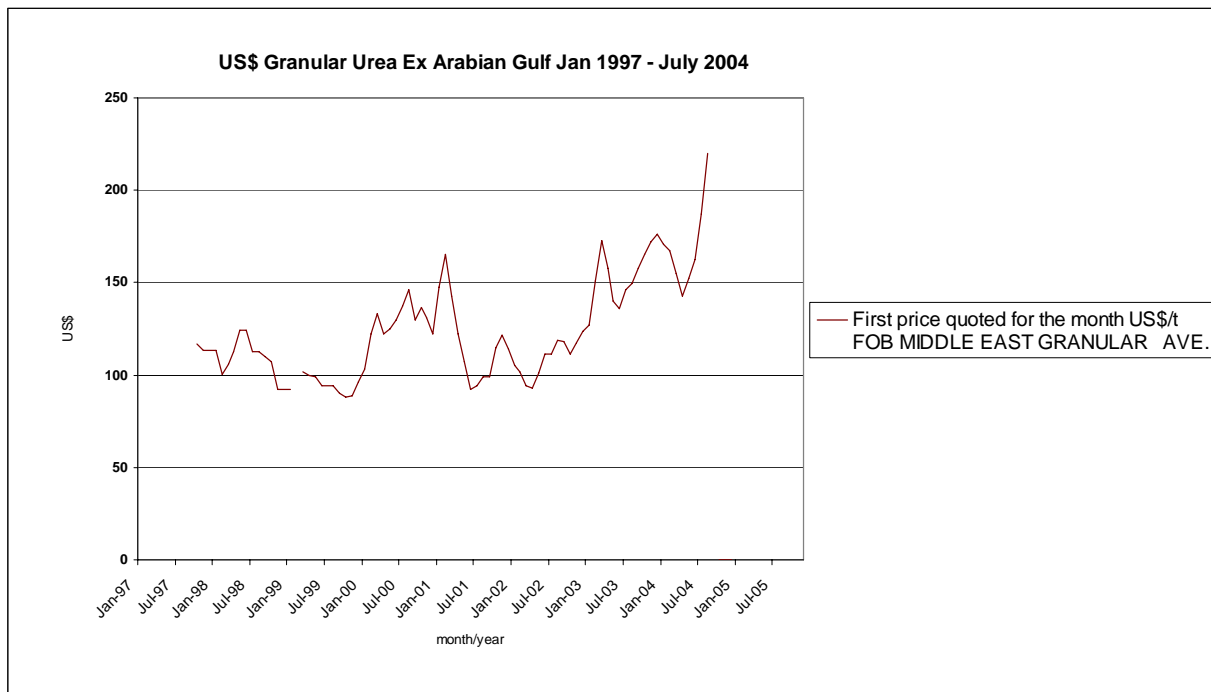
**Figure 4: Percentage share of fertilizer market after liberalization**



**Figure 5: Cost chain analysis for the retail price of UREA fertilizer in Malawi for 1998, 2003 and 2005.**



**Figure 6: Granular Urea Prices ex-Arabian Gulf by time (Jan 1997 – Jul 2004).**





**Table 6: shows a pre-feasibility study on the estimated cost of mining Apartite rock for the production of concentrate P<sub>2</sub>O<sub>5</sub>**

Item	US\$ per tonne
Mine	1.78
Plant	5.75
Power	1.70
Electricals and Mechanics	0.72
General Services	0.54
Administration	0.76
<b>Sub Total</b>	<b>11.25</b>
<b>Plus Mark up (min 20%)</b>	<b>13.5</b>

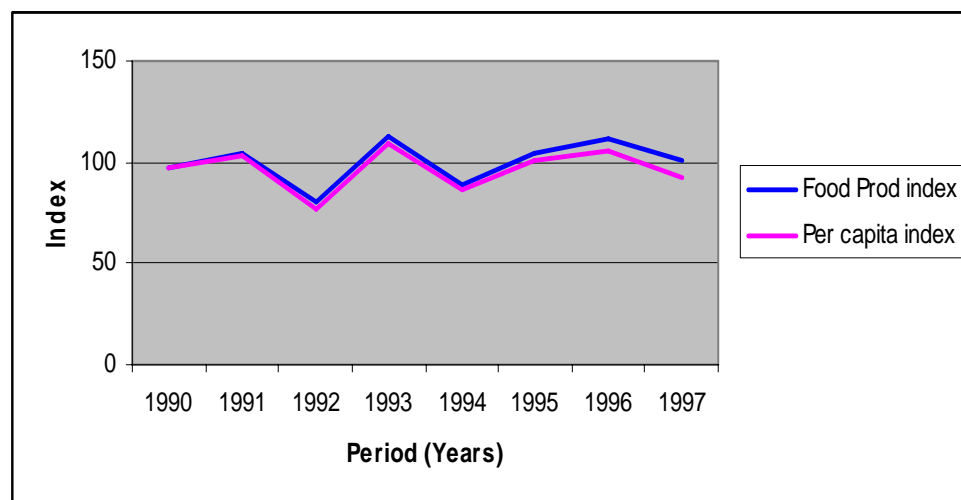
**Table 7: Key Facts about Malawi**

Population	millions	9,4	10,1	10,3
Population growth	% per year	2,5	2,1	2,1
Life expectancy at birth	Years			38,1
Fertility rate	Births per woman		6,4	6,3
Infant mortality rate	per 1000 live births			102,8
Mortality rate, under-five	per 1000 live births			193
Urban population	% of total	13,9	15	15,4
HIV prevalence	% of females aged 15-24		15,3	
Illiteracy rate, male	% of male over 15 years	27,8	26,1	25,5
Illiteracy rate, female	% of females over 15 years	57,8	54,6	53,5
Gross Domestic product	Billion US\$	2,4	1,8	1,7
GNI per capita	US\$ per capita	190	190	170
GDP growth	% over preceding year	7,3	4	1,7
Inflation	GDP deflator, annual %	58,9	42,2	24,5
Agriculture, value added	% of GDP	36,8	38	41,6
Industry, value added	% of GDP	18,2	19,2	19,1
Services, value added	% of GDP	45	42,8	39,4
Exports	% of GDP	21,3	27	26,3
Imports	% of GDP	29,9	42,4	38,2
Gross capital formation	% of GDP	11,6	14,8	13,1
Net barter terms of trade	Index; 1995 = 100	106	100	
Foreign Direct Investment	Net inflow in mn US\$	44	60	45
Present value of debt	billion US\$			1,5
Total debt service	% of export revenue	15,5	12,7	11,7
Aid per capita	US\$ per capita	52,1	44,2	43,2
Surface area	Thousand square km			118,5

Forest area	Thousand square km			26
Annual deforestation	% change			2,4
Improved water source	% of population with access			57
Urban sanitation	% of urban pop. w/ access			96
Fixed telephone lines	per 1,000 people	4,1	6,2	9
Personal computers	per 1,000 people		1	1,2
Internet users	Total number		10000	15000
Paved roads	% of total	20	18,5	
Aircraft departures	Total number	3500	4400	4800
President:	Dr. Bingu wa Mutharika (since May 2004)			
Head of Government	Dr. Bingu wa Mutharika (since May 2004)			
Last election:	May 2004			
Main exports	Tobacco, tea, sugar, cotton, coffee, peanuts, wood products			
Export trading partners (1999)	South Africa 16%, Germany 16%, US 15%, Netherlands 7%, Japan			
Main imports	Food, petro. products, semimanufactures, consumer goods, transport equip.			
Import trading partners (1999)	South Africa 43%, Zimbabwe 14%, UK 5%, Germany 5%, Zambia, Japan, US			
Lowest/highest point	Junction Shire River/boundary with Mozambique 37 m, Sapitwa 3002 m			
Seasons	Rainy season (November to May); dry season (May to November)			
Religions	Protestant 55%, Roman Catholic 20%, Muslim 20%, indigenous beliefs			
Official languages	English and Chichewa			

Source: Norad, 2002

**Figure 8: Food production and Food production per capita indexes 1990-1997 (1989-91 = 100)**



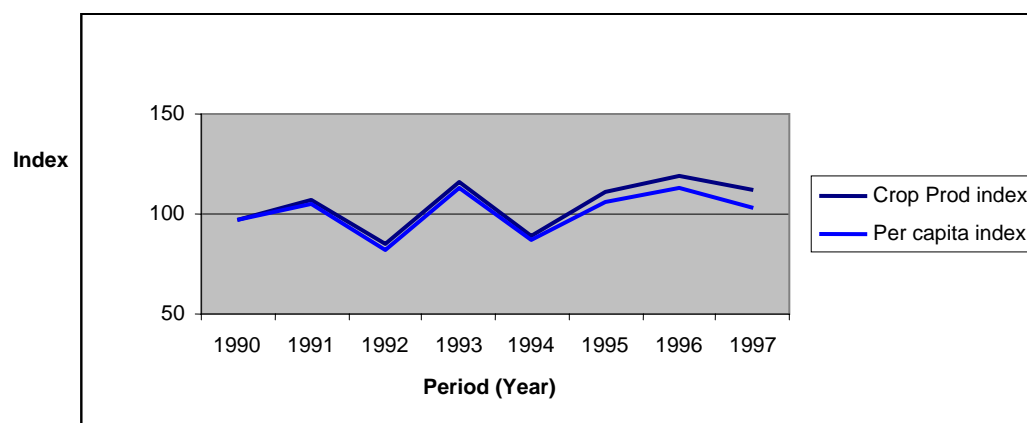
Source: FAO, 2000

**Table 8: Smallholder Crop Production from 1999 to 2005 in Metric Tones**

CROP	1999/00	2000/01	2001/02	2002/03	2003/04
Maize	2245824	2211859	1899185	1983440	1733125
Paddy Rice	92859	67084	93200	88184	49722
G/Nuts	124604	116363	155200	190112	161162
Tobacco	84555	98675	82500	94312	106186
Cotton	50589	34907	37600	40446	53581
Sorghum	41401	36799	36900	45438	40905
Millet	20224	19508	20400	24515	17349
Pulses	233811	248243	303800	323488	247242
Cassava	895420	2757186	3362400	1735065	2559319
Sweet Potatoes	1680313	1634268	2586900	1535137	1784749

Source: Government of Malawi, Economic Reports, 2004

**Figure 9: Crop and Per capita crop production indexes 1990-97 (1989-91 = 100)**



Source: FAO, 2000

## **A CHECKLIST FOR THE NATIONAL FERTILIZER STRATEGY STAKEHOLDER CONSULTATIONS FERTILIZER DEALERS**

### **(a) Availability, Affordability, Accessibility and Management**

- i. What are your current initiatives to make fertilizer available, affordable and accessible to farmers?
  - Quantity
  - Timeliness
  - Source
  - Price (Comparative advantage between countries)
  - Retail outlets
  - Spatial distribution
- ii. If your future initiatives are different from the current initiatives, what do you have in the pipeline?
- iii. What factors associated with you do you think contribute to farmers failure to access and afford fertilizer?
- iv. What factors associated with farmers do you think contribute to farmers failure to access and afford fertilizer?
- v. What do you think should be done by the government and you to increase availability, affordability and accessibility to farmers?
- vi. What do they think are the management problems of fertilizer faced by farmers?
- vii. The government is currently implementing fertilizer subsidy and input for assets programme as a short tem measure to increase availability, affordability and accessibility to farmers, what are your views?
- viii. What do you think the government and you should do in order to promote availability, affordability and accessibility to farmers in the medium to long term?

### **(b) Quality Standards/Grades/Truth-in-Labeling**

- i. Do your fertilizers comply with Malawian and international standards, grades, truth and labeling?
- ii. If yes. Which standards and grades do you follow?
- iii. If no, what makes fail to comply?
- iv. What do you think the government and you should do in order to ensure that grades and standards are followed?

### **(c) Private Sector Capacity in Fertilizer Production and Marketing**

- i. What is the current capacity of the private sector in fertilizer production and marketing in Malawi?
- ii. According to your own assessment, do you think this capacity can meet the demand in Malawi?
- iii. If not what factors impede efficient and effective production of fertilizer in Malawi?
- iv. What do you think the government and the private sector should do in order to promote fertilizer production and marketing in Malawi?

## **PARASTATALS/DONORS/GOVERTNMENT/NGOs**

### **(b) Availability, Affordability, Accessibility and Management**

- i. What factors associated with the private sector do you think contribute to farmers failure to access and afford fertilizer?

- ii. What factors associated with farmers do you think contribute to farmers failure to access and afford fertilizer?
- iii. What factors associated with government do you think contribute to farmers failure to access and afford fertilizer?
- iv. What do you think should be done by the government to increase availability, affordability and accessibility of fertilizer to farmers?
- v. What do you think should be done by the private sector to increase availability, affordability and accessibility of fertilizer to farmers?
- vi. What do they think are the management problems of fertilizer faced by farmers?
- vii. What do you think should be done to remove these fertilizer management problems?
- viii. The government is currently implementing fertilizer subsidy and input for assets programme as a short term measure to increase availability, affordability and accessibility of fertilizer to farmers, what are your views?
- ix. What do you think the government and the private sector should do in order to promote availability, affordability and accessibility of fertilizer to farmers in the medium to long term?

**(b) Quality Standards/Grades/Truth-and Labeling**

**(To be administered where applicable)**

- i. Do you think fertilizers available on the Malawian markets comply with Malawian and international standards, grades, truth and labeling?
- ii. If yes. Which standards and grades are followed?
- iii. If no, what makes the dealers fail to comply?
- iv. What do you think the government and the private sector should do in order to ensure that grades and standards are followed?

**(c) Private Sector Capacity in Fertilizer Production and Marketing**

**(To be administered where applicable)**

- i. What is the current capacity of the private sector in fertilizer production and marketing in Malawi?
- ii. According to your own assessment, do you think this capacity can meet the fertilizer demand in Malawi?
- iii. If not what factors impede efficient and effective production of fertilizer in Malawi?
- iv. What do you think the government and the private sector should do in order to promote fertilizer production and marketing in Malawi?

**BANKS**

**(a) Availability, Affordability, Accessibility and Management**

- i. How do you define your role in the current fertilizer marketing in Malawi?
- ii. Do you think you are able to deliver this role?
- iii. If not, what are the inhibiting factors?
- iv. The government is currently implementing fertilizer subsidy and input for assets programme as a short term measure to increase availability, affordability and accessibility to farmers, what are your views?
- v. What do you think the government and you should do in order to promote availability, affordability and accessibility to farmers in the medium to long term?

## LIST OF STAKEHOLDERS FOR NATIONAL FERTILIZER STRATEGY CONSULTATIONS

- 1) ADMARC Head Office-Discussions were held with Mr. J. Gausi-The Farm Inputs Manager
- 2) Central and East Railway Company-Mr Daniel Wundani- Administrative Assistant to forward a written report as per their company regulations
- 3) Chikanguya 2 Farmer Group and Ganda Farmer Group in Zomba,
- 4) Export Trading Company-Operations Manager-Was in Zambia on business Trip but Anandi Manju of Seba Foods who is his deputy could be reached on her mobile in Lilongwe.
- 5) INDE Bank discussions held with E Chinkanda-Head of Operations, Jimmy Kayuni- Head of Marketing and Business Development
- 6) Manja Womens Group and Masaika Farmers Group in Blantyre
- 7) Mbala Estate belonging to Mr Payman in Zomba
- 8) MDC-Telephones have been disconnected
- 9) Mulimba Irrigation Group, Mwaiwathu Farmers Group in Chikwawa,
- 10) Mulli Brothers, Transporters Association of Malawi-Mr Sisiri-Operations Manager]
- 11) OXFARM- booked an appointment but relevant authorities were not there when visited.
- 12) SFFRFM-Mr DK Msukwa-Company Secretary & Mr B A Chinguwo-Head of Operations- Head Office Blantyre
- 13) Transglobe Limited OperationsManager-Was out in Lilongwe during the Visiting period
- 14) DFID, British High Commission, P. O. Box 30042, Lilongwe 3, Malawi: B. Sanchez, L. Stubblefield & Char lone Kingsley
- 15) World Bank Malawi Country Office, Mulanje House, P. O. Box 30557, Capital City, Lilongwe 3, Malaw: Dr. Hardwick Tchale.
- 16) Rab Processors Ltd, Lilongwe Office, P. O. Box 5338, Limbe, Malawi: Sai Kiran
- 17) The Tobacco Association of Malawi, P. O. Box 31360, Capital City, Lilongwe 3, Malawi: FAM Thole & C. Beya
- 18) Malawi Promotion Investment Agency, Aquarius House, P. Box 302, Malawi: ACE Sukasuka
- 19) International Monetary Fund, Private Bag B354, Lilongwe 3, Malawi: Levie Jeremiah Sato & Thomas Baunsgaard
- 20) CISANET, E. Manda, Mhone & Aba Ngwira
- 21) University of Malawi, Bunda College, Department of Agricultural Economics, P. O. Box 219, Lilongwe, Malawi
- 22) Ministry of Trade and Private Sector Development, 30366, Lilongwe 3, Malawi.
- 23) AISAM, Fred Kawaliwali,
- 24) Yara Fertilizer Company Limited
- 25) National Smallholder Farmer Association of Malawi
- 26) Mzimba Estate Farmers
- 27) Mzimba Smallholder Farmer Groups