

Seeds and Subsidies: The Political Economy of Input Programmes in Malawi

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The Political Economy of Cereal Seed Systems in Africa

Preface

This *FAC Working Paper* is part of the first phase of a collaborative research project of the Science, Technology and Innovation (STI) Theme of the Future Agricultures Consortium (FAC). It was funded through a grant from the UK Department for International Development (DFID). The project explored the political economy of cereal seed systems across five distinct country contexts – Ethiopia, Kenya, Malawi, Ghana and Zimbabwe – during 2009-10. The evolution of seed research and development programmes and processes has varied greatly across these countries. In each case, a unique set of public and private actors and interests has been involved in defining priorities in seed policy and implementing projects, each seeking to influence those agendas to their advantage. Moreover, each country has a different reliance on 'modern' hybrid (or sometimes biotech) varieties and associated R&D and supply systems and an independent informal sector, involving networks of farmer experimenters and seed bulkers and suppliers, with varying degrees of capacity.

As calls for a 'Uniquely African Green Revolution' gain momentum, the focus on seeds and seed systems is rising up the agricultural policy agenda. Much of the debate stresses the technological or market dimensions, with substantial investments being made in seed improvement and the development of both public and private sector delivery systems. But there is currently much less emphasis on the wider policy dimensions – and particularly the political economy of policymaking in these diverse agricultural contexts.

Experience tells us it is these factors that often make or break even the best designed and most well intentioned intervention. And since investment in seed improvement and supply was last emphasised as a major priority in agriculture (in the 1970s and 80s), contexts have changed dramatically. The collapse of national public sector breeding systems has been dramatic, and this has only partially been compensated for by the selective entry of the private sector. Large multinational seed and agricultural supply companies are increasingly dominating the global scene, and there are many claims made about the promises of new technologies (notably transgenics) transforming the seed sector through a technological revolution. While informal breeding and seed supply systems continue to exist, and indeed have been extensively supported through NGOs and other civil society groups, they are often under pressure, as drought, corruption and conflict take their toll and economic transformation and livelihood change continues apace, or they are ignored or excluded from policy circles.

The focus on *cereal* seed systems allowed this project to concentrate on a similar set of crops across the five study countries with a key influence on food security at household and national levels. Given the political reverberations of the 'food crisis' of 2007-08, this enabled

timely analysis of the implications of the policy processes shaping the breeding, production, marketing and distribution of cereal seeds. As this *FAC Working Paper* shows, whether grown for local subsistence or traded commercially, the significance of cereal crops to national politics (and therefore arguments about food security and sovereignty), commercial interests and local livelihoods is profound.

To gain clear insights into the policy actors, networks, interests and narratives at play, this project sought to test the hypothesis that contrasting politics and different configurations of interests will affect the way cereal seed systems operate and shape how a 'New Green Revolution' will ultimately play out. As such, the five country studies analysed their respective national seed policy processes by asking:

- How do seed policies get created, and by whom?
- How do ideas about what makes a 'good seed policy' change over time?
- How are boundaries drawn around seed problems and policy 'storylines' elaborated?
- Whose voices are taken into account in the seed policy process? And whose are excluded?
- What spaces exist for new ideas, actors and networks? How can these be opened up?

The underlying implication in all these cases is that politics matter and that by engaging critically with seed policy processes, we can begin to define and then deliberate among different framings and interests to shift the focus of the debate beyond the usual technical/market fix.

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Acronyms

ADD	Agriculture Development Division
ADMARC	Agricultural Development and Marketing Corporation
ADP	Agricultural Development Programme
AGRA	Alliance for a Green Revolution in Africa
AISP	Agricultural Input Subsidy Programme
ASSMAG	Association of Smallholder Seed Multiplication Action Group
CAADP	Comprehensive African Agricultural Development Programme
CFNA	Citizen Network for Foreign Affairs
CYMMYT	International Maize and Wheat Improvement Centre
DFID	Department for International Development
DPP	Democratic Progressive Party
DWT	Direct Welfare Transfers
EPA	Extension Planning Area
EU	European Union
FAO	Food and Agriculture Organisation
FGD	Focus Group Discussion
GoM	Government of Malawi
IDS	Institute of Development Studies
JAICAF	Japan Association for International Collaboration of Africa and Forestry
KNOTS	Knowledge, Technology and Society
MCP	Malawi Congress Party
MH	Malawi Hybrid
MoAFS	Ministry of Agriculture and Food Security
MPTF	Maize Productivity Task Force
NEC	National Economic Council
NGO	Non Government Organisation
NSCM	National Seed Company of Malawi
NSNS	National Safety Net Strategy
PWP	Public Works Programme
SADC	Southern Africa Development Community
SAP	Structural Adjustment Programme
SFFRFM	Smallholder Farmer Fertiliser Revolving Fund of Malawi
SP	Starter Pack
STAM	Seed Traders Association of Malawi
TIP	Targeted Input Programme
UDF	United Democratic Front
UNESCO	United Nations Education Scientific and Cultural Organization
USAID	United States Agency for International Development

Abstract

This paper provides a critical account of the cereal seed systems in Malawi both in a historical and contemporary context with particular reference to the three input support programmes implemented since the late 1990s to date. The main argument of this paper is that the centrality of the question of food security in the country's electoral politics in a post liberalisation context has created a seed industry dominated by multinational seed companies, offering farmers a narrow range of products mainly hybrid maize, and in which alternative cereal seed systems such as millet and sorghum are at the verge of extinction. The commercial interests of the multinational seed companies are propped by donors who are obsessed with promoting a vibrant private sector input supply system as an engine of a sustainable green revolution through input support programmes. This has invariably privileged the genetic material supplied by the multinational seed companies at the expense of the national breeding programme whose main client are the local seed companies controlling only 10 percent of the seed market. The government's fixation on food security has also contributed to privileging the genetic material from multinational seed companies since they are deemed to be high yielding even though at the expense of the seed supply variety to the farmer. The interests of seed companies, donors and government have, even though for different reasons, coincided to create a seed industry that has a very narrow product portfolio, distributes benefits to a very small proportion of the population through various forms of commercial ventures and schemes of political patronage buoyed by excessive weaknesses in the regulatory framework for the seed industry. This paper therefore demonstrates that policy processes are predominantly characterised by the clash of competing and conflicting interests and viewpoints rather than impartial, disinterested or objective search for correct solutions for policy issues. However, the voices and views of the dominant coalitions almost always shape the major policy directions. The major recommendations for revitalising the seed industry include:

1. improving the efficiency and implementation of regulatory frameworks;
2. enhancing public sector breeding and dissemination of improved varieties; and
3. creating an enabling environment to stimulate local seed enterprises that can deliver products with the needs of the smallholder farmer in mind.

1. Setting the Context

This paper is inspired by the forceful comeback of agriculture onto the international development agenda after decades of crisis and neglect as a promising avenue for sustainable economic growth and poverty reduction particularly in Africa (Draper et al. 2009, Cook 2009). For more than two consecutive decades, African agriculture hit the headlines more for failures than successes, exacerbated by prolonged periods of underinvestment and poor policies for smallholder farmers who form the bulk of the farming population. In particular, structural

adjustment programmes (SAPs) were disastrous as 'they replaced one badly run model with almost nothing; [creating a situation in which] everything an African farmer needs-seeds, fertiliser, public investment in irrigation and extension services-remains beyond her grasp' (Adesina 2009: 1). In Africa, the revival of agriculture as a leading strategic sector is underpinned by political commitment at the highest political and policy levels within the framework of the Comprehensive African Agricultural Development Programme (CAADP). African governments have committed themselves to invest at least 10 percent of their national budgets into agriculture, the goal being to achieve and sustain growth at a minimum level of 6 percent which is required to achieve agricultural led socio-economic growth.

However, agricultural development is hugely dependent on smallholder farmers' access to inputs amongst which quality seed is extremely critical since 'the genetic information contained in the seed sets the ultimate limit on the levels of crop productivity' (Zerbe 2001: 657). Actually, seed is perhaps the most important determinant of crop success or failure alongside fertiliser and water. Consequently, seed systems, understood as the entire complex web of organisations, individuals and institutions associated with the development, multiplication, processing, storage, distribution and marketing of seeds, are important components of any efforts to revive agricultural production (Cromwell 1991; AGRA 2009). Seed systems can be formal or informal and a well functioning seed system is characterised as 'the one that has the appropriate combination of formal, informal, market and non-market channels to stimulate and effectively meet farmers evolving demand for quality seeds' (Howard et al. 2001: 3). Seed systems further entail legal considerations such as variety release procedures, intellectual property rights, certification programmes, seed standards, contract laws, and law enforcement.

In the Malawi context, the configuration of maize politics has created a strong actor network, including major donor aid agencies, which favours international commercial players and their genetic material in the seed sector over local producers, and local varieties. Notwithstanding the strong narrative about national food security or public good aid, the benefits are unevenly distributed, with most accruing to the elites in both national and donor led interventions. Malawi is an interesting case because of its experiences in recent years in which maize 'has become a political crop on which depends the food security of the whole country' (JAICAF 2008: 35). This simply re-echoes rather familiar sentiments that 'agricultural production is central to the political economy of southern Africa' (Zerbe 2001: 657). The apparent prominence of maize in the country's political economy is inevitable due to frequent episodes of chronic food insecurity since the turn of the 1990s. This eventually saw the country shift from being nationally self-sufficient in maize in non-drought years to being dependent on food aid and commercial imports (Devereux 2002; Chinsinga 2004). The capacity of the country to feed itself was decimated, inter alia, by regular bouts of flash floods and droughts, removal of fertiliser

and hybrid maize seed subsidies and sharp devaluation of the local currency that made farm inputs virtually unaffordable to the majority of the chronically impoverished smallholder farmers.

The precarious food security situation prompted several concerted responses from government with support from donors to deal with, and ultimately work out how to insulate the country from pervasive chronic food insecurity. Since the late 1990s, the major initiatives have included Starter Pack (SP) (1998-2000); Targeted Input Programme (TIP) (2001-2005); and Agricultural Input Subsidy Programme (AISP) (2005-todate) (Levy 2005; Chinsinga 2007; Dorward et al. 2007). The productivity impact of AISP has made Malawi the focus of international attention as a result of high profile coverage in the international press. AISP's productivity impact has been unprecedented. For four consecutive growing seasons, Malawi has consistently enjoyed substantial maize surplus over and above its annual national requirement estimated at 2.1 million metric tonnes. In the 2006/7 growing season, for instance, Malawi achieved a 53 percent surplus from a 43 percent national food deficit in 2005, some of which was exported to neighbouring countries. The New York Times applauded Malawi for 'ending famine [by] simply ignoring experts' (Dugger 2007); the UK Guardian carried a piece on Malawi's green revolution arguing 'Africa's green revolution may be several steps nearer after a pioneering experiment in seed and fertiliser subsidies to smallholders in Malawi' (Perkins 2009); and AGRA (2009: 2) touted Malawi as 'a model of success showing the rest of the African governments the way towards a sustainable version of the African Green Revolution'.

This paper therefore provides a critical account of how the cereal seed system has evolved as an integral part of Malawi's twenty-first century "maize miracle" using a political economy conceptual framework. The framework emphasises the importance of understanding the political, economic and social processes that promote or block pro-poor change, and to understand the role of institutions, power and the underlying context for policy processes (Synder 2005; DFID 2009). The approach used here highlights the dynamic interaction between narratives, actor/networks and politics/interests, positing that the way in which policies are talked about and the associated values, power relations and politics frame policies in a particular way (IDS 2006; Keeley and Scoones 2003). Key political economy questions about seeds and subsidies include:

- How do policies about seeds and subsidies get created, by whom and in what ways?
- How do ideas about what make 'good' policies about seeds and subsidies evolve and change?
- How are boundaries drawn around problems and policy storylines elaborated about seeds and subsidies?
- Whose voices and views are taken into account in the policy process about seeds and subsidies? And what/who is excluded?

- What spaces exist for new ideas, actors, networks in the seeds and subsidies? How can these be opened up?

Actors thus coalesce around different policy narratives, forming networks across organizations and between groups of people-academics, think tanks, donors, government agencies and others. This means that policy engagement is not only about gathering new evidence but about creating new alliances, networks and political configurations (Scoones 2005; Cabral and Scoones 2006). Strategic engagement with seemingly dominant narratives may therefore open up new opportunities for alternative perspectives on defining problems on the policy agenda and how they can be dealt with. Thus contrary to the highly stylised traditional perspective, policy process is less of a linear sequence but more of a political process underpinned by a complex mesh of interactions and ramifications between a wide range of stakeholders who are driven and constrained by competing interests and the contexts in which they operate.

Policy processes can thus be adversarial, characterised by the clash of competing interests and viewpoints rather than impartial, disinterested, or objective search for correct solutions for policy issues. This means that the making and shaping of policy is less a set of organised, predictable and rational choices than a complex, often unpredictable and above all, political process. In agricultural research, this implies that focus on people, ideas, institutions, processes and politics must take precedence over the rush in selecting technologies and investment projects (de Janvry and Sadoulet 2008).

To critically interrogate the political economy of seeds and subsidies in Malawi, the paper uses three input programmes that have been implemented since the late 1990s. These include the SP, TIP and AISP. These input programmes are ideal for this purpose because they do not only demonstrate how different narratives, actors and interests have coalesced but also a change in response to the realignment and reconfiguration of the dynamics in the wider political economy. The details of these input support programmes are provided in Box 1.

This study adopted a historical approach to trace changes in the way narratives, networks and politics about the seeds and subsidies have been framed, examining the shifts, contestations and contradictions in the narratives about what the problem is and what should be done about it over time through lens of the input support programmes as described above. It was carried out with the help of two research assistants who hold MA and BA degrees in Political Science respectively¹. These RAs have vast experience in carrying qualitative research using a wide range of methodologies. Nonetheless, prior to the fieldwork, the research assistants were trained on the political economy approach to understanding policy processes with particular emphasis on the framework that was used for this study.

The field work was divided into three main phases spanning between October and December 2009. The first phase, carried out in October 2009, focused on interviews with donor agencies, seed companies and government officials at headquarters' level. The second phase

Box 1. Input Support Programmes in Malawi

Starter Pack (1998-00)

The Starter Pack (SP) programme provided inputs to smallholder farmers adequate for 0.1 ha. These inputs were extended to all farming families estimated at 2.86 million. The input pack included 2kg of hybrid maize, 2kg of nitrogen legume, 10kg of basal fertiliser and 5kg of top dressing and illustrated instructions (Blackie and Mann 2005).

Targeted Input Programme (TIP) (2001-4)

The Targeted Input Programme (TIP) was a scaled down version of SP as an integral part of an exit strategy. It initially targeted about 1.5 million farming families which would over time be progressively scaled down to 350,000 households. The input pack included 2kg of OPV maize seed, 1kg of legume seed, 5kg of basal fertiliser and 5kg of top dressing fertiliser and illustrated instructions (Chinsinga et al. 2002).

The TIP was to a very great extent shaped by incidents of hunger crises and electoral politics. Following the 2001/2 hunger crisis, the number of TIP beneficiaries was revised upward to 2.8 million as a means of facilitating recovery from a chronic hunger situation. In the 2004/5 growing season, the expectation was that the government would implement a universal fertiliser subsidy programme as implied during the electoral campaign but was hesitant to proceed due to apparent donor resistance (Chinsinga 2007). Instead, and rather belatedly, the government implemented what was described as 'Extended Targeted Input Programme' (ETIP). ETIP provided about 2 million households with 5kg of OPV maize seed, 12.5kg of both basal and top-dressing fertiliser and 1kg of legume seed.

Agricultural Input Subsidy Programme (AISP) (2005-to date)

AISP was introduced during the 2005/6 growing season following a devastating hunger crisis during the 2004/5 season. Using a voucher system, 1.5 million maize and 200,000 tobacco farmers were targeted. Maize farmers were entitled to one 50kg bag of basal and top dressing fertilisers. Both fertilisers were sold at MK950. Tobacco farmers were entitled to one 50kg bag of CAN and D compound each at MK1,450 per bag. Maize farmers had access to 3kg OPV maize at MK150/3kg compared to the market price of MK500/3kg. AISP has evolved since its introduction during the 2005/06 growing season. The AISP has been subjected to modifications on a yearly basis building cumulatively on lessons learnt (see Table 2). In the maiden implementation of the AISP, the government received no support from its development partners because they felt the programme would jeopardise prospects for macroeconomic recovery and 'all distribution of subsidised inputs was done by [two] parastatal bodies, Agricultural Development and Marketing Corporation (ADMARC) and Smallholder Farmer Fertilizer Revolving Fund of Malawi (SFFRRM)' (Dorward and Chirwa 2009: 3).

was carried out in November 2009 and entailed interviews with both local and international NGOs based in Lilongwe that are in one way or another involved with seed sector while the third and final phase of fieldwork was carried out in December 2009. This involved key informant interviews with government, NGO and private sector officials at district level and focus group discussions (FGDs) at the local level.

The study involved some 45 interviews with key stakeholders from government policy makers to public/private, national and international researchers to donors, commercial seed suppliers and traders to farmers at national, district and local levels. At the latter levels, the fieldwork was done in Dedza district in central Malawi, widely considered as one of the key agricultural districts across the country. Key informant interviews were carried out with Ministry of Agriculture and Food Security (MoAFS) officials at district and local levels, private sector actors especially agro-dealers and officials from several non-governmental organisations (NGOs) active in the agricultural sector.

Eight focus group discussions were carried out with farmers in the villages of Kadam'manja and Mkumgumbe, four in each village respectively in Bembeke Extension Planning Area (EPA). The FGDs, consisting of between 8-12 people, were conducted in separate groups of men, women, youth (girls and boys mixed) and men and women (mixed). The rationale was to capture views about the dynamics of the cereal seed systems from various segments of local communities but perhaps more critically to triangulate local perceptions with the wider debate (s) at district and national levels. While it is

acknowledged that insights from two villages in Bembeke EPA can hardly be representative of the national picture, these seemingly localised experiences could potentially be indicative of much more general sets of deficiencies, challenges, constraints and even opportunities at a much broader scale.

Following this introduction, the next section examines the historical and contemporary context of cereal seed systems in Malawi. The main focus is on the institutional developments that have taken place since the advent of independence especially in terms of how these developments have affected the progressive development of the cereal seed systems. The status of the national breeding programme is examined with particular reference to the changing operative institutional context instigated by the liberalisation of the seed industry that has led to the increase of actors in the seed industry both local and international. Consequently, the contemporary configuration of the seed industry is examined through the political economy lenses paying particular attention to who are the key actors, their narratives, interests and patterns of engagement as well as the key policy issues and debates that have significant bearing on seeds and subsidies in Malawi. The third section delineates the political economy dynamics of the seeds and subsidies through the three input support programmes focusing on how different narratives, actors and interests have coalesced but also changed as these input programmes have evolved over time. The fourth and final section offers some concluding reflections with particular focus on lessons learnt about seeds and subsidies in Malawi.

2. Historical and Contemporary Context of Cereal Seed Systems

2.1. Maize Dominance

In southern Africa, cereals are quite dominant in the crop portfolio. It is estimated that maize, millet and sorghum represent up to 77 percent of the total cereals and serve as staple food for the majority of the people in the region (Zerbe 2001). According to Williamson (1956), millet and sorghum were the main staples in Malawi until the turn of the twentieth century. These cereals were dramatically replaced by maize to the extent that by the close of the twentieth century Malawi's per capita consumption of maize was, and is, the highest in the world (CIMMYT 1990; Hassan et al. 1996). This is further underscored by Denning et al. (2009) who observe that maize is grown by 97 percent of farming households and accounts for 60 percent of the total calorie consumption. Recent data from MoAFS is quite illustrative of the dominance of maize in the crop portfolio of smallholder farmers in Malawi. As shown in Table 1, the growing area of rice, sorghum, millet, cassava, sweet potatoes and Irish potatoes combined does not even reach one third of that of maize. It is, in fact, estimated that at least 80 percent of the nation's cultivable land is planted to maize each cropping season (Smale and Jayne 2003).

The apparent increase in the hectares devoted to maize since 2005 is attributed mainly to the introduction of the AISP fertiliser subsidy programme through which farmers access a maximum of two 50kg bags of fertiliser at less than a quarter of the market price (see Box 1). The introduction of the fertiliser subsidy programme has not only led to the expansion of the hectares devoted to maize but also to a significant increase in the maize yields at both household and national levels. As already observed above, Malawi has been able to satisfy its national food requirements estimated 2.1 million metric tonnes. In 2005/6, total maize production stood at 2,611,486, half a million metric tonnes over the annual national food requirement. The production shot to a record 3,444,655 metric tonnes in the 2006/7 growing season and slumped to about 2,948,509 metric tonne during the 2007/8 growing season but well above the national annual food requirements (MVP 2008; UNESCO 2009).

Prior to the introduction of the fertiliser subsidy programme, it is estimated farmers managed only 0.5

metric tonnes per hectare but this jumped to 1.6 metric tonnes per hectare. According to Chirwa and Dorward (2010), the fertiliser subsidy programme is associated with an estimated yield response of 15.5kg grain per kg N for maize, 18.6 and 14.2 for hybrid and local maize varieties respectively. There is an additional per hectare increase in yield of 300 kg/hectare for hybrid compared with local maize varieties. The productivity increase of maize is therefore not only a result of incremental production triggered by fertiliser use but also the expansion in hectares devoted to maize production.

2.2. Breeding Programmes and the Seed Industry

The key question is how has the dominance of maize in the cereal seed system and diet of the majority of Malawians shaped, influenced and had an impact on the breeding programmes in particular and the seed industry in general? The dominance of maize as a staple food potentially favoured technological breakthroughs in the maize seed industry since innovations tend to occur when either the producers of a commodity are few, homogeneous and economically powerful or when a commodity is of national significance as a wage good or source of foreign exchange (Pineiro and Trigo 1983).

The paradox, however, is that nationally led advances in maize seed technology and other cereals have not been satisfactory, inter alia, underlined by relatively low rates of adoption of improved varieties by smallholder farmers within the southern African region. It is, for instance, estimated that smallholder farmer hybrid adoption is at 43 percent compared to 65-100 percent in Zambia, Zimbabwe and South Africa (Smale and Jayne 2003). Hybrid adoption rates were as low as 7 percent for most part of the 1980s before rising to 24 percent triggered by what Smale (1995) characterised as 'Malawi's delayed green revolution' during the 1988-92 period.

A national breeding programme exists covering a wide range of crops such as maize, groundnuts, millet, cassava, sorghum, beans, peas, sugarcane etc. However, the breeding programme has been greatly influenced by institutional developments just before independence in July 1964, the liberalisation of the seed industry beginning towards the end of the 1980s and the proliferation of input support programmes since the turn of the 1990s. The national breeding programme enjoyed a remarkable but very brief period of success in the 1980s and early

Table 1. Planting Area of Staple Crops (2000 - 2007) (ha)

	2000	2001	2002	2003	2004	2005	2006	2007
Maize	1,507,008	1,506,528	1,488,449	1,568,975	1,537,651	1,513,929	1,600,506	1,686,442
Rice	43,542	50,146	56,029	54,407	42,568	49,154	53,631	57,371
Sorghum	55,030	54,098	54,098	59,627	59,627	68,931	68,931	74,131
Millet	34,257	34,169	34,169	38,758	38,758	41,192	40,081	44,878
Cassava	183,486	202,338	112,071	156,645	156,645	153,687	151,623	174,932
Sweet Potato	147,118	192,457	115,679	169,478	149,478	128,982	118,577	150,592
Irish Potato	14,312	22,794	30,398	33,058	33,058	35,439	39,109	40,202

Source: JAICAF (2008: 41)

1990s following a prolonged period of uncertainty in the post independence era which was curtailed by concerted donor drive toward liberalisation of the seed industry under the auspices of SAPs².

2.2.1. Colonial and Postcolonial Influences on the National Breeding Programme

The rather low uptake of hybrid maize among smallholders in Malawi is a direct consequence of the enduring historical institutional constraints in the seed industry. Unlike Zimbabwe and Kenya, Malawi did not 'develop a community of settler farmers who demanded high yielding maize varieties and had political clout to ensure that a public research system was established to develop them' (Smale 1995: 819). In the post independence era, this was further constrained by the continuity of the dual agricultural development strategy that distinguished between estate and smallholder agriculture 'with the latter officially considered as an engine of economic growth and widely seen as a training ground for future commercial farmers and a source of political patronage'³. The government developed a two pronged strategy of importing SR 52 seed from Zimbabwe for estates and breeding flinty composites for smallholders.

This strategy was informed by field trials carried out by a British Breeder who concluded in 1971 that hybrid SR 52 and flint composite UCA were the most appropriate for Malawi's agronomic conditions. The national breeding programme would therefore concentrate on development and adaptation of semi-flint composites for consumption or sale by smallholders while SR 52 could be directly imported by estates from Zimbabwe (Smale and Jayne 2003). This eventually culminated in the discontinuance of the national hybrid maize breeding programme between 1967 and 1977. The recommendation for composites for smallholder farmers was based on the following: 1) that all hybrids have poor storage and hand-pounding characteristics; 2) all hybrids require high input levels; 3) smallholders will never use hybrids without seasonal credit; and 4) hybrid seed systems are necessarily more difficult to maintain than systems for delivering composites (Smale 1995).

Estates were not major producers of maize, however, they contributed between 8-10 percent of the total maize production while the rest was produced by almost over one million smallholder farmers. But as a major beneficiary of the maize seed industry, their main preference - 'grain texture' - was never the focus of the maize national breeding programme until the turn of the 1980s. Smallholder farmers have traditionally expressed preference for flint maize varieties because they have a better proportion of hard starch to granules, a higher proportion of flour to grain extraction rate and their harder grains protect them from weevils (Smale and Jayne 2003). The smallholder farmers were, however, not able to exert influence on the national maize breeding programme because they lacked 'the formal organisation and supporting political institutions to enable them articulate their research needs' (Smale 1995: 828). On the contrary estate owners had the political clout to push for technical advances in maize breeding but they were cultivating

maize merely as a secondary crop (Zerbe 2001). They were primarily interested in technological breakthroughs in the tobacco breeding programme as their key crop. The national maize breeding programme's primary focus on dents was not a cause of concern to estate owners because they were not interested in grain texture but rather in the maize yield criterion. This was rooted in the belief that dents have higher yield potential than flints, which was of particular interest to estate owners since 'they were using the maize to simply feed tenants on their farms'⁴.

When the hybrid maize breeding programme was resurrected in 1977, donors notably the United States Agency for International Development (USAID), pushed for the consideration of 'grain texture' as one of the areas of focus in the breeding efforts. This was prompted by recurrent and worsening episodes of food insecurity, making it urgent to generate high yielding maize of suitable grain texture for smallholders. Working closely with researchers from CIMMYT, the national breeding programme succeeded to produce two semi-flint hybrids, namely: MH 17 and MH 18 in the late 1980s. These hybrids were appropriate for production by smallholder farmers who consume their own maize triggering 'Malawi's delayed green revolution'. The production of the semi-flint hybrids held much promise because they appeared to be well adapted to both agro-climatic and smallholder objectives. Smale and Jayne (2003) summed up the promise of MH 17 and MH 18, characterised as 'seeds of hope,' as follows:

- Farmer evaluations and experimental results demonstrated that semi-flint maize hybrids could be processed on the farm as well as flint varieties.
- Trial and demonstration results showed that there were only minor differences in yield among the various Malawi maize hybrids so that yield was not sacrificed for grain texture.
- Analysis of trial results and extensive demonstration data for three of the major maize producing zones showed that unfertilised hybrid maize yields were higher than those of unfertilised local maize, even during the worst drought year in decades.

2.2.2. The Privatisation Drive of the Seed Industry

The hybrid maize revolution was short-lived, however. It was somewhat derailed by the onslaught of the liberalisation drive at the beginning of the 1990s. The hybrid maize revolution was made possible by complementary investments in agronomic research, seed distribution systems and rural infrastructure particularly the Agricultural Development and Marketing Corporation (ADMARC) network. In 1978, a National Seed Company of Malawi (NSCM) was established with support from World Bank and Food and Agriculture Organization (FAO) to facilitate access to improved seed that could possibly trigger a green revolution (Cromwell 1991; Zerbe 2001). With support of donors throughout the 1980s 'the high levels of coordination between the NSCM, ADMARC and MoA created an institutional framework that unleashed the hybrid maize revolution of the 1980s and 1990s'⁵; 'NSCM's linkage with other relevant institutions in the

agricultural sector fanned the zeal of breeders to produce new materials⁶; and 'more importantly local scientists had an immediate outlet for their research products'⁷. The NSCM played a major role in establishing the basis for foundation seed production and maintenance, organizing and training seed growers, and inspecting seed together with government seed officers.

The NSCM was owned by Cargill, the United Kingdom Commonwealth Development Corporation and ADMARC. It was the monopoly producer of most seeds particularly hybrids (Cromwell 1991). In the wake of the Structural Adjustment Programmes (SAPs) of 1980s, seed companies were targeted for privatisation, the argument being that they had failed to widen farmers' access to improved seed largely because state run companies are inherently inefficient, mismanaged and unprofitable (Zerbe 2001; Howard et al. 2001). It was, for instance, estimated that less than one third of developing country farmers had never used seed provided by national seed companies despite efforts to replace the informal sector with a public sector dominated system (Howard et al. 2001: 10). In southern Africa, it is estimated that small-scale farmers rely heavily on informal seed networks saving 60-70 percent of seed used on-farm, and acquiring 30-40 percent from relatives, neighbours and other community sources. It was thus strongly felt that the exclusion of market forces and reliance on bureaucracies was not an efficient way to harmonize supply and demand of the seed systems (Nambiro et al. 2001). Consequently SAPs demanded complete liberalisation of seed multiplication and distribution, restriction of public agricultural research, and seed line development, and the limitations to the state's regulatory capacity.

The privatisation of NSCM started with Cargill acquiring a controlling stake at 55 percent in 1990. Cargill sold some of its shares to Monsanto in 1998, but Monsanto's target was to own 100 percent of the shares which it managed to do in 2003. According to Smale (1995), when Cargill bought a controlling stake, it started rationalizing the operations of NSCM and embarked on a more aggressive marketing strategy for Malawi maize hybrids which partly contributed to the 'Malawi's hybrid revolution' in the late 1980s and early 1990s. Monsanto further streamlined the product lines 'focusing almost entirely on maize, and hybrid maize for that matter'⁸. Thus unlike the NSCM that had various lines of seed production, Monsanto concentrates almost exclusively on hybrid maize and to a lesser extent vegetable seeds.

2.3. Privatisation and the Seed Industry

2.3.1. The Contemporary Landscape of the Seed Industry

The seed industry in Malawi is now fully liberalised. There are both international and local players in the seed industry. However, the seed industry is dominated by the multinational seed companies which control about 90 percent of the market (GRAIN 2010). The multinational seed companies included Monsanto, Seed Co., Pannar Seed and Pioneer. Some of the local seed companies include Agritec, Demeta, Funuwe Farms and the Association of Smallholder Seed Multiplication Group

(ASSMAG). Monsanto is the most dominant multinational seed company controlling more than 50 percent of the market share of improved maize varieties. However, the business portfolios of the seed companies are less diversified. Almost all of them focus almost exclusively on the production of hybrid maize seeds. Some companies, notably Pannar, also deal in Open Pollinated Varieties (OPVs). Almost all the companies are also engaged in the production of vegetable seeds principally for winter cultivation.

The total seed market is estimated at about 30,000 metric tonnes annually of which improved seed is 32 percent or 9000 metric tonnes for which effective demand is estimated at 4,500 metric tonnes. Smallholder farmers' adoption of improved maize has been rather sluggish. According to the 2009/10 estimates, around 30% of the farmers are still cultivating local maize seed varieties (GRAIN 2010). As a result, the sale of improved seed is greatly influenced by government policies at any particular point in time. Pure market purchases of improved have essentially remained stagnant but sales peak up when government implements some form of input support programmes. For instance, sales of improved seed are at their peak following government's implementation of the fertiliser subsidy programme. Similar trends were observed when the government implemented the SP and TIP in the late 1990s and early 2000s respectively.

The major local player in the seed industry is ASSMAG. It started off as a MoA initiative in 1995 whose goal was 'to ensure the availability of adaptable, affordable, improved seed for the smallholder farmers who could not afford hybrid seeds'⁹. It was transformed into an association in 1999 with funding from the European Union (EU). It deals with various crops such as open pollinated varieties (OPV) maize, groundnuts, beans, cassava, sweet potatoes, sorghum, soya beans, rice, millet etc. The main seed product for ASSMAG is OPV maize since 'funding for the multiplication of other crops is often not readily available'¹⁰. ASSMAG works closely with the national breeding programme which is the sole source of the foundation seeds used in its multiplication programmes.

The players in the seed industry have constituted themselves into the Seed Traders Association of Malawi (STAM) which is 'essentially a self regulatory body for the seed industry to ensure that farmers are served with quality seed throughout the country'¹¹. The formation of STAM followed 'excessive decline in seed quality and standards due to unscrupulous traders who were simply offering 'decorated grain' on the market as seed'¹². The seed industry interacts with government on matters of seed in relation to the input support programmes through STAM. It is only STAM accredited seed suppliers that are involved in the input support programmes in order to ensure that farmers are supplied with certified and quality seed.

As part of the liberalisation framework, seed companies distribute their products through the agro-dealer network. The development of the agro-dealer network is to a large extent being facilitated by a USAID sponsored

Citizen Network for Foreign Affairs (CNFA) NGO as an integral part of the efforts to kick-start a robust retail network for agricultural inputs throughout the country to fill the vacuum created by closure of some ADMARC markets (Adesina 2009). The main objective of CNFA is to increase rural incomes by assisting farmers and rural entrepreneurs by: 1) strengthening market linkages; 2) building input supply networks; 3) promoting enterprise growth and development; 4) enabling agribusiness financing; and 5) improving processing and marketing. CNFA's vision is that these activities would transform the fragmented input distribution system into an efficient, commercially viable input supply infrastructure which would in turn afford smallholder farmers greater access to productivity enhancing inputs and technologies (Odame 2010). CNFA promotes a market oriented system of input supply to farmers. It thus advocates for the replacement of state run structures' direct role in inputs purchase and distribution by fostering the growth of a commercially based rural distribution network of private agro-dealers, facilitate agro-dealers' access to commercial credit, and stimulate smallholders' demand for improved agricultural inputs.

The promotion of the private sector is seen as a viable alternative to the progressive development of a robust agricultural sector. The state run input supply system is condemned as inefficient and highly susceptible to massive rent seeking pursuits which is not in the interest of the smallholder farmers. Through the use of vouchers, a viable agro-dealer network, is described as 'a way of improving agricultural input and output markets while providing support to resource poor farmers' (Mangisoni 2007: 1). CNFA performs a brokerage role between agro-dealers and seed companies even though individual agro-dealers can interact with seed companies on their own. In order to qualify as an agro-dealer, 'one must not only have a financial muscle but must also be well enlightened'¹³. CNFA advertises for applications from suitable individuals or companies, indicating that potential applicants must own a building, have access to potable water, functioning toilet, protective clothing, and the premises must be far away from fast food outlets or paraffin selling points.

While seed companies have the liberty to breed their products elsewhere, the multiplication of the seed for sale must be done in the country. Seed companies contract out the seed multiplication exercise to eligible farmers across the country. Interested farmers apply to seed companies for seed multiplication contracts but 'the isolation requirement rules out small farmers'¹⁴. The isolation requirement for a field designated for seed multiplication is 400m and 200m radius for hybrids and OPVs respectively. It was, in fact, argued that 'seed multiplication is not a business for poor people; it is for elites since it requires the farmer to have adequate money which, realistically speaking, can only be managed by farmers with land in excess of 10 hectares'¹⁵.

Seed companies register their farmers with MoAFS's Seed Services Unit which inspects the maize fields during the growing season to ensure that standards for certification are met. The companies provide seed to the farmers

and bear the costs of inspection as well. In addition to land, the farmer meets the costs of labour and fertiliser. The seed is sent to the companies' laboratories immediately after harvesting for authentication and checking of moisture content. Seed companies pay seed farmers in dollars on the basis of moisture content, the recommended moisture content being 12 percent. Any excess moisture content beyond 12 percent attracts deduction from the farmers' payment.

The seed industry in Malawi is clearly dominated by the multinational companies with the locally based companies playing a very minor role. The multinational companies have inserted themselves as a dominant actor in the seed industry following the liberalisation of the industry at the insistence of donors. Some of the liberalisation policies include the Competition and Fair Trading Act of 1998, Biosafety Act of 2002, Biosafety Regulations and Biosafety Policy of 2007. Major donor agencies such as USAID are enthusiastic about promoting the development of the private sector through such outfits as CNFA. The agro-dealer network is strategically linked to the multinational seed companies as major outlets of seed supply to the farmers across the country. Both government and donors turn to the multinational seed companies whenever they run programmes meant to assist impoverished farmers with seeds. These developments have invariably led to the seed industry being captured by a narrow group of the private sector players propped up by both government and donors. These private sector actors are offering a narrow range of technologies to farmers since the liberalisation of the seed industry has resulted in more or less total neglect of the public sector breeding efforts. A tight network between donors, government and seed companies has developed privileging multinational seed companies in the process. This is essentially a culmination of the interaction between the environment created by the neoliberal policies implemented in Malawi and the nature of seed companies that have been established under those conditions.

2.3.2. Privatisation and the National Breeding Programme

The privatisation of the seed industry has substantially marginalized the national breeding programme. It was, for instance, observed that 'the national breeding programme exists but it is not as robust as it was during the late 1980s and early 1990s'¹⁶. The disappearance of the NSCM has 'turned Malawi into a sales point for seed materials bred outside the country'¹⁷; 'there is little, if not lack of uptake of materials from the national breeding programme since the national breeding programme is under-funded to produce materials that can compete with those from multinationals'¹⁸. The major argument by seed companies is that they 'are interested in quality as an integral part of their competition strategy which forces them to look beyond the borders'¹⁹. In order to therefore retain a competitive edge, seed companies 'promote their own materials because the quality from the national breeding programme would be essentially the same'²⁰; and 'are further let down by the absence of

the breeders' rights legislative framework in Malawi²¹. In short, the disappearance of the NSCM implies that the national breeding programme does not have a reliable conduit for its materials since 'at the peak of the NSCM all varieties bred by the national breeding programme were bought, multiplied and sold to ADMARC for distribution to farmers'²².

While the multinational companies are not obligated to utilise materials from the national breeding programme, the stature of the programme has been further undermined by gross under-funding. It was consistently observed that 'breeders are funded on salary and not operational costs'²³ resulting in frustration 'that has seen a critical cadre of breeders that was assembled during the hybrid maize revolution leaving for greener pastures'²⁴. This critical mass of breeders has never been fully replaced. It was, for instance, observed that the breeding section in MoAFS is facing serious staff constraints as 'about 12 positions of senior scientists have not been filled in the last four years'²⁵. Moreover, most junior scientists are using MoAFS as a stepping stone for rewarding careers elsewhere such that 'the remaining senior scientists do not have understudies so as to ensure institutional continuity'²⁶. Strikingly 'there is no sense of urgency to address the serious human resource constraints in the breeding section of the MoAFS'²⁷.

Most of the existing breeding programmes are thus running on project funds and not on government's development budget²⁸. The funding constraints have therefore effectively undermined the continuity of the successful research on hybrids that spurred the green revolution of the 1980s and 1990s. The funding is so low to the extent that 'it is often difficult to constantly inject foundation seed for multiplication to meet the demand of farmers'²⁹. These hybrids created a revolution 'because they satisfied the local agronomic conditions, processing methods and storability'³⁰. Some companies like Pannar interact with the national breeding programme but most of its clients are local seed companies. The local seed companies are mainly interested in OPVs 'because they know they cannot effectively compete with the multinationals on hybrids'³¹. The multinational and local seed companies have different interests, inter alia, reflected in their pattern of interaction with the national breeding programme. The major competition strategy for local seed companies is offering farmers products that appeal to their preferences such as taste, storability and poundability. The national breeding programme has at least capacity to produce OPV maize varieties. Multinational seed companies are interested in offering high yielding hybrid maize varieties that the national breeding programme cannot provide. They are interested in hybrids because they cannot be recycled as a strategy for guaranteeing the profitability of their business. The capacity of the national breeding programme to achieve this feat is almost non-existent hence limited interaction between the multinational seed companies and the national breeding programme.

Some breeders are nonetheless optimistic about the national breeding programme the challenges created by liberalisation notwithstanding. They argue that 'the opening up of the seed industry has raised the breeding

bar because for the materials of local breeders to be embraced by multinational companies, they must be really good'³². Nevertheless, they acknowledge that the dominance of multinationals in the seed industry is denying farmers the opportunity to use seeds that are well adapted to the local agronomic conditions since 'materials bred elsewhere can only be second best'³³. Moreover, the technological breakthroughs in breeding in temperate areas are not easily transferred to many of the smallholder farmers who produce in wide range of micro-climates found in the developing world (Morris 2001).

SAPs might have had significant impact on the national breeding programme but 'government's priorities in the agricultural sector too are to blame'³⁴. This was particularly emphasized with regard to the budgetary dominance of input support programmes in MoAFS's activity portfolio, 'falling short of renaming MoAFS as Ministry of Input Support Programmes'³⁵. The argument is that MoAFS is spending almost all its time on AISP at the expense of the normal agricultural development programmes particularly research and extension. There is also very limited interaction between the multinational companies on one hand and the national breeding programmes and universities on the other, except through seed testing. The requirement is that new varieties have to be tested for their suitability to local agronomic conditions at least two years before their formal release onto the market.

The seed products of multinational companies are readily embraced even though they may not necessarily be ideal for the local agronomic conditions mainly because of the crumbling of the national breeding programme. The viability of the programme was hugely dependent on donor funding. The multinational seed companies have fully taken advantage of the liberalisation drive to assert themselves as a dominant supplier of seeds in the country controlling about 90 percent of the market share (GRAIN 2010). The policy framework does not oblige them to breed seeds in the country except for purposes of testing prior to the release of new varieties. Consequently, there is very little that can be done even if the varieties are not quite suitable to the local agronomic conditions because the country is almost entirely dependent on the multinational companies for improved seed supply. Moreover, the multinational companies' seed products are in tune with the interests of both donors and government officials. They are both interested in high yielding maize varieties as a quick fix to the enduring problem of hunger in Malawi. It therefore does not really matter as long as the seed products are proven to be high yielding although they may not necessarily be fully amenable to the local agronomic conditions.

In addition, the multinational companies do not make much effort to bring onto the local market the best products because of the apparent limited market as observed above. As a result, seed companies neither develop seeds locally nor import their best materials. This leaves farmers with seeds that do not contain the latest improvements to deal with drought, pests or nutritional quality of the

grain. The crumbling of the public sector breeding programmes has meant that the country has almost entirely dependent on the multinational seed companies for the bulk of improved seed supply although not necessarily of the ideal quality for the local agronomic conditions. This has been reinforced by the shrewd business strategies of multinational companies that have, inter alia, succeeded to marginalise the national breeding programme further buffeted by the coincidence of interests of donors and government in finding quick fixes to the enduring problem of food insecurity even though for different reasons.

2.3.3. Privatisation and the Fate of Alternative Cereal Seed Systems

The privatisation of the seed industry has further marginalised the other cereal seed systems particularly sorghum and millet. While the national breeding programme had active breeding lines for sorghum and millet, whose outputs were readily taken up by the NSCM, the multinational companies do not consider these as priorities. They argue that 'there is no effective demand for sorghum and millet to warrant investment since we are interested in crops that will bring us profits on a sustainable basis'³⁶. Seed companies are thus interested in those seeds for which there is effective demand, a predictable market in terms of volume and frequency, and which are profitable requiring regular purchase of seed (Tripp 2001; Howard et al. 2001; Zerbe 2001). For this reason, it is only new varieties of maize that enter farming systems with regularity except when there are special development programmes for what are variously described as 'orphan crops', 'forgotten crops', 'non-commercial crops' or 'women's crops' (CIAT et al. 2009). Almost 90 percent of the seed for sorghum and millet are sourced informally through well established farmer diffusion systems.

Sorghum and millet were constantly described as 'almost obsolete crops since everyone is growing maize'³⁷; and 'about to disappear just like pure local maize varieties'³⁸. It is difficult to find pure local maize varieties 'because they have been adulterated through cross pollination even though farmers still describe these varieties as local'³⁹. According to both communities and officials, sorghum and millet are being displaced by maize for three main reasons: 1) they require more land than maize making them less attractive especially in the wake of increasing land shortages; 2) they are less yielding than maize; and 3) returns to labour are higher to maize than sorghum and millet since they require labour time for scaring birds (cf. Smale and Jayne 2003). The main challenge for these seeds is that 'there is lack of adequate breeders' seed since most breeding initiatives are project based; there is thus lack of relevant breeding programmes with adequate long-term support'⁴⁰.

There has never been a national breeding programme focusing on local maize varieties, even in the development hybrid maize varieties. This is to say that indigenous maize varieties are not used as mother plants even though they are known to have strong resistance to diseases and pests (JAICAF 2008). This is, of course, justified on a scientific basis. According to Smale (1995),

inbred lines developed from local flint materials are too tall and their growing season too long. Overall, however, the fate of sorghum and millet seed systems reflects 'failure to set adequate research priorities, and to work with research partners particularly universities to set research priorities to ensure sustainable seed systems at the national level'⁴¹. This was emphasized by donors who argued that it is difficult to appreciate the fate of sorghum and millet seed systems; they should have been priorities for the government since the maize seed industry is well served by both local and multinational companies. The millet and sorghum seed systems are reportedly thriving in some areas, mostly in Ngoni dominated areas, because of robust cultural systems. Ngoni's place 'cultural premium on three things: meat, women and beer but not just any other beer but beer made from either from sorghum or millet, if not local maize'⁴². The efforts at the local level to preserve these seed systems are therefore tied to the question of cultural identity.

Sorghum and millet seed systems are further in decline as a direct consequence of the rampant decline of the livestock industry in the country. In areas where there are no cultural drives to preserve these seed systems, farmers lack ready markets to dispose of these cereals. A robust livestock industry would have greatly helped 'to create demand for millet and sorghum which could have even attracted the attention of the multinational seed companies to invest in these dying seed systems'⁴³. Moreover, sorghum and millet have significant commercial and nutritional potential. Recent research has revealed their suitability for making of pasta, breakfast cereals, porridge, salty snacks and for paper, cardboard and cupboard (Zerbe 2001). In Malawi, they function as alternative staple crops when the maize crop fails due to insufficient rainfall. Furthermore, sorghum could help to address nyctatopia caused by vitamin A deficiency and anaemia due to iron deficiency. These deficiencies are rampant in Malawi as a result of the diet biased in favour of white maize (JAICAF 2008).

The fate of alternative cereal seed systems reveals competing narratives about what is the exact nature of the problem with the Malawian seed system. For seed companies, the fate of alternative crops such as sorghum and millet is merely a logical response to the forces of demand and supply. There is no effective demand for alternative cereals hence it makes no economic sense to invest in them. The main drive for seed companies is to invest in seeds whose returns are the greatest for purposes of maximising profit. For donors, the responsibility of ensuring that alternative cereal seed systems are vibrant is entirely the governments. Since the production of improved maize has been taken up by the multinational seed companies, this gives the government the opportunity to concentrate its efforts on alternative seed systems through the national breeding programme. Communities are not very much in favour of the alternative cereals because of labour intensity, land scarcity, low productivity and lack of markets. The coalition of seed companies and donors has dominated decisions that have shaped the fate of alternative seed systems. Liberalisation policies promoted by donors have privileged seed companies which have exploited the

attendant policy environment to their advantage. The seed companies have become dominant sources of seeds since liberalisation has meant donors' withdrawal of support to the national breeding programme. This has further been reinforced by the fact that donors often turn to multinational companies whenever they want to extend assistance to farmers through various programmes.

The main winners are the multinational seed companies since they have succeeded in exploiting the weak policy environment following the implementation of liberalisation policy reforms promoted by donors. The multinational seed companies control about 90 percent of the market shares. The fact that donors target the multinational seed companies as the main seed suppliers to programmes aimed at assisting impoverished farmers with access to improved seed has not only marginalised the national breeding programme but also the local seed companies. Their major source of materials is the national breeding programme and as long as it is not active, the local companies cannot compete effectively with the multinational seed companies. Moreover, local seed companies are hardly enlisted as seed suppliers to seed assistance programmes implemented exclusively by donors. The government has also propped up multinational seed companies through its subsidy programmes. The seed component of the subsidy programme is almost always supported by donors who regard seed offered by the multinational companies as being intrinsically superior to those offered by their local counterparts.

Farmers are the main losers. Even though they are not in favour of alternative cereal seed systems, the marginalisation of the public breeding programme and its limited interaction with the multinational seed companies has meant there is hardly a reliable vehicle through which farmers can be exposed to the various products of the national breeding programme. Local seed companies rely entirely on the national breeding programme for their products but they only control 10 percent of the seed market. For instance, the national breeding programme has been producing varieties of beans, cowpeas and soya beans but these remain highly inaccessible to farmers since multinational seed companies which control about 90 percent of the market do not deal with the national breeding programme. Yet crop diversification to the Malawian farmer in coping with production risks is extremely important. The farmers do not even have a wide range of choice in the hybrid maize market due to the fact that Malawi is not a priority market for the seed companies as a result of limited effective demand unless buoyed by special input support programmes.

The seed industry in Malawi has been greatly shaped by donors' competing perceptions of how to develop a viable seed system powered by the private sector under aegis of economic liberalisation. The seed companies have exploited the attendant policy environment to their advantage propped up by donors and government in a way that has marginalised the national breeding programme and local seed companies. This has, in turn, reduced the range of crop portfolio readily available to

farmers yet crop diversification is extremely important for the Malawian farmer following the increasingly fragile climatic patterns which makes attainment of food security highly unpredictable.

2.4. Issues and Challenges in the Seed Industry

The seed industry has been substantially reconfigured by the implementation of liberalisation policy reforms. These reforms have created different forms of actor networks and coalitions, both stable and fluid, with competing interests couched in narratives and counter narratives about what the major problems in the seed industry are and how they can be successfully be dealt with. The engagement and contestation between various actor networks and coalitions structured around various input support programmes has had substantial impact on the nature and form of the seed industry with significant practical implications going forward.

There is an alliance of donors and seed companies that has been harnessed by donors' push for liberalisation of the seed industry. An ensemble of liberalisation policies has created a rather weak policy environment that multinational seed companies as well as political elites have exploited to their advantage. For most donors, a private sector led seed system, supported by a permissive policy environment, is a surest strategy to kick-starting a sustainable version of African green revolution. Consequently, major donors are promoting the establishment of an extensive agro-dealer network as a viable alternative to the state run system of input supply to farmers which is condemned as inefficient and highly susceptible to rent seeking activities. In this alliance, seed companies are propped up donors and government through various input support programmes. As pointed out above, donors often support the seed component of the input support programmes in which multinational seed companies are targeted as the primary suppliers since their seed products are deemed intrinsically superior to those offered by the local seed companies but perhaps more critically important high yielding hence a panacea to the intractable problem of food insecurity. Both donors and government are keen to find quick fixes to the problem of hunger, but in addition the input support programmes, as demonstrated below, creates opportunities for patronage for government officials and their supporters. This has, in turn, marginalised the potential development of the local seed industry.

The national breeding programme is marginalised since the multinational seed companies do not deal with it except when it comes to testing new seed varieties prior to their release which is a statutory requirement. Local seed companies are the major client of the national breeding programme as it is the sole source of their genetic materials. The national breeding programme is not as robust as it used to be prior to liberalisation since donors no longer massively fund the national breeding programme. There is no need to channel funds to the national breeding programme since, in a liberalised environment; the private sector will take care of the seed requirements on the basis of the forces of demand and

supply. Yet, as demonstrated above, the private sector, dominated by the multinational companies, have their own interests that have invariably led to the dramatic decline of the national breeding programme.

Farmers are the greatest losers. The multinational seed companies control 90 percent of the market share yet they do not deal with the national breeding programme. This means that Malawi has become dependent on the multinational companies for seed supply even though the seeds are often less ideal for the local agronomic conditions. The range of genetic materials, even within the hybrid maize genre, is limited due to the business strategies of the multinational companies. This has led to more or less the disappearance of the alternative cereal seed systems notably millet and sorghum. Furthermore, the dominance of the multinational companies in the seed industry has meant products such as beans, cowpeas and soya beans from the national breeding programme do not have a vehicle through they can get to farmers since the local seed companies only serve 10 percent of the market. There is some competition between local and multinational seed companies bordering on what they offer to the Malawian farmer. Local seed companies deal mostly in OPV maize whereas multinational seed companies promote hybrid maize varieties. The manner in which this competition plays out in practice undercuts the progressive development of the local seed industry putting the farmer at a further disadvantage.

What issues and challenges have these developments created for the seed industry in Malawi in the post liberalisation context? The rest of this section examines the political economy dynamics of the set of issues and challenges facing the seed industry in the country. These issues and challenges raise several critical questions as follows:

- What is the future of the local seed companies and the national breeding programme?
- Who are the main winners and losers as a result of the reconfiguration of the seed industry?
- To what extent does the government have capacity to effectively enforce the emerging policy and regulatory framework for the seed industry?
- What are the key debates about the policy and regulatory framework for the seed industry?

Section three therefore contextualises how these issues and challenges have actually played out in the implementation of the various input support programmes since towards the end of 1990s paying particular attention to the political economy implications.

2.4.1. Local Seed Industry and National Breeding Programme

Liberalisation has intensified competition between local and multinational seed companies which in turn has undermined the progressive development of the local seed industry and the stature of the national breeding programme. The multinational companies are determined to retain their dominance in the seed industry. The local seed companies do not own their own seed processing equipment hence they have to hire the

equipment from the multinational counterparts 'yet we are competitors even though we primarily target the poorest farmers as we produce only OPVs'⁴⁴. Consequently, local seed companies often loses out business because seed companies prioritise processing their own seeds 'even when requests for seed processing are made in good time in view of tight contract deadlines'⁴⁵. In the 2009/10, for instance, ASSMAG has not been able to supply seeds to the subsidy programme 'because the seed companies were busy throughout the year'⁴⁶. The export demand for seed was quite high by countries like Kenya and Zimbabwe due to serious droughts experienced during the last growing season. This happened 'despite repeated reassurances that they [seed companies] would process our seed to enable us fulfil our contractual obligations'⁴⁷.

The regular slip ups by the local seed companies to meet their contractual obligations are affecting their ability to establish themselves as serious competitors in the seed industry. For instance, there is a huge market potential for ASSMAG 'since we deal with OPVs which are being promoted by NGOs but with regular slip ups in seed processing we are letting down our clients'⁴⁸. There is thus a strong sense that the regular slip ups in processing local companies' seed are a deliberately orchestrated competitive tactic on the part of seed companies. Some of the seed companies are producing OPVs but for those producing exclusively hybrid, it was argued, 'their market share could shrink if farmers embrace the use of OPVs which are recyclable on a wider scale'⁴⁹. This is the case because 'seed companies engage in [China-type] business, offering non-durable products because they want money while we [ASSMAG], know the depth and breadth of poverty in Malawi hence we promote OPVs that can be recycled'⁵⁰.

The stature of the national breeding programme is negatively affected because the multinational seed companies, which control about 90 percent of the market, do not engage with them except when they want release their new materials. The official position is that the multinational seed companies do not engage with the national breeding programme because the country has yet to legislate for breeders' rights. Seed companies consider the non-existence of breeders' rights legislation as a major hindrance to working with the national breeding programme since its materials are highly susceptible to theft. They argue that 'it is impossible to guarantee profitability in a situation where breeders' rights are virtually non-existent; the situation is propitious to the proliferation of counterfeit products'⁵¹. It is for this reason that 'we are reluctant to bring in new varieties onto the Malawian market'⁵². For many public sector officials, this is just an excuse to marginalise the national breeding programme and promote their own materials as a way of undercutting potential competition from local seed companies. A vibrant national breeding programme, which is the sole source of genetic materials for local seed companies would enhance competition between local and multinational companies if the materials would be both of high quality and suitable to the local agronomic conditions.

2.4.2. Winners and Losers in the Seed Industry

The liberalisation of the seed industry has given rise to a new middle layer of elites that are at least sharing the attendant benefits at the expense of the poor farmer for whom the reforms were intended to serve. The paradox, however, is that even this emerging group of elites feel that seed companies are the major beneficiary of the liberalisation of the seed industry. The middle level elites are the agro-dealers and contract seed growers for the multinational seed companies. No ordinary person can qualify either as an agro-dealer or contract seed grower since both ventures require massive capital outlays. Both ventures are thus elitist, extending benefits of liberalisation of the seed industry to a privileged few. Most of these emerging elites are politically connected, since as further demonstrated in section three, government officials have exploited the input support programmes as a source of political patronage.

However, seed companies are deemed exploitative by most agro-dealers because they prefer providing seed to agro-dealers on loan and are paid on a commission basis 'which most of the times just goes to settle the loans on which seed companies charge interest'⁵³. Many agro-dealers considered the practice of seed companies charging interest on loans extended to them as illegal. The main concern is that the seed companies are overstepping their mandate, 'behaving as if they are lending institutions which warrant scrutiny of their licenses'⁵⁴. While seed multiplication is generally acknowledged as a lucrative business, there were nonetheless sentiments that the exercise is exploitative. It was, for instance, argued that '[seed multiplication] just works out exactly in the same way as a tenancy system in tobacco farming which is very exploitative'. The main concern centres on the huge price differentials between what seed companies offer to the seed growers and what they get when they put the seed on the market. An example was given of a seed company which offers growers MK90 per kg but sales the seed at MK3750 per a 10 kg package.

Multinational seed companies are clear winners in a liberalised seed industry. The country is not only entirely dependent on them for the bulk of improved seed supply but also the seed companies are making the most out in their interaction with their supportive superstructures. The poor farmer is a complete loser. Neither can poor farmers capture the benefits of liberalisation as contract seed growers or agro-dealers nor are they beneficiaries of a readily accessible wide ranging supply of improved seeds. Private seed companies have been hesitant to provide multiple varieties of seed in small quantities desired by smallholders, as doing so increases inventory, storage and transportation costs and reduces economies of scale (Zerbe 2001). This is a direct consequence of the 'conflict between generating profits and serving small, poor farmers with special varieties and small quantities of seed that they require'⁵⁵.

2.4.3. State Regulation of the Seed Industry

The liberalisation of the seed industry has substantially undermined the capacity of the state to effectively regulate the seed industry. The adoption and implementation

of the liberalisation policies in a quick succession has contributed to the creation of considerable challenges in the implementation of the regulatory frameworks. Several actors have taken advantages of the weaknesses and lapses in the regulatory policy environment to advance their selfish interests as demonstrated below at the expense of the poor Malawian farmer. While the policy and regulatory framework for the seed industry is lauded as sound and progressive, 'it is but undermined by laxity in enforcement'⁵⁶. There is thus questionable capacity for MoAFS agencies to enforce standards in the seed industry in order to ensure the availability of quality seed to the farmer.

The laxity in the enforcement of standards is partly triggered by political opportunism and limited capacity of the responsible agencies. Booth et al. (2006) argue that the failure to manage the transition to democracy was, inter alia, manifested in declining capacity of the civil service to function professionally. This was attributed to the fact that patronage considerations were preponderant in informing, conceptualizing and implementing policies. In the seed industry, the impact of this policy milieu was felt with regard to the Targeted Input Programme (TIP) (2001-4). It was argued that 'politics totally undermined the seed inspection regime since there was virtually no political will to enforce the regulatory framework'⁵⁷. Most of the politically connected seed suppliers to the programme 'simply provided grain from the village which affected the quality and impact of the programme'⁵⁸.

This was not only restricted to the TIP. Most commercial seed suppliers 'were simply putting on the market painted grains as seed'⁵⁹. The capacity for seed inspection remains limited despite efforts to ratchet it up through localising training in seed technology. It is a huge challenge for the seed certifying agency to carry out the exercise for seed grown in dispersed locations due to 'paucity of staff even though such expertise is available locally'⁶⁰. This is further undermined by rampant corruption in seed inspection exercises. The root cause of this problem is that seed inspectors are not adequately resourced in a decentralized set-up which 'predisposes them to fraud, malpractices and corruption, resulting in excessive laxity in the enforcement of the regulations'⁶¹. In the seed inspection regime, corruption perpetrated mostly NGO officials, 'has in some cases resulted in OPVs being over recycled, which greatly undermines the productivity of the seed'⁶². This is exacerbated by the rather limited capacity of the seed inspection agencies and further compounded by 'the lack of constant injection of the breeders' seed into the system'⁶³. Furthermore, the weak seed inspection regime has made it possible for 'seed companies to recycle their products, which is greatly affecting germination rates'⁶⁴. In some cases, the germination rates are as low as 40 percent such that farmers are forced to replant altogether. Seed companies are supposed to bring onto the fresh seed products every year but have been able to recycle because 'seed inspection is either non-existent or the sampling that is done to detect such malpractices is inadequate'⁶⁵.

2.4.4. Policy and Regulatory Framework

While Malawi has a fairly sound and progressive policy and regulatory framework, the liberalisation of the seed industry has opened up space for debates about further refinements in the policy and regulatory environment that would further better the seed industry. Strikingly, these debates are not very much concerned with improving efficiency in the existing policy and regulatory framework but rather in creating opportunities that would further commercial and political interests of certain actors notably seed companies.

Malawi has enacted both the Seed and Biosafety Acts. The former was initially promulgated in 1990 but substantially revised in 1996 whereas the latter was propagated in 2002. The Biosafety Act is backed up by both a policy and a set of regulations developed in 2007. The Seed Act provides for procedures of recognizing seed varieties, seed testing and inspection, registration of seed sellers, import and export of seed, production of seed for certification, certification seed and seed certification scheme. The Biosafety Act legislates against engagement in genetic modification of organisms; the importation, development, production, testing, release, use and application of genetically modified organisms; and the use of gene therapy in animals, including human beings unless specifically licensed to do. Nonetheless, it is impossible to conclude whether GMOs are acceptable or not on the basis of the Biosafety Act. The legislation simply provides guidance on how to handle GMO products. This reflects the circumstances that led to the enactment of the Biosafety Act. The enactment of the Biosafety Act, 2002 'was a function of the 2001/02 hunger crisis following the USA's offer of GMO maize as food aid'⁶⁶. The country did not have a legislative framework in place on how to deal with GMO products "but was desperate for food aid"⁶⁷. Under the Biosafety Act, the GMO maize was accepted but on condition that it was milled right at the port of entry.

The promulgation of the Biosafety Act has provided a platform for debate about the suitability of GMO crops in the country. While the domestic scientific community is divided on the suitability of GMOs, multinational seed companies project them as a potential trigger of a sustainable green revolution in Malawi. GMO crops are depicted as 'as a key to a possible revolution in the food security and prosperity of smallholder farmers'⁶⁸. For instance, Monsanto observed that it sells GMO products in other countries, such as South Africa, and that trials have been initiated in Malawi. Biotechnology revolution is promoted as a panacea for hunger, disease, poverty, development and environmental degradation (Zerbe 2001). The pro-GMO scientists argue that 'biotechnology should simply be understood as a catalyst for development'⁶⁹. They argue that GMO seeds are high yielding, disease and drought resistant, traits which are beneficial to the farmer especially in the context of unpredictable weather and climatic patterns. In addition, GMOs would have huge positive impact on the environment since the use of pesticides would be greatly reduced. A scientific assertion of the pro-GMO scientists is that 'GMOs do not change starch content; they are simply a tool to enhance

yield levels, disease and drought resistance etc'⁷⁰. They conclude that 'what Malawi needs is the pre-requisite knowledge in GMOs in order to make informed decisions and choices'⁷¹. For this reason, anti-GMO scientists are characterised as 'lacking good will'⁷².

The argument of the pro-GMO scientists is that their counterparts 'hide under the cloak of terminator genes'⁷³. For anti-GMO scientists, the terminator genes are a key exploitative strategy for the multinational companies 'since the terminator genes ensure that seed cannot be recycled at all'⁷⁴. This is construed as a huge risk to the local seed production and consumption for it would destroy the informal seed sector which is so central to the country's farming system. Arguments about health risks are also raised. This is based on the fact that 'we do not fully understand the health risks associated with GMOs especially since countries that have adopted GMOs have not fully commercialized them; they are still doing further research'⁷⁵. Pro-GMO scientists regard this 'as fear of unknown geared toward simply buying time at the expense of a possible green revolution which the country desperately needs'⁷⁶.

The debate about GMOs is therefore far from being settled but it has started in earnest. Nonetheless the anti-GMO scientists' voice is relatively privileged compared to that of their counterparts because of the rather suggestive actions on the part of government. There have been several overtures by international organisations to MoAFS to experiment with GMOs which have been turned down. Examples include water efficient maize, cotton and cassava. In all these cases 'the organisations concerned insisted on taking the crops straight to the field yet the GMOs were bred elsewhere'⁷⁷. The official line is that if GMO products have to be tried 'the crops must be bred locally and the capacity of local scientists has to be built accordingly'⁷⁸.

The post liberalisation context has raised the profile of breeders' rights in the seed industry. Both donors and seed companies argue that the seed industry is less vibrant due to the absence of the breeders' rights legislative framework. This view is to a great extent shared by local breeders and the absence of breeders' rights legislation is considered as a huge constraint to the rapid development of the seed industry since it does not motivate breeders 'to exercise scientific ingenuity because they know their efforts will not be rewarded accordingly or worse they will be abused'⁷⁹. There was, for example, a strong feeling that 'MH 17 and MH 18, which spearheaded the maize hybrid revolution, in the late 1980s and early 1990s, might have been renamed by unscrupulous traders due to the non-existence of breeders' rights'⁸⁰.

The draft legislation was developed in 2007 'but it is stuck at the Ministry of Justice; there has not been any feedback in order to move the process forward'⁸¹. While acknowledging the need for breeders' rights legislation, the initiative has been pushed mainly by donors as an integral part of a liberalised seed industry. The momentum towards the development of the breeders' rights legislation 'fizzled out the moment resources run out'⁸². However, the absence of the breeders' legislative framework has been exploited as a justification by the

multinational seed companies for not working with the national breeding programme as a potential source of their genetic materials. In the absence of the breeders' rights legislation, 'the products of the national breeding programme would not be competitive in an industry where competition through product differentiation is the order of the day'⁸³.

3. Input Support Programmes since the 1990s: Narratives, Actors and Interests

Malawi is now projected as a model of how to transform a rather static smallholder agricultural sector through state sponsored subsidies to meet national food requirements as well as surplus for export. The key question is what has happened in Malawi since the late 1990s following the liberalisation of the seed industry and the implementation of a succession of input support programmes. What do these programmes tell us about the political economy of the seed systems in the country?

The liberalisation of the seed industry coincided with a period when Malawi's agriculture was in a crisis as a consequence of the combined effects of the collapse of the credit system, the removal of hybrid maize and fertiliser subsidies and regular incidents of adverse climatic conditions such as drought, flash floods and dry spells (Chinsinga 2004; Mann 2009). Food insecurity became chronic and pervasive, the economy was teetering on the brink of collapse and political parties were offering competing packages of possible solutions to the country's predicament. So deep was the crisis that donors identified Malawi as a major investment country to facilitate its recovery through the agricultural sector which is the mainstay of the country's economy. And, in a liberalised context, the private sector saw this as the potential for growing market given the previously low uptake of hybrid and OPV varieties estimated at less than 30 percent in the mid 1990s (Smale 1995). Donors were further persuaded to invest in Malawi's agricultural sector given the centrality of food security in the country's political economy which has invariably become an electoral battleground in a democratic multiparty context.

In the 1989/90 growing season the Starter Pack (SP) programme was initiated as a joint effort between donors and government. It was widely held as 'a home grown' scientific initiative. However, as the paper discusses below, this was overtaken by events, particularly political processes, as a succession of input subsidy initiatives were rolled out which included SP, Targeted Input Programme (TIP) and Agricultural Input Subsidy Programme (AISP). These efforts received major political attention, substantial backing from the government and donors, and involved-in different ways-both the commercial private sector and development NGOs. Given their prominence, scale and level of political and financial backing these subsidy programmes have fundamentally shaped the way Malawi's seed system currently operates. The rest of this section therefore explores how the input

support programmes have shaped the nature and form of the seed industry in a post liberalisation context. The analysis reveals that the implementation of these input programmes have generated competing narratives, creating networks between different actors that have either been stable or fluid. These networks have essentially been promoting self interest' often at the expense of the smallholder farmer in whose name a gamut of policy positions or proposals are justified'⁸⁴.

3.1. Starter Pack and Targeted Input Programme Interventions

The Starter Pack (SP) is described as a home grown scientific initiative whose ultimate goal was 'to facilitate long-term agricultural change to increase production and to enhance soil fertility and reduce dependence on imported fertiliser' (Mann 2009: 7). The SP input package was based on the work of the Maize Productivity Task Force (MPTF) constituted in 1996 which 'identified and recommended "Best Bet" seed, fertiliser and legume rotations for all smallholder farmers in the major agro-economic conditions of the country' (Blackie and Mann 2005: 16). The MPTF comprised of members drawn from both private and public sector scientists, economists and policy makers-and its motivation was to find lasting solutions to address the country's severe food shortages. The 'Best Bet' agronomic recommendations were inspired by the scientific breakthroughs in hybrid maize breeding underlined by the release of MH 17 and MH 18 which were developed expressly for Malawi local conditions. These hybrids met tests for grain texture and storage requirements for small-scale farmers who produce maize for their own consumption (Smale 1995; Blackie and Mann 2005).

The various 'Best Bet' technologies had been tested in over 1700 farm level trials but the challenge was how to move the technology to farmers in order to facilitate the envisaged transformation in the farming systems. Most farmers could not afford the 'Best Bet' technologies 'since the majority were poor with about 60 percent of them living on less than a dollar a day and worsened by the collapse of the credit system'⁸⁵. The 'Best Bet' technologies provided alternative adjustments to the one-size-fits all fertiliser recommendation of 96kg of nitrogen per hectare described as 'an impossible investment for Malawi's smallholders, who are among the poorest in Africa' (Blackie and Mann 2005: 20). The adoption of SP was greatly influenced by the worsening food security situation during the 1997/8 growing season just a year before the June 1999 general elections. The government approached technocrats for a practical set of recommendations to arrest declining soil fertility and food supply for it realised that 'producing sufficient quantities of food was key to economic stability and political acceptance' (Blackie and Mann 2005: 22).

Technocrats seized this opportunity to put on the table the promise of the field tested 'Best Bet' technologies as a way of facilitating long-term structural change in the country's agricultural system. The recommendation was that government should extend to all farming families inputs adequate for 0.1 ha as described above.

Technocrats designed SP as a 5-10 year programme during which it would bring about a long-term change in farming practices (Smale and Jayne 2003). The long-term nature of the programme recognized that 'it would take time to effect changes in farming system'⁸⁶. Inspired by the promise of the 'Best Bet' technologies, 'the SP was conceived less as a free input distribution programme but more as a demonstration and teaching package to raise productivity dramatically and foster structural change'⁸⁷. The government enthusiastically embraced SP as a multi-year universal programme because it would 'be administratively easy and politically attractive in the run up to the 1999 general elections' (Potter 2005: 34).

SP was scaled down to the Targeted Input Programme (TIP) in the 2000/1 growing season. The implementation of SP generated debate amongst donors who supported its financing. These included DFID, USAID, World Bank and EU. Unlike the government, donors did not buy the idea of SP 'as a multi-year programme but rather as a short-term response to the 1997/8 food security crisis; not as a long term programme of agricultural transformation'⁸⁸. The debates centred on such issues as beneficiary dependency, impact on private sector, agricultural input suppliers and cost effectiveness. Most donors were wary of the fact that the implementation of the programme on a long-term basis would promote beneficiary dependency including the possibility that 'commitment to the programme might be tied to electoral cycles'⁸⁹. USAID was particularly against the implementation of a universal SP but would support it if the programme would be targeted to those in need. The idea of geographical targeting was considered but was not pursued because of its sensitivity during an electoral year. This was the case because 'population and poverty distribution in Malawi would [have led] to a preponderance of packs going to the southern region, the stronghold of the ruling party' (Potter 2005: 36).

While it was argued, particularly by USAID, that SP would disrupt the development of a private sector led input provision system; the advocates of SP argued that these fears were not justified. They observed that 'the vast majority of smallholders were so short of cash that, at that time, they represented no market for hybrid seed or fertiliser' (Blackie and Mann 2005: 24). In fact, the implementation of SP would go a long way in facilitating the development of a private sector input supply system since smallholders' access to quality inputs would stimulate them to purchase more inputs in the long-run. TIP switched from hybrid maize to OPV, reduced the package of legume seed from 2kg to 1kg and reduced the quantity of basal fertiliser from 10kg to 5kg. SP advocates argue that the reductions were not informed by scientific considerations but by 'rather donor driven ideological orientations and sheer concerns for cost effectiveness'⁹⁰. In SP, hybrid maize was preferred because it was proven ideal for Malawi conditions; the fertiliser amounts were based on a scientifically validated compromise for the area specific recommendations by the MPTF; and legumes were included for their triple benefit of improved protein levels in the household diet; improvement of soil conditions through nitrogen fixation to appropriate

levels; and a contribution to household incomes as cash crops for which there was robust demand (Potter 2005). In TIP, donors considered OPV maize as 'a key component of the exit strategy and potential sustainability because farmers would be in a position to recycle seed for at least three consecutive growing seasons'⁹¹. Unlike hybrid, the resource poor farmers would not have to replace seed on an annual basis since recycled OPV maize can produce consistently for up to three consecutive years without the threat of losing yield vigour (Smale 1995; Tripp 2001). There was at least a scientific justification for the reduction of the amount of basal fertiliser to 5kg. There was some evidence that the reduction of basal fertiliser would not seriously jeopardize yield levels, while providing a significant saving on input costs for the programme (Chinsinga et al. 2002; Potter 2005).

The evolution of SP into TIP was very much influenced by the donor community's shifts in thinking about poverty. By the turn of the new millennium, chronic poverty and vulnerability had become development fads which resulted in a consortium of donors facilitating the development of the National Safety Net Strategy (NSNS) as a means of confronting chronic poverty and vulnerability on a sustainable basis. The NSNS had four pillars, one of which was the TIP. The other three were Public Works Programme (PWP), feeding programmes for vulnerable groups (mother and young children), and Direct Welfare Transfers (DWTs) (NEC 2000; Chinsinga 2005). The NSNS argued that a mixture of free, subsidised, credit supported and free market options would be required to improve access to agricultural inputs. This meant that 'TIP was no longer an agricultural production programme but rather a safety net intervention'⁹². According to some former MPTF members, the scale down of SP to TIP 'marked the beginning of the breakdown of the link between agricultural research and policy making'⁹³. This was particularly pronounced during the 2004/5 ETIP. The input packs contained no extension messages at all.

The SP/TIP interventions were clearly a technocratic design, led by a coalition of local actors but heavily dominated by donors keen on boosting agricultural productivity and avoiding food insecurity. The SP/TIP interventions were allied to the private sector as a source of seeds for distribution to the beneficiaries. These programmes were later captured by particular political-commercial interests, which, as described above, led to the rampant deterioration of the standards in the seed industry. The SP/TIP programmes were captured as sources of political patronage. However, the SP/TIP was nothing compared to what was to come. The Agricultural Input Subsidy Programme (AISP) from the 2005/6 growing season raised the game completely and transformed the subsidy programme from one which was largely controlled by technocrats in the state and in donor agencies to one dominated by domestic political agendas driven mainly by the centrality of food security in the country's political economy.

Table 2. Principal Changes in Programme Design and Implementation (2006/7 - 2008/9)

	2005/6	2006/7	2007/8	2008/9
Subsidised inputs	Maize and tobacco fertilisers, maize seed (OPV)	Maize and tobacco fertilisers, maize seed (hybrid and OPV)	Maize and tobacco fertilisers, maize seed (hybrid and OPV, legume seed (limited), cotton seed and chemicals	Maize and tobacco fertilisers, maize seed (hybrid and OPV, legume seed (limited), cotton seed and chemicals, maize storage chemicals
Voucher distribution system	District allocation by maize areas, distribution through Technical Assistants (TAs)	District allocation by maize areas, distribution varied through local government, TAs, Village Development Committees (VDCs), MoAFS	District allocation by farm households and areas, distribution through MoAFS and VDCs	District allocation by farm households and areas; use of household register, open meetings for allocation and disbursement led by MOAFS
Voucher redemption	Only through SFFRFM and ADMARC	Fertiliser distribution also through major retailers; flexible maize seed vouchers through wide range of seed retailers	Fertiliser distribution also through major retailers; flexible maize and legume seed vouchers through wide range of retailers; cotton inputs through ADDs	Fertilisers only through ADMARC and SFFRFM; flexible maize and legume seed vouchers through wide range of seed retailers; cotton inputs through ADDs
Other innovation systems		Coupons specific to fertiliser type; fertiliser buy back system; and involvement of the Logistics Unit	Reduced copies of coupons; remote EPA premium; and fertiliser buy back system	Extra coupon security features and market monitoring; no buy back or remote EPA premium; and ADMARC computers for voucher processing

Source: Dorward and Chirwa (2009: 5)

3.2. The AISP Intervention

The AISP represents an enormous departure from SP and TIP particularly in terms of size of the input packages and modalities of distribution. Unlike SP and TIP, the distribution of the inputs is done using vouchers and the private sector is involved in some way or another particularly in the distribution of seeds. The AISP has evolved since its introduction in the 2005/6 growing season. The major changes between 2005 and 2009 are summed up in Table 2.

The magnitude of the government's subsidy to fertiliser has been increasing since the introduction of the initiative in 2005/6 growing season. Farmers paid for tobacco and maize fertilisers at MK1,450 and MK950 per 50kg bag respectively. The prices were harmonized at MK900 in the subsequent year, reduced to MK800 during the 2008/9 programme. The price was further reduced to MK500 during the 2008/9 growing which coincided with the May 2009 general elections. For the 2008/09 programme, the price remained at MK500 but the subsidy to tobacco farmers was discontinued. The focus is exclusively on maize fertiliser, maize and legume seed.

It is, however, important to note that during the period of uncertainty in the transition from TIP to AISP MoAFS was considering ways of achieving a sustainable version of a uniquely Malawi Green Revolution. In 2005, MoAFS developed a road map for spearheading agricultural transformation in which it observed that 'reforms carried

out at the macro-level have failed to reach their potential largely because of the ever-present threat of a food crisis much of what is implemented as policy' (GoM 2005: 1). Consequently, the needed long-term change is lost in the urgency of dealing with immediate real or perceived crisis. Its prognosis was that agricultural productivity can only be achieved through the use of improved agri-inputs along with associated technologies, restoration of soil fertility and an efficient marketing system.

The proposed strategy was to consider distribution of green pack inputs to all smallholder farmers estimated at 3.1 million, which should 'incorporate agronomically "Best Bet" technologies...including developing capacity for biotechnology research to mitigate droughts and other factors affecting crop and livestock production' (GoM 2005: 5-8). There was clearly a hint to return to the tested and proven agronomic practices that powered the SP initiative. The 'Best Bet' technologies highlighted in the road map included quality seed designed for specific agro-ecological conditions, early maturing varieties to reduce vulnerability to drought, economically efficient fertiliser recommendations, appropriate husbandry practices and extensive extension advice to farmers through a range of media.

It appears that the green revolution initiative was completely overshadowed by the panic to address the devastating effects of the 2005 hunger crisis. And the unprecedented success of the AISP undermined the

technocratic clout of the green revolution road map that MoAFS had been working on. The political hype and the international media frenzy made it 'practically difficult to flag alternatives to AISP when it had successfully addressed the problem of chronic food insecurity'⁹⁴. The following is illustrative of the apparent lack of policy space to champion alternatives to AISP:

...Malawi went from being a chronic recipient of food aid to net exporter of maize within just two years, bringing desperately needed income to the cash strapped country. Not only that, but Malawi actually became a food donor to other African countries (AGRA 2009: 1).

The AISP is widely billed as a tremendous success. It has become a model of agricultural policy for which Malawi is hailed (AGRA 2009; UNESCO 2009; Denning et al. 2009). Since its introduction, Malawi has consistently produced surplus maize over and above its annual requirement estimated at 2.1 million metric tonnes. In all growing seasons Malawi has produced over 500,000 metric tonnes of surplus maize but the 2007/8 season broke the record. Total maize production was estimated at 3,444,655 metric tonnes. This represented a surplus of about 1.5 million metric tonnes over and above the annual food requirement estimated at 2.1 million tonnes. Consequently other governments in Africa 'are contemplating taking this [subsidy] path to revamp their agricultural sector against the World Bank's stance to discourage agricultural subsidies' (UNESCO 2009: 99).

3.3. Seeds and Subsidies

The apparent success of AISP has engendered competing as well as counter narratives about several key elements of the seed industry in the country. There is intense debate about which would be an appropriate maize seed system for the country, whether GMO maize is a saviour or slave and the appropriateness of the market or state in the delivery of the inputs to the beneficiary farmers. These debates demonstrate, among other things, how different actors have exploited the liberalisation of the seed industry and the implementation of the various input support programmes to promote their own interests either in their own right or in collaboration with other actors. In turn, these contestations have shaped the current nature and form of the seed industry which is dominated by foreign private commercial interests and tacitly supported by donors and government officials as a result of the coincidence of interests among these actors albeit with totally different motivations and goals.

3.3.1. What Type of Maize: Hybrids, OPVs or Local Maize Varieties?

There are a wide range of competing views about the most appropriate maize seed system for the country. The main protagonists in this debate include seed companies, donor agencies, NGOs, government officials and farmers. There are some interesting coalitions and networks amongst these protagonists about what should be promoted as the most suitable maize seed system in the country. As demonstrated below, each actor is

determined to promote a maize seed system that would best promote their interests. Apart from seed companies, the narratives promoted by each group of actors are not entirely homogeneous. There are thus counter-narratives about what should be the most appropriate system for the country among actors, each framed and motivated by specific goals and interests that they would like to achieve, all occurring in a post liberalisation context, underpinned by a rather weak policy environment.

Seed companies have clearly seized on the apparent success of AISP to justify the use of hybrid seed in Malawi's farming system. It was, for instance, argued that 'the AISP has been successful because of giving farmers a choice between hybrid and OPV maize'⁹⁵. In this regard, it was observed that 'AISP broke the record during the 2007/8 growing season when hybrid maize was introduced as an option for farmers; the 2005/6 season used exclusively OPV maize'⁹⁶.

While, of course, acknowledging the fact that OPV maize seed can be recycled, it is argued that this ideal is not always attainable because 'OPV yields are low hence in the end farmers have nothing to recycle'⁹⁷. It has been argued that the apparent low uptake of hybrid maize seed in Malawi is a direct result of 'farmers not getting the right information particularly through NGOs to make informed decisions'⁹⁸. This is justified by taking recourse to the AISP's experiences. When during the 2007/8 growing season farmers were offered a choice between hybrid and OPV maize seed, up to 76 percent of the farmers opted for the hybrid (Denning et al. 2009).

For the seed companies, the apparent popularity of hybrid maize challenges the perception of some donors and NGOs that hybrid maize is inappropriate for small-scale farmers. The popularity of hybrid maize varieties is a vindication that farmers are able to make informed decisions and choices if they are provided with the necessary information. The AISP's success has provided the seed companies with a platform to assert that 'the hybrid maize system is the only system that would ensure that Malawi emerges out the hunger situation'⁹⁹. However, OPV maize is predominantly produced by ASSMAG which relies on the processing equipment of the seed companies and given that there are always hitches in this arrangement 'the popularity of hybrids may to some extent reflect the scarcity of OPV maize seed on the market and not necessarily farmers' preferences'¹⁰⁰.

The discourse among donors about the relative merits of hybrid and OPV maize seed is not as pronounced as it is among NGOs. Donor agencies are generally indifferent between hybrid and OPV maize seed mainly because of the focus on the 'element of farmers' choice through a market mechanism whether to go for hybrid or OPV maize seed'¹⁰¹. However, the EU is well known for its preference for OPV to hybrid maize seed for resource poor farmers and it has been a major sponsor for initiatives aimed at promoting alternative maize seed systems.

The ASSMAG initiative was supported by the EU including various seed multiplication projects of alternative maize seed systems by both government agencies and NGOs. The EU was reportedly instrumental in facilitating the switch from hybrid maize seed in SP to OPV

maize seed in TIP (Potter 2005). The differences between donor agencies are, however, indirectly manifested in the views of NGOs that they support in the seed sector. The pro-hybrid maize donor agencies emphasize on the hybrid maize's efficiency in converting fertiliser applied into yields. They observe that government is 'rather attracted to hybrid maize seed so as to maximise yield under AISP'¹⁰².

The positions of NGOs on the hybrid-OPV-local maize seed are quite diverse. There are those NGOs that promote local seed varieties; those that promote OPV maize seed varieties; and those that promote hybrid maize seed varieties. The main justification for NGOs promoting local maize seed varieties is that the local maize seed system is sustainable. Sustainability hinges on the fact that local seeds can be recycled continuously; are pest and disease resistant; familiar to farmers; easy to store; amenable to traditional methods of processing; tastes better; and can withstand prolonged periods of dry spell. Some of these NGOs argue that promoting the hybrid maize seed system would be tantamount 'to divesting local farmers of their right since they have been custodians of seed from time in memorial; it will be unfair to take this responsibility away from them and give it to foreigners who are only interested in making profit out of local people'¹⁰³.

The main concern is that hybrid maize seed system is very exploitative to the extent that 'those championing the hybrid maize seed system [are] blinded by the profit maximization motive'¹⁰⁴; and 'hybrids are only good for commercial purposes; they are not suitable for the Malawian smallholder such that championing hybrids means that the largest proportion of Malawian lives are being put at risk for the sake of few profit seeking companies'¹⁰⁵. The primacy of the profit drive, they argue, does not only encourage dependency but also transforms hybrids into terminators of both local seed germplasm and the financial capabilities of farmers. For many of these NGOs, the fact that the farmer has to replace hybrid seed annually to sustain the system suggests that 'the terminators [seed companies] are deliberately blind to the poverty of the farmer; they only have eyes for the financial and market gains in the poor farmer'¹⁰⁶. The Malawian smallholder farmer is thus considered too poor to afford and satisfy the management requirements for a profitable hybrid maize seed system.

NGOs promoting OPV maize are not necessarily averse to local maize. But, in fact, they prefer OPV maize to either local or hybrid maize seed, arguing that 'OPV maize satisfies all the people's preferences for taste, poundability and storability in addition to being high yielding compared to local maize'¹⁰⁷. OPV maize is preferred above the rest because 'it balances high disease resistance and high yielding traits besides being recyclable'¹⁰⁸. While acknowledging hybrid maize as high yielding, these NGOs consider hybrids as less ideal for poor subsistence farmers since it is 'costly as seed has to be replaced every year; a feat which most rural Malawian farmers cannot manage'¹⁰⁹. These observations hinge on the fact that resource constrained farmers cannot afford the management regimes associated with the profitable cultivations

of a hybrid maize system. There is thus no question about the high yielding potential of hybrids but for most NGOs they do not serve the goal of poverty reduction very well. In this regard, it was argued that 'introducing poor resource farmers to hybrid maize is hypocritical when we claim to be working towards reducing their poverty; hybrid maize does exactly what is written in the bible-giving with the right hand and taking away with the left hand'¹¹⁰. The essence of this observation is that the high yields associated with hybrid maize are not authentic 'since farmers would have to dispose of substantial proportion of the yields in order to get money for purchasing seed during the next growing season'¹¹¹.

OPV maize is considered superior to hybrid maize not only because it can be recycled but also because it does not require a heavy dosage of fertiliser. OPV maize's fertiliser utilization is 30 percent lower than hybrids and as such 'OPV maize is not a financial terminator like hybrid maize which requires that seed be replaced annually as well as high amounts of fertilisers in order to realize maximum benefits'¹¹². The suitability of OPV maize for domestic consumption was also emphasized. OPV maize is much more suitable than hybrid maize because 'it produces less husks compared to hybrids'¹¹³; 'OPV maize flour makes good nsima unlike hybrid maize'¹¹⁴; and 'OPV maize flour lasts longer than the same amount of hybrid maize flour – to the extent that hybrid maize is regarded as one of the major enemies of women'¹¹⁵. OPV maize is therefore regarded as the ideal maize seed system with the capacity to contribute to household food security and poverty reduction.

NGOs promoting hybrids are principally concerned with achieving food security at household levels. Hybrids are considered 'as a tested and proven route out of poverty and food insecurity since they are fast growing, early maturing, and high yielding'¹¹⁶. The question of affordability of a hybrid maize seed system is considered ill-conceived. It is regarded as a direct consequence of 'underrating farmers' capacity to procure hybrid seeds and this is totally wrong and evidence on the ground is pointing to the increasing popularity of hybrid maize seed even in cases where farmers do not get any form of external support'¹¹⁷. The uptake of hybrid maize seed is low across the country, it was argued, because of 'misinformation to farmers; there is no any problem with hybrids and honestly the hybrid maize system is the best option we have'¹¹⁸.

There are, however, some NGOs in this category that are constrained by the nature of their programme design. They target primarily vulnerable households 'for which the question of sustainability is out of question; hybrids are a perfect option because of their capacity to bring about high yields'¹¹⁹. They acknowledge that the provision of hybrid seed to these households is sustainable up to the end of the programme cycle beyond which 'households will have to buy their seed on their own; we are only postponing their misery since the best [would be] to give them OPVs but we are limited by their yields'¹²⁰. The switch to OPV maize would thus affect the achievement of their programme goals and objectives 'which is

are very important considerations for continued support from our donors¹²¹.

Government's official policy is to promote the use of improved maize varieties. This means that government is committed to promoting both hybrids and OPVs. However, it was argued that 'there has been a silent switch from OPVs to hybrids as the subsidy programme has evolved'¹²². The issue is that government has not been consistent in terms of promoting both hybrids and OPVs (cf. Smale 1995). It has been switching between the two dictated largely by circumstances. For the five years the government implemented TIP, the emphasis was on OPVs yet in SP it promoted hybrid. The major concern is that the oscillation between hybrid and OPV maize is often not motivated by 'scientific considerations but rather by circumstantial and opportunistic considerations'¹²³.

It is, for instance, argued that the inclusion of hybrids as an option in the subsidy programme is motivated by the primacy of the food security agenda in MoAFS's portfolio. Alternative maize seed systems are not 'favourable to the food security agenda even though they are relatively high resistant to pests and diseases; what matters is the yield potential'¹²⁴. The apparent preference for hybrids is linked to the primacy of maize in the country's political economy (cf. Sahely et al. 2005; Harrigan 2005; Chinsinga 2007). Food security, equated to more or less the availability of maize to the masses at affordable prices, remains the key electoral battleground. The legitimacy of any government is almost entirely dependent on its ability to fulfil this extremely vital element of the social contract. Politicians are therefore interested in hybrids because 'they want to have something to show to the people during the electoral campaign; high yield attainable through the use of hybrids is the drive for the government, government here as in politicians'¹²⁵.

Most NGOs observed that that the promotion of hybrid in the subsidy programme is not on the basis of MoAFS's technical recommendations but is rather 'driven by politicians who want to be popular with people there and then; our politicians are 'Chinese' just like hybrids'¹²⁶. By pushing for hybrid maize and access to fertiliser through the subsidy programme, politicians have managed to achieve instant popularity but at the expense of sustainability 'since fertiliser and hybrids are financially demanding yet the rural Malawian farmer's pockets are full of holes'¹²⁷. These NGOs conclude that hybrids and fertilisers are 'politicians' talk, not technocrats' and farmers' talk, motivated purely by short-terms political goals'¹²⁸. There could be some truth in these sentiments because nearly all MoAFS officials at the district level provided a rather telling caveat to the official hybrid drive. It was, for instance, observed that while hybrids are high yielding most farmers in rural Malawi cannot readily afford the associated management regimes 'without the helping hand of Moses [government] in the wilderness'¹²⁹. The fear is that most farmers cannot sustain the hybrid maize system without government's input support programmes. The hybrids are thus being promoted with full knowledge of their constraints principally because of their high yielding capacity.

Some breeders expressed preference for the hybrid to the OPV maize system on the basis of the laxity of the seed inspection regime. The justification is that there is a higher probability that farmers will end up with poor quality seed if they are using OPVs compared to hybrids. The laxity in the seed inspection regime exacerbated 'by corrupt tendencies, makes it possible for farmers to be provided with fourth or even fifth generation OPVs'¹³⁰. The likelihood of over recycling OPVs is further enhanced by the apparent irregularity in the injection of foundation seed in the system due to perpetual funding constraints facing the national breeding programme. The risk of this nature for hybrids is greatly minimized 'since it is at least an established practice that seed has to be replaced on a yearly basis'¹³¹.

Surprisingly the hybrid maize system is very popular with many farmers. Some farmers interviewed for this study stated that they consider hybrids 'the most viable option in as far as the fight against hunger is concerned'¹³². They considered hybrids superior to the alternative maize seed systems when it comes to fighting hunger because they are high yielding, grow fast, mature early and do well with little rains. Nonetheless, the farmers did acknowledge the merits of local maize vis a vis hybrids, observing that local maize is highly resistant to diseases and pests, tastes better, easy to store and produces good flour both in terms of quality and quantity.

Farmers' preference for the hybrid maize system revolves around concerns about shortage of land and climate change. Land in rural areas is in short supply due to excessive sub-division of existing farm-land among family members. Hybrid maize is attractive because 'you need more land in order to attain substantial yield from local maize while you can harvest twice as much on the same piece of land if you use hybrid'¹³³. There is a widespread recognition that climate and weather patterns have changed, which in the farmers' view, 'makes it risky to emphasize on local maize due to unpredictable climatic patterns'. The popular view across the eight focus group discussions (FGDs) was that climate change makes the cultivation of local maize non-viable.

While there appear to be a general preference for the hybrid maize system, the majority of the farmers in the FGDs indicated that they still plant local maize not out of choice but because of poverty constraints. Unlike the local maize seed system, 'it is not possible to get hybrid seed from your own granary or beg from your neighbours or relations because we know it costs money'¹³⁴. The money constraint is considered as a barrier to the use of hybrid maize seed on a wider scale as reflected in the following sentiments in the FGDs: 'given resources, we would be planting hybrid maize because it is high yielding'¹³⁵; 'we plant local maize because it is readily available'¹³⁶; and 'we plant hybrid only when we get the opportunity to access seed as it requires spending'¹³⁷. There are, however, some farmers who plant both hybrid and local maize as a risk diversification strategy. This is motivated mainly by the changing climatic context 'which makes farming an unpredictable venture since its either you have too much or too little rain'¹³⁸.

There are some cultural myths that render the local maize seed system resilient. It is strongly believed that local maize makes good beer and it is a secret to a happy and vibrant marriage. Men FGDs consistently observed that 'local maize cannot be given up completely; it will always be planted as a means of preserving our culture because it produces good beer'¹³⁹. While acknowledging that hybrid maize is high yielding and therefore a reliable food security buffer, women FGDs argued that 'planting the entire garden to hybrid maize would mean that you do not want your marriage'¹⁴⁰. Local maize is literally described as 'a marriage builder' and hybrid maize as 'a marriage breaker' 'because hybrid nsima hardly satisfies our men'¹⁴¹. There is also a strong belief that hybrid maize is commercially viable only when it is disposed of immediately after harvest. It becomes a commercial liability when sold long after harvest because it loses weight as it further dries up. The strategy therefore is 'to use a pail when selling hybrid maize long after harvest and a scale when selling local maize'¹⁴². The underlying logic is that if a pail is used when selling hybrid maize, then the seller is going to make profit. It would thus be a huge loss to use a pail when selling local maize because it maintains its weight.

The narratives above clearly underlie the political economy dynamics of the appropriate maize system. The multinational seed companies are quite unequivocal. They champion the hybrid maize seed system because they deal almost entirely in hybrid maize whose market has expanded dramatically following the introduction of the fertiliser subsidy programme in the 2005/6 growing season. Their narratives are clearly pitched to further expand the share of hybrid maize seed by projecting it as a potential panacea of the chronic hunger problem in Malawi. The donors are somewhat indifferent between OPV and hybrid maize seed as long as the procurement of the maize seed through the market for the subsidy programme is guaranteed. They are obsessed with the goal of promoting the private sector as a leading engine for rapid agricultural development. However, donors are strategically allied with the multinational seed companies through their support of the seed component of the subsidy programme. They often turn to the multinational seed companies as maize seed suppliers since they strongly believe that enlisting multinational companies would have substantial multiplier effects on private sector development through the agro-dealer network (Mangisoni 2007; Odame 2010).

Most NGOs promote either local or OPV maize seed, contending that the hybrid maize seed system is unsustainable for the typical Malawian smallholder farmer. The argument is that promotion of a hybrid maize seed system would undermine their goal of poverty reduction since it is a requirement that hybrid maize seeds have to be replaced annually. They cannot be recycled. There is an alliance between NGOs and local seed companies particularly ASSMAG who deal mainly in OPV maize seed. They collectively condemn multinational seed companies as being primarily interested in profit maximisation and not in the long-term welfare of the farmers. NGOs that promote local or OPV maize seed are funded mostly

by the EU which is a major funder for ASSMAG. The EU was instrumental in advocating for the switch from hybrid maize in SP to OPV maize in TIP as the basis for ensuring sustainability. Some actors, for instance, breeders argue that most NGOs favour either local or OPCV maize seeds because they offer opportunities for corruption. Hybrid maize cannot be recycled whereas local or OPV maize can be recycled. This makes it easier for the NGO officials to extend to farmers OPV maize seed of fourth or even fifth generation.

Government has silently backtracked on its commitment to promote the use of improved maize seeds in favour of the hybrid maize seed system. Farmers appear to express preference for hybrid maize but widespread adoption is constrained by poverty. Food security remains the main electoral battleground to the extent that politicians are keen on achieving food security at all costs. Hybrid maize appears to have done magic for the politicians hence it has become a favoured maize seed system. The long and short of it is that politicians want votes and desire to be food secure at all times. The coincidence of interests between politicians and farmers, even though for different reasons, has greatly contributed to the popularity of the hybrid maize seed system. Nonetheless the nostalgia for a local maize seed system as well as alternative cereal seed system still exists. These are desired for cultural aspirations, notably, beer. These seed systems are almost on the verge of extinction, because the multinational seed companies, which control 90 percent of the seed market, consider them commercially non-viable.

3.3.2. GMO Maize: Saviour or Slave?

The liberalisation of the seed industry has also opened up space for debate about GMO products with particular reference to maize which is the mainstay of the country's agro-based economic system. The debate has flourished following Malawi's development of a Biosafety legislative framework in 2002. The legislative framework is complete following the adoption of the Biosafety policy and regulations in 2007. The legislative framework is, however, ambivalent about whether the country is a GMO country or not.

The major protagonists in this debate include the multinational seed companies, local seed companies, NGO and government officials particularly breeders. For the multinational seed companies, 'the introduction of GMO maize would be a lasting solution to the chronic hunger problems that the country grapples with'¹⁴³. This is because GMO maize is perceived as high yielding, disease resistant and environmental friendly since 'it minimises the use of pesticides that have greatly contributed to the rampant environmental degradation'¹⁴⁴. The high yielding potential for GMO maize would not only combat the problem of food insecurity but also lead to poverty reduction on a sustainable basis. GMO maize is projected as 'a key to a possible revolution in the food security and prosperity of the farmers'¹⁴⁵. However, while there may, indeed, be advantages of the GMO maize to farmers, seed companies also have their own goals that they would want to achieve. The introduction of GMO

maize would be in tune with their overall business strategies since elsewhere 'apart from Malawi we deal in GMO maize'¹⁴⁶. GMO maize would also enhance the profitability of seed companies since unlike ordinary hybrid maize it is totally impossible to recycle GMO maize. Farmers would have to replace the seeds on annual basis.

Most NGOs and local seed companies are fiercely opposed to the introduction of GMO maize in the country. They argue that the virtues of GMO maize as a potential trigger of a sustainable green revolution are over exaggerated. They are described as 'merely a facade to dupe the ordinary Malawian farmer since the management regime associated with GMO maize will simply make the farmer a prisoner of the multinational seed companies'¹⁴⁷. NGOs and local seed companies portray the Malawian farmer as too poor to afford GMO seed on an annual basis, especially in the absence of any input support programme. The multinational seed companies are condemned as prioritising their concern for profit at the expense of the welfare of the poor farmers. These NGOs and local seed companies project themselves as being primarily concerned with the welfare of the farmers by promoting either local or OPV maize seeds. Equally, however, they are using this debate to safeguard their share of the seed market since they deal primarily in OPV maize.

Government officials within the scientific community are divided. Some favour the introduction of GMO maize projecting it as a saviour due to its high yielding potential in which case it would be a lasting solution to the problem of chronic hunger in the country. Those opposed to the introduction of GMO maize are described as 'lacking good will for the country'¹⁴⁸. The fears expressed such as health risks and terminator genes which would obliterate the local seed system are stylised as 'fear of unknown'. The argument is that what Malawi needs is a critical mass of personnel able to handle the cultivation of GMO crops. The Pro-GMO scientists are keen to acquire expertise that would enable to compete at international levels. Regardless of the merits and demerits of the debate, each of these actors have their own interests they would want to promote either directly or indirectly which in turn is shaping the trajectory of the seed industry in the country.

3.3.3. Approaches to Delivery: Market or State?

The modalities of delivering inputs to farmers under the AISP are a subject of on-going debate. During the 2005/6 growing season when the government implemented AISP without any donor support, both fertilisers and maize seed were distributed to farmers by two state parastatals: ADMARC and SFFRFM (Chinsinga 2007; Dorward and Chirwa 2009). Table 2 shows that the private sector has been consistently involved in the delivery of seed since the 2007/8 growing season and was involved in the distribution of fertilisers in the 2006/7 and 2007/8 growing seasons. The distribution of fertiliser is restricted to ADMARC and SFFRFM in the 2008/9 growing season.

Through various studies undertaken to evaluate the economic efficacy of the maiden AISP, donors insisted on the involvement of the private sector in the

distribution of maize and fertiliser as a precondition for extending support to the programme. The private sector has consistently been involved in the procurement of fertilisers imports for AISP through a competitive tendering process but donors 'wanted greater involvement of the private sector in both the procurement and the distribution of subsidised fertiliser and other farm inputs on equal terms with ADMARC and SFFRFM' (Chinsinga 2007: 26). Donors were concerned that the exclusion of the private sector in the fertiliser subsidy programme would slow down, if not reverse gains from economic liberalisation vital to the development of a private sector led agricultural growth and recovery. This was inevitable particularly in the fertiliser sector 'since effective demand for fertiliser is estimated at between 300 and 350 thousand metric tonnes yet the subsidy programme provides more than half of this amount'¹⁴⁹. According to Dorward et al. (2007), about 60-70 percent of the retail outlets closed as a result of reduced retail sales during the 2005/6 growing season. The share of private sector fertiliser sales tumbled from 87 percent in the 2004/5 growing season to 41 percent during the 2005/6 season.

The main thrust of the donors' argument was that involvement of the private sector would facilitate the diversification of the AISP beyond tobacco and maize, which in turn, would stimulate progressive and sustainable private sector growth and development. The use of vouchers would ensure that 'non-commercial seed and fertiliser distribution are channelled to the development of the commercial seed and fertiliser marketing distribution sectors' (Mangisoni 2007: 1). Unlike direct input distribution, vouchers allow the private sector to expand their retail distribution networks countrywide into rural areas. The use of vouchers qualifies AISP as a smart subsidy since conventional subsidies are known to distort the market and crowd out private sector development (AGRA 2009). The distortionary effects of vouchers are limited because they promote market competition among sellers which greatly motivate them to improve their services. The use of vouchers serves as an incentive for seed and fertiliser dealers to establish outlets in remote areas but perhaps more critically 'help government achieve social objectives through commercial means'¹⁵⁰. The use of vouchers in seed distribution is viewed positively even in government circles. It was, for instance, pointed out that through the voucher system, 'AISP is moving improved seed to more than 1.7 million farming families in a manner that is more efficient than the government system'¹⁵¹.

Multinational seed companies are considered by most actors as the major beneficiaries of the subsidy programme because they have a guaranteed market. Since the uptake of improved seed is constrained by lack of money among smallholder farmers, 'the subsidy ensures that farmers that would have otherwise used uncertified seed are able to access improved seed'¹⁵². Seed companies do have a somewhat guaranteed market because seed procurement for AISP is not done through a competitive tendering process. Seed companies engage and negotiate with government on seed supply

for AISP collectively through STAM. The seed tender is given to STAM on the basis of the indicative requirements for the AISP. Since government buys a substantial amount of seed, they negotiate for a lower than market price per 5kg pack. For the 2009/10 growing season, for instance, the market value for the voucher was MK1,900 but government offered seed companies MK1,500 per 5kg pack. Local seed companies are not able to fully take advantage of the market guaranteed by the subsidy programme because they rely almost entirely on the multinational seed companies to process their seed and they often let the local seed companies down.

In turn, seed companies enter into contracts with agro-dealers to distribute the seed to farmers across the country. The expectation is that the seed companies would come up with differentiated top-ups when selling the seed to farmers in which case seed companies would compete on the basis of farmers' preferences¹⁵³. In practice, however, there is no price differentiation among the seed companies when they offer the seed on the market. Seed companies do not, however, see themselves as major beneficiaries of the subsidy programme. The rather depressed government prices forces them to 'restrict the supply of seed for the subsidy market, prioritizing the non-subsidy markets particularly export ones'¹⁵⁴. The benefits of the subsidy programme are further offset by huge transaction costs incurred through voucher redemption. The process is regarded as extremely tedious 'as we have to serialize all voucher before we can get paid; we have no choice but to employ additional staff to undertake this exercise'¹⁵⁵.

There is, however, evidence to show that seed sales have dramatically improved because of the fertiliser subsidy programme. For the seed companies, this is a cash cow since effective demand for improved seed is as low as 4,500 metric tonnes out of the possible 30,000 metric tonnes. According to GRAIN (2010), the subsidy programme has expanded the demand for improved seed by 5,500 metric tonnes. On average, each seed has expanded seed sales by 40 percent while the share of the local seed companies has essentially remained static. The local seed companies have not fully exploited the commercial benefits arising out of the subsidy programme because of their reliance on the multinational seed companies to process their seeds. However, among the multinational seed companies, Monsanto is the major beneficiary since it controls more than 50 percent of the hybrid maize market in the country.

The involvement of the private sector in the distribution of subsidy inputs is regarded as a positive development by all actors including farmers. The involvement of the private sector is justified on the account that government cannot implement a nationwide programme of this magnitude on its own both efficiently and effectively. Farmers' justification for the involvement of the private sector mainly borders on the nostalgia about how an extensive ADMARC network facilitated their access to quality inputs (Nthara 2002; Chinsinga 2004). In addition, farmers were wary about excessive corruption at ADMARC markets as outlets for subsidised fertiliser. The recurrent concerns were that ADMARC markets are not

only sparsely located but also that they are captured by vendors during the subsidy season. In arguing for the involvement of the private sector, women FGD participants observed that 'at ADMARC it is only those known to officials who manage to buy inputs freely while at agro-dealers one is assured of being served in a dignified manner without any tension, whatsoever'¹⁵⁶. Similar sentiments were expressed in a men's FGD. They observed that 'if it were not for the agro-dealers, the subsidy programme would have been a total mess; at ADMARC it is only vendors who buy and there is often no fertiliser especially if you are not prepared to pay an extra MK200 or more'¹⁵⁷.

It was emphasized across the FGDs that the advantage of agro-dealers is that they are 'near our villages and they are a good alternative when we fail to buy from ADMARC at least when they are involved in the distribution of fertiliser'¹⁵⁸. They argued, however, that for the benefits of private sector's involvement to be fully realised, the regulatory framework has to be tightened. This was deemed essential because traders are primarily motivated to make profit to the extent that without any sound and enforceable regulatory framework farmers would end up as victims. There is thus a need to keep the exploitative tendencies of unscrupulous traders in constant check by having in place a favourable but enforceable regulatory framework.

In this debate about the modalities of input delivery to farmers, the main actors include government, donors, seed companies and farmers. While there is no competitive tendering in the provision of seeds to the subsidy programme, local companies are unable to take advantage of this because they do not have the capacity to process seeds on their own. They depend on multinational seed companies against whom they compete. They do not only compete on the basis of market share but also in terms of the products they offer to farmers. The local seed companies deal almost exclusively in OPV maize seed unlike the multinational companies which specialise in hybrids. The seed companies are heavily supportive of the subsidy programme because it guarantees them a market for products. Each company supplies the programme on the basis of its capacity. The subsidy programme offers the seed companies an opportunity to extend the appeal of their products to farmers who would not have otherwise been in a position to purchase their products due to limited effective demand'. For seed companies, therefore, the subsidy programme is a cash cow.

Donors promote market driven provision of farm inputs. They have supported the seed component of the subsidy programme only on condition that the seeds will be distributed to farmers on a market basis. While the modalities of the involvement of the seed companies in the subsidy programme is not an issue of great concern to the donors the methods in which the seeds are distributed to the farmers is. For donors, the involvement of agro-dealers in the distribution of seed to farmers is a substantial boost to market development (Mangisoni 2007). The government is not very much bothered with the liberalised seed supply to farmers probably because

the seed component is supported by donors. The government has held onto to the distribution of fertiliser through its two parastatals. The private sector is involved in the procurement of fertiliser through a competitive tendering process but is entirely excluded from distribution. This reflects the fact that the distribution of fertiliser provides government officials with significant patronage opportunities since the whole question of food security lies at the heart of the country's political economy. Farmers express preference for private sector supplies for both seeds and fertilisers because of rampant corruption associated with the state parastatals designated as official outlets for fertilisers. These competing interests have shaped the subsidy programme but largely dependent on the relative power and influence of these actors.

4. The Politics of Input Subsidies in Malawi

4.1. Maize Politics = Electoral Politics

The political economy of the cereal seed system in Malawi has been greatly shaped by electoral politics through the input support programmes that have been implemented since the late 1990s. This is inevitable since food security remains at the centre of the country's political economy. For instance, the government readily embraced the SP in 1998 because it provided the governing party with an opportunity to shore up its legitimacy in the lead up to the June 1999 general elections (Potter 2005). The country was reeling from the devastating effects of the 1997/8 hunger crisis. Given the centrality of maize in the country's political economy, 'the government was very keen to be seen to have done something about the food security or rather maize crisis'¹⁵⁹.

The impact of electoral politics is, however, quite pronounced in AISP. The reintroduction of fertiliser subsidy as a strategy for addressing the question of chronic and pervasive hunger featured prominently in the campaign for the 2004 general elections. In fact, the distinctive feature of the 2004 electoral campaign 'was that it reflected a strong national consensus for fertiliser subsidy, as all leading candidates promised some kind of support to the smallholder agricultural sector' (Chinsinga 2007: 4). The differences were only in terms of the magnitude of the subsidy and the indicative range of crops that would benefit from the subsidy programme. The ruling United Democratic Front (UDF) advocated for a universal fertiliser subsidy for maize only while the opposition block led by the Malawi Congress Party (MCP) advocated for a universal subsidy programme targeting maize and tobacco farmers. These differences reflected agricultural interests of geographical enclaves considered as their strongholds.

UDF won the polls but did not implement a fertiliser subsidy programme in the 2004/5 growing season as implied in the electoral campaign. Instead, it implemented the TIP. The UDF government was somewhat reluctant to implement the fertiliser subsidy programme as implied in the electoral campaign because it did not want to jeopardise its relations with donors. The priority of the government was to get an agreement with the

International Monetary Fund (IMF) so as to kick-start economic recovery' which could have been jeopardised if the government proceeded to implement the universal fertiliser subsidy programme which many donors did not approve¹⁶⁰. The political events in early 2005 led to the president breaking away from UDF and forming his own party-the Democratic Progressive Party (DPP)-which did not have any parliamentary representation. The UDF was invariably pushed into opposition which created an opposition dominated legislature (Chinsinga 2008).

The complexion of the legislature made it extremely difficult for the government to resist calls to implement a fertiliser subsidy programme. The government's initial proposal was to target the subsidy to maize only but taking advantage of their numbers the opposition managed to force the government to extend the subsidy to tobacco farmers. This was in the interest of the MCP since its perceived stronghold is a major tobacco growing area. The government bowed down to the opposition's demand because it threatened to use its dominance to frustrate government's legislative agenda including the budget. The subsidy programme was extended to legume seeds in the third year of its implementation at the insistence of donors as a means of facilitating crop diversification (Dorward and Chirwa 2009).

Evaluations have shown that the government exploited the programme to shore up its popularity and legitimacy. AISP has become the centrepiece of its agricultural policy whose main goal is to achieve food security at national and household levels (GoM 2006; GoM 2008). The government further exploited AISP through populist pricing of fertilisers. Tobacco and maize fertiliser prices for 50kg bag started off at MK1,450 and MK950 respectively. They were harmonised at MK900 in the subsequent season; reduced to MK800 before being slashed to MK500 in the lead up to the May 2009 general elections. In the third year, the subsidy programme was extended to cotton farmers and there were indications that it would be extended to coffee and tea growers during the 2009/10 season. The cotton, tea and coffee growing areas are widely perceived as strongholds of the governing party.

This has not happened, however. Instead, government has even withdrawn the subsidy from tobacco and cotton farmers during the 2009/10 season. The focus is exclusively on maize and legume seed which is often not readily available to farmers. This could be attributed to the landslide victory of the governing party in the May 2009 polls. From only six seats in the previous parliament, the governing party now controls 114 seats out of the 193 seat legislature. In addition, the majority of the 33 independent legislators are aligned to the governing side. The withdrawal of the subsidy from tobacco farmers is justified as a means of controlling costs for the programme but it could be argued that the government has now considerable room of manoeuvre because of a substantially weakened opposition. Tobacco farmers do not have any voice in the government dominated legislature whose perceived primary base is outside the tobacco growing areas.

4.2. Political Consequences

This paper has demonstrated how competing and sometimes complementary interests in the implementation of the three different versions of the input support programmes has shaped the nature and form of the seed industry in Malawi. The evolution of the seed industry has also been greatly shaped by the liberalisation drive which has created opportunities for some actors while limiting opportunities for other actors at the same time. The implementation of the input support programmes in a post liberalisation context has created a platform for engagement of myriad actors which have included multinational and local seed companies, agro-dealers, NGOs, government agencies, donor agencies, parastatal agencies mainly SFFRM and ADMARC among many others.

The liberalisation of the seed industry has narrowed down the range of crops available to farmers. This is mainly due to the nature of seed companies that have emerged following the liberalisation of the seed industry. The multinational companies, which control about 90 percent of the seed market, deal almost exclusively in hybrid maize seed. Consequently, these multinational seed companies do not deal with the national breeding programme which has the local seed companies as its main client who control only 10 percent of the seed market. The fact that the multinational seed companies do not deal with the national breeding programme has greatly undermined the public sector's capacity for research and innovation in the seed sector. This has, in turn, affected the production of alternative cereals such as millet and sorghum. The farmer is the main loser. Not only are the range of hybrids on offer limited as a result of weak effective demand but also farmers cannot readily access alternative cereal seed systems. The multinational seed companies are interested primarily in enhancing their profit levels through dominance of the seed market by undercutting the potential development of the local seed industry which interacts with the national breeding programme but controls only 10 percent of the seed market.

The implementation experiences of the input programmes have greatly contributed to the creation of a situation in which political and commercial interests are privileged over social, cultural and technical considerations with regard to fixing the problem of food insecurity in Malawi. The transition from SP to TIP was mainly influenced by donor concerns about private sector development, programme efficiency and sustainability. Yet the recommendations about SP were based on a decade long scientific effort (Potter 2005; Mann 2009). The AISP was implemented in total disregard of an MoAFS blueprint about how Malawi, drawing from scientific insights, that powered SP could achieve a sustainable version of a green revolution. The success of AISP has completely closed out space for the MoAFS to flag out their green revolution blueprint (GoM 2005).

The major critique of AISP is that it does not necessarily denote a Green Revolution. It is simply a return to the subsidised surpluses of the early 1980s that existed with widespread malnutrition (Mann 2009). Mann's main argument is that compared to SP, AISP does not in any way

come closer to the World Bank's definition of 'smart subsidy'. Unlike SP, the AISP package is not based on scientifically validated propositions. The AISP simply represents the brute force use of fertiliser and 'not a revolutionary approach that changes input/output ratios [but] just raises inputs' (Mann 2009: 1). Mann further argues that the appearance of surplus is achieved not because basic food needs are met but because the poor cannot afford to buy maize produced by the relatively non-poor who can access inputs. In the final analysis, 'the lack of domestic purchasing power results in the surplus being exported, and this is taken as evidence of effectively tackling famine; this is reflects a serious policy failure' (Mann 2009: 3). It is a serious policy failure because subsidies do not make sense when they support exports.

Furthermore, the switch from SP to TIP marked a turning point in as far as the link between research and agricultural policy is concerned (Blackie and Mann 2005; Smale and Jayne 2003). While the SP package was designed on the basis of 5 year long field experiments, the TIP package was hugely motivated by cost considerations on the part of donors. This ultimately demolished the fruits of a decade's long scientific effort to develop more suitable, less fertilised farming systems. The human resource infrastructure that made the development of the 'Best Bet' technology was effectively dismantled since 'TIP functioned [more] as a relief effort [than an agricultural development programme] since the research input into the package [was] minimal, if any' (Smale and Jayne 2003: 43). The conclusion of these critics is that much of the cumulative learning from years of maize research appears to have been discarded in favour of short-term, crisis motivated solutions (Smale and Jayne 2003; GoM 2005).

The concern of donors with private sector development and the government's preoccupation with the question of food security has created a post liberalisation context in which the seed industry is unable to fully serve the needs of a typical Malawian farmer. The resulting weak regulatory environment has been exploited by several actors to further their own selfish interests. Politicians exploited TIP as a source of patronage through the supply of OPV maize seed to the programme. Substandard seeds were provided as a result of laxity in the seed inspection regime. Seed companies have taken advantage of the rather weak regulatory framework to capture the seed market. This has been propped up the government's desire to find a quick fix to the enduring problem of food insecurity through the promotion of hybrid maize which is the main product for the multinational seed companies. In their quest to facilitate private sector development, donors have turned to the multinational seed companies as the main sources of seed supply through the agro-dealer network. Since donors support the seed component of AISP and are obsessed with the desire to promote market development, the country has increasingly become dependent on the multinational companies for seed supply.

The seed component of AISP has become a cash cow for the seed companies since they do not have to tender for it on a competitive basis. It guarantees them a market

depending on their capacity, although Monsanto is clearly the biggest winner with more than 50 percent of the market share. These developments have invariably fostered a narrow political-industry alliance in which hybrid maize seed is privileged as the appropriate maize seed system to kick-start a potential green revolution in the country. This is a culmination of donors' vision of a robust agricultural sector powered by a vibrant private sector providing sound advice and locally appropriate products through a network of local, independently owned and operated agro-dealers or stockists.

The question of exit strategy from the input support programmes is not entertained at all especially among government officials. The experiences with AISP demonstrate that there is no way out of the subsidy programme because it enjoys popular support in a democratic context. It has become the basis for a social contract between the people and the rulers. There is so to speak a political-economic bind of the subsidy programme since the question of food security is firmly at the centre of the country's electoral politics. There is thus popular consensus about the centrality of subsidies in combating the problem of pervasive and chronic hunger. This is difficult for political leaders to ignore in a democratic context especially since the subsidy programme has become the single most important vote winning issue. The differences among political parties are merely in terms of the nature, magnitude and target of the subsidies. Although there have been concerns about the increasing cost of the subsidy programme exacerbated by the sharp rise in the prices of fertiliser, the question of exit is hardly contemplated (Chirwa and Dorward 2010). In short, Malawi is for the time being therefore locked up in subsidies without the prospect of exit in the short to medium term.

4.3. Winners and Losers

There have been winners and losers from the implementation of the AISP at two levels. Beneficiary farmers have gained in terms of improved yields due to access to fertiliser and improved seed which they can hardly manage at the market rate. There is a huge price differential between subsidised and unsubsidised fertiliser. Beneficiaries of AISP pay MK500 for a 50kg bag of fertiliser when the same bag can be bought at MK5000 on the market. The other major groups of beneficiaries are those that have emerged as agro-dealers and contract seed growers. These are, however, only a small portion of the farming community. They do not necessarily represent the typical Malawian farmer. They are mostly male and fairly richer members of the farming community. The majority of the farmers are, however, losers because the AISP has either been captured by local elites or exploited as a source of political patronage.

The identification of AISP beneficiaries is contentious for two main reasons. First, poverty is widespread in rural Malawi and exacerbated by the cumulative adverse effects of SAPs and recurrent incidents of droughts and flash floods (Devereux 2002; Chinsinga 2004). Social stratifications in rural Malawi have more or less disappeared making it extremely difficult to identify AISP

beneficiaries without any contestations. Second, everybody wants to be a beneficiary of the fertiliser subsidy programme because of the huge price differentials between subsidised and unsubsidised fertiliser. This is inevitable given the breadth and depth of rural poverty in the country. This tends to put enormous pressure on the village heads because everybody wants to benefit. This is regardless of the fact that village heads 'are no longer at the centre of the beneficiary identification process but then they have a moral obligation to ensure fairness and equity in the administration of any form of external support'¹⁶¹.

In the view of local communities, the repercussions of the beneficiary identification challenge have been quite substantial. It has been a source of tension between villagers and their leaders. Regardless of the procedures of identifying beneficiaries 'village heads in most villages have a final say in terms of who benefits and does not'¹⁶². In many cases, this has forced village heads 'to resort to redistributing the inputs to all households once the chosen beneficiaries have taken delivery of the inputs from the distribution centres'¹⁶³. This means that the beneficiaries on the official list are simply used as conduits for the inputs to the villages where they are then subjected to 'a morally justifiable redistribution exercise'¹⁶⁴. Consequently, AISP has intensified the breaking up of villages which, of course, started with the transformation of SP into TIP. This practice is on the increase because communities strongly believe that sub-division of their villages would enhance prospects of them being beneficiaries of AISP if some of them can constitute a village in their own right. For instance, participants in several FGDs at Kadammanja observed 'we used to be one village but now we are three villages; a fourth one is about to be established just because we want to benefit from AISP'.

Farmers consider themselves as great losers from the AISP. They argue that 'the programme is justified in our name but we are the biggest losers'¹⁶⁵. For instance, AISP provides beneficiaries with three coupons for fertiliser, maize seed and a flexible coupon 'but seeds like groundnuts, millet, sorghum, peas etc are never made available'¹⁶⁶. The general feeling is that farmers feel cheated since 'the programme is justified as ours when it is, in fact, for chiefs, politicians, extension workers, vendors and ADMARC officials'¹⁶⁷. Extension workers are considered as beneficiaries because there is a strong feeling that they connive with chiefs to defraud the AISP. In almost all FGDs, it was observed that extension workers are often found with subsidy inputs. Their trick is 'to work with village heads to convince us all that some beneficiaries were cut off from the list by computers and then share these inputs with chiefs'¹⁶⁸. ADMARC officials work with vendors 'to make a killing out of AISP'¹⁶⁹. The argument is that vendors are able to get coupons whether by hook or crook and 'when inputs are available at ADMARC depots vendors are prioritized at the expense of us deserving beneficiaries'¹⁷⁰. The vendors then resale the subsidy fertiliser at MK3,500. The villagers are sometimes forced to buy this fertiliser 'especially when there are prolonged breaks in the supply chain to ADMARC

depots¹⁷¹. The monitoring study for 2008/9 AISP established that some depots could be without fertiliser for more than seven weeks after the initial supplies run out (Chinsinga 2009). Politicians are beneficiaries of AISP because they often use it as a political bait during electoral campaigns. It was argued that 'politicians get our votes by cheating us that they will ensure that we all get coupons but they change tune when the time comes'¹⁷². The farmers' argument is that 'politicians are thus often convincing but they hardly live up to their promises; what matters to them is that they get elected'. The farmers' analysis clearly demonstrates that different stakeholders have different interests which play out in the implementation of AISP. Farmers benefit but the magnitude of their benefit is under cut by the rent seeking tendencies of various stakeholders.

5. Conclusions

The single most significant impact of the input support programmes is that it has reinforced the dominance of maize in the country's cereal seed system. This is the case because maize has become an important political crop in the country. The food security situation of the whole country is entirely dependent on having adequate maize and the legitimacy of any government is dependent on voters having access to this maize either at affordable prices or being able to produce enough of it with some kind of support from the government. This has invariably created a situation in which the hybrid maize seed system is privileged at the expense of other alternative maize seed systems including such cereals as millet and sorghum. NGOs are, to a very great extent, a lone voice in championing alternative maize seed systems, and the supportive infrastructure of the hybrid maize seed system benefits disproportionately elites at the expense of the farmers in whose name the various reforms are justified.

Some of the major lessons from this study include the following:

- Politics matter in the initiation, uptake and implementation of policy interventions. In other words, good technical recommendations do not make their way into policy or implementation unless there is real support from the politically powerful. This is apparent in the historical experiences about technical advancements pertaining to maize seed technology. As long as smallholder farmers remained disorganized and unable to exert influence, grain texture remained at the periphery of the national breeding programmes. Donors had to intercede on behalf of the politically disorganized smallholder farmers. SP was readily embraced by government because of a strong political drive to find solutions to the rapidly deteriorating food security situation and declining soil fertility. The implementation of the AISP and the subsequent dominance of hybrid maize are as a result of political manoeuvring to succeed in fixing the problem of chronic food insecurity which is at the centre of the country's political economy. The overwhelming political support of AISP completely overshadowed MoAFS's road map which

outlined how Malawi could attain a sustainable green revolution. It is therefore important to fully understand the political economy context as well as implications of policy processes.

- National R&D and marketing institutions need to be revitalised. The role of national institutions is quite critical in developing viable seed systems that would effectively and efficiently meet the needs of farmers. Public sector agricultural research is in sharp decline which has greatly contributed to the near collapse of alternative cereal seed systems. Since multinational seed companies focus almost exclusively on maize, the production of foundation seed for alternative seed systems such as millet and sorghum rests squarely with the national research institutions. This is further compounded by the fact that local seed companies are extremely weak. They cannot effectively compete with the multinational seed companies. However, evidence seems to suggest that no region of the world has developed a strong and vibrant seed system without strong domestic seed companies (AGRA 2009; GRAIN 2010). There is also urgent need for the development of a vocal local constituency that can stake claims on a sustained basis on public resources in support of agricultural research, marketing institutions, and other kinds of growth promoting public goods.
- Science on its own does not really matter. Policy change is not only about gathering new evidence but about creating new alliances, networks and political configurations. SP was backed up by scientific propositions informed by several years of tested farm level trials. It was, however, abandoned in preference for TIP dictated by donors who were providing financial assistance towards implementation. The preference for TIP was not based on considered appraisal of the evidence gathered through comprehensive evaluations, but simply reflected headquarters' led ideologies of the agencies, within which there was little consideration of special characteristics of Malawi. Technocrats could not flag their road map for a Malawian version of green revolution the moment politicians put their weight behind AISP. In the road map, there was a hint to return to the 'Best Bet' technologies as a means of kick-starting agricultural growth and development.
- Incentives and sanctions are needed to ensure that key actors work for the common good. Powerful actors are primarily influenced by self-interest even though these interests are often articulated as being 'in the interest of the poor farmer'. The primary consideration of most of these actors is to maximize benefits from a policy situation and shift the burden of adjustment elsewhere as far as it is practically feasible.

This study has revealed how gaining access to high quality and improved seed at affordable prices is a problem for many smallholder farmers, especially in a weak policy environment. It has also shown how multinationals have come to dominate the domestic commercial seed sector, propped up by the convergence of donor and government interests with those of seed companies, albeit for different goals. Malawi's experience illustrates that foreign direct investments, through ownership of

production and sales outlets in the seed industry can have impacts on poor and smallholder farmers in ways that they are powerless to deal with. This becomes heavily entrenched if the local elites capture part of the benefits especially when these serve the political interests of the governing elite as it has happened in Malawi. The input programmes, supported by donors in their quest to kick-start private sector development through multinational seed companies, have been exploited as a source of political patronage at different levels. The study thus demonstrates that business strategies of seed companies affect the terms of access to seeds, the affordability of seeds, the diversity of genetic resources on farmer fields, the income and livelihood of resource poor farmers, relationships with agricultural research organisations and ultimately the overall food security.

These developments call for concerted efforts to fine tune the country's seed industry for it to serve the interests of the ordinary Malawian farmer better. The major source of the challenges facing the seed industry is the weak policy environment following liberalisation, which various actors have, in different ways, exploited to advance their own selfish interests. There is thus urgent need to improve the efficiency and implementation of the regulatory frameworks for the industry. Regulations exist but they are not enforced fully and consistently. This can, however, be done if the relevant public sector agencies are strengthened. Both the Seed Services Unit and the national breeding programme are in sharp decline. Enforcement of the regulatory framework for the seed industry is haphazard, and farmers have access to a limited range of seed products because the country is entirely dependent on the multinational companies for seed supply. Consequently, the multinational seed companies dictate the nature, shape and form of the seed industry. Local seed companies exist but they only control 10 percent of the market share. It is for this reason that there is urgent need to stimulate local seed companies which should offer competition to the multinationals in order to shape the seed industry in a manner that would better serve the interests of the small and rather impoverished Malawian farmer. Emerging economies such as China, Brazil and India have been able to benefit from liberalisation because they had strong local seed companies. Multinational seed companies ply their trade in these economies mostly through joint ventures with successful local companies in which case the products on offer are designed with the needs of a local farmer in mind.

The study of the three input support programmes, namely: Starter Pack (SP), Targeted Input Programme (TIP) and Agricultural Input Subsidy Programme (AISP) has demonstrated that policy ideas originate from different sources but what ultimately gets implemented depends on configurations of the domestic political economy context at a particular point in time and the interests of the powerful actors. SP was entirely a technical initiative that was readily embraced by government because it was desperately looking for solutions to the devastating problem of hunger facing the country. Most donors were hesitant about it but had to go along with

it because it was being implemented around the elections period. The same can be said about TIP and AISP. Donors pushed for the scaled down of SP to TIP not on the basis of technical considerations but rather on the ideological basis of promoting cost effectiveness and private sector development. The initial AISP was implemented entirely by the government without any donor support. In the subsequent years, donors have offered support to the programme but only on condition that the private sector is involved in the procurement and distribution of the inputs. The donors are driven primarily by the belief that the private sector would foster sustainable agricultural development.

These three input support programmes further demonstrate that ideas about good policy change and evolve not necessarily because of the persuasiveness of technical evidence but rather on the basis of changing configuration of interests of the dominant coalitions. These interests are often couched in rather simplistic narratives that appear to suggest problems, solutions and consequences if the problems are not addressed as suggested. The SP was a consequence of a coalition between local and international scientific technocrats and government officials. The narrative about SP was that it was an input package with a transformative potential on the country's agricultural system which would in turn be the basis for a sustainable green revolution. The TIP was pushed through the coalition of donors who strongly believed that SP was not only cost inefficient but also detrimental to the progressive development of the private sector. It was embraced by the government because it offered the opportunity to solve the problem of food insecurity as well as opportunities for patronage through OPV maize seed supply which was touted as a means of ensuring the sustainability of the programme. The AISP was entirely an initiative driven by politicians motivated by electoral politics. Its subsequent evolution, however, has been shaped by the ideological views of donors who have argued that the AISP should be seized as an opportunity to kick-start the development of the private sector in the agricultural sector. In the end, this has created coalitions between the state, donors and seed companies on one hand and local seed companies and NGOs on the other with farmers caught in between these two coalitions. The state, donors and seed companies' coalition is, however, dominant. It is shaping the progressive development of the seed industry that is currently characterised by an extremely weak policy environment in a post liberalisation context to the detriment of the rural Malawian farmer.

The study has demonstrated that a wide range of actors are able to proffer voices and views about the nature and form of policies but often the voices and views of the dominant actors triumph in shaping policy directions regardless of their technical plausibility. For instance, AISP was implemented without regard to the green revolution blueprint that was being developed by the Ministry of Agriculture and Food Security with particular focus on how to achieve food security for the country on a long-term basis. Opportunities for new ideas, actors and networks exist since the context is generally

permissive. However, the main challenge is how to ensure that these new ideas, actors and networks have any significant purchase on the nature and form of the policy options in the seed industry. It appears that the only way in which alternative ideas, actors and networks can challenge the existing ones is if a strong locally based seed industry can develop in a context of a vibrant national breeding programme backed up a public sector that is able to enforce the regulatory framework both efficiently and effectively.

End Notes

- ¹ I would like to extend my gratitude to Michael Chasukwa and Gift Sambo who served as my research assistants on this project for a job well done. All results of interpretation remain my sole responsibility.
- ² Interview with a former breeder in MoAFS
- ³ Interview with a Food and Agriculture Organization (FAO) official
- ⁴ Interview with a University of Malawi based breeder
- ⁵ Interview with a former breeder in MoAFS
- ⁶ Interview with a University of Malawi based breeder
- ⁷ Interview with a breeder in MoAFS
- ⁸ Interview with a seed company official
- ⁹ Interview with ASSMAG president
- ¹⁰ Ibid.
- ¹¹ Interview with a STAM official
- ¹² Interview with a seed company official
- ¹³ Interview with an agro-dealer in Lilongwe
- ¹⁴ Interview with a Plan International official who also doubles as a seed multiplier
- ¹⁵ Ibid.
- ¹⁶ Interview with a breeder in MoAFS
- ¹⁷ Interview with a FAO official and a former breeder in MoAFS
- ¹⁸ Interview with a breeder in MoAFS
- ¹⁹ Interview with a Seed Traders Association of Malawi (STAM) official
- ²⁰ Interview with a seed company official
- ²¹ Interview with a breeder in MoAFS
- ²² Interview with a University of Mzuzu based researcher
- ²³ Interview with a former breeder in MoAFS
- ²⁴ Ibid.
- ²⁵ Interview with a senior official in MoAFS
- ²⁶ Interview with a senior scientist in MoAFS
- ²⁷ Ibid.
- ²⁸ The amount of project based funding is difficult to estimate accurately since it is highly fragmented. Most of these projects are carried out on an individual and not institutional basis. CIMMYT is a major player in linking individual researchers in the national breeding programme to various funding bodies such as Rockefeller Foundation, Bill and Mellinda Gates Foundation, Alliance for Green Revolution in Africa (AGRA), Southern Africa Development Community, Food and Agriculture Organization etc.
- ²⁹ Interview with a breeder in MoAFS
- ³⁰ Interview with a FAO official
- ³¹ Interview with a seed company official
- ³² Interview with a breeder in MoAFS
- ³³ Ibid.
- ³⁴ Interview with a former breeder in MoAFS
- ³⁵ Ibid.
- ³⁶ Interview with a seed company official
- ³⁷ Interview with a breeder in MoAFS
- ³⁸ Ibid
- ³⁹ Interview with a former breeder in MoAFS
- ⁴⁰ Interview with a breeder in MoAFS
- ⁴¹ Interview with a FAO official
- ⁴² Interview with an Action Aid official
- ⁴³ Interview with a seed company official
- ⁴⁴ Interview with ASSMAG president
- ⁴⁵ Ibid.
- ⁴⁶ Ibid.
- ⁴⁷ Ibid.
- ⁴⁸ Interview with an ASSMAG official
- ⁴⁹ Ibid.
- ⁵⁰ Ibid.
- ⁵¹ Interview with a seed company official
- ⁵² Ibid.
- ⁵³ Ibid.
- ⁵⁴ Ibid
- ⁵⁵ Ibid.
- ⁵⁶ Interview with a University of Malawi based breeder
- ⁵⁷ Interview with a breeder in MoAFS
- ⁵⁸ Interview with a seed company official
- ⁵⁹ Ibid.
- ⁶⁰ Interview with a University of Malawi based breeder
- ⁶¹ Ibid.
- ⁶² Interview with a breeder in MoAFS
- ⁶³ Ibid
- ⁶⁴ Interview with a breeder in MoAFS
- ⁶⁵ Ibid.
- ⁶⁶ Interview with a breeder in MoAFS
- ⁶⁷ Ibid.
- ⁶⁸ Interview with a seed company official
- ⁶⁹ Interview with a University of Mzuzu based breeder
- ⁷⁰ Ibid.
- ⁷¹ Ibid.
- ⁷² Interview with a seed company official
- ⁷³ Ibid.
- ⁷⁴ Interview with a University of Malawi based breeder
- ⁷⁵ Ibid
- ⁷⁶ Interview with a University of Malawi based breeder
- ⁷⁷ Interview with a breeder in MoAFS
- ⁷⁸ Ibid.
- ⁷⁹ Interview with a seed company official
- ⁸⁰ Interview with a former breeder
- ⁸¹ Interview with a breeder in MoAFS
- ⁸² Interview with a University of Mzuzu based breeder
- ⁸³ Interview with a seed company official
- ⁸⁴ Interview with an MoAFS official
- ⁸⁵ Interview with a former member of the Maize Productivity Task Force (MPTF)
- ⁸⁶ Ibid.
- ⁸⁷ Ibid.
- ⁸⁸ Interview with a former breeder who was also a member of the MPTF
- ⁸⁹ Ibid.
- ⁹⁰ Interview with a senior MoAFS official
- ⁹¹ Interview with a CISANET official
- ⁹² Interview with a DFID official
- ⁹³ Ibid.
- ⁹⁴ Interview with a senior MoAFS official
- ⁹⁵ Interview with a seed company official
- ⁹⁶ Ibid.
- ⁹⁷ Ibid.
- ⁹⁸ Ibid
- ⁹⁹ Interview with a DFID official
- ¹⁰⁰ Interview with ASSMAG president
- ¹⁰¹ Interview with a STAM official
- ¹⁰² Interview with a DFID official
- ¹⁰³ Interview with an Action Aid Official
- ¹⁰⁴ Ibid.
- ¹⁰⁵ Interview with a Fair Malawi official
- ¹⁰⁶ Interview with a STAM official
- ¹⁰⁷ Interview with a CADECOM official in Lilongwe
- ¹⁰⁸ Interview with a CADECOM official in Dedza
- ¹⁰⁹ Interview with a Fair Malawi official
- ¹¹⁰ Interview with a CADECOM official in Dedza
- ¹¹¹ Interview with a Plan International official

- ¹¹² Ibid.
- ¹¹³ Ibid.
- ¹¹⁴ Interview with ASSMAG president
- ¹¹⁵ Ibid.
- ¹¹⁶ Interview with a Concern Universal official
- ¹¹⁷ Ibid.
- ¹¹⁸ Interview with a CISANET official
- ¹¹⁹ Interview with a Plan International official
- ¹²⁰ Ibid.
- ¹²¹ Ibid.
- ¹²² Interview with an MoAFS official in Dedza district
- ¹²³ Interview with a FAO official and a former breeder in MoAFS
- ¹²⁴ Interview with a CADECOM official in Dedza
- ¹²⁵ Interview with a CADECOM official in Lilongwe
- ¹²⁶ Interview with an ASSMAG official
- ¹²⁷ Interview with an MoAFS official in Dedza
- ¹²⁸ Interview with a CADECOM official in Dedza
- ¹²⁹ Interview with an MoAFS extension officer in Dedza
- ¹³⁰ Interview with a breeder in MoAFS
- ¹³¹ Interview with a former breeder in MoAFS
- ¹³² Men FGD in Kadammanja village
- ¹³³ Women FGD in Mkungumbe village
- ¹³⁴ Youth FGD in Mkungumbe village
- ¹³⁵ Mixed FGD in Mkungumbe village
- ¹³⁶ Women FGD in Kadammanja village
- ¹³⁷ Ibid.
- ¹³⁸ Youth FGD in Kadammanja village
- ¹³⁹ Men FGD in Mkungumbe village
- ¹⁴⁰ Women FGD in Kadammanja village
- ¹⁴¹ Ibid.
- ¹⁴² Youth FGD
- ¹⁴³ Interview with a seed company official
- ¹⁴⁴ Interview with a STAM official
- ¹⁴⁵ Interview with a seed company official
- ¹⁴⁶ Interview with a seed company official
- ¹⁴⁷ Interview with a NGO official
- ¹⁴⁸ Interview with a government based breeder
- ¹⁴⁹ Interview with the Fertiliser Association of Malawi official
- ¹⁵⁰ Interview with a DFID official
- ¹⁵¹ Interview with a senior MoAFS official
- ¹⁵² Interview with a donor agency official
- ¹⁵³ Ibid.
- ¹⁵⁴ Interview with a seed company official
- ¹⁵⁵ Ibid
- ¹⁵⁶ Women FGD at Kadammanja village
- ¹⁵⁷ Men FGD at Mkungumbe village
- ¹⁵⁸ Youth FGD at Mkungumbe village
- ¹⁵⁹ Interview with a former MPTF member
- ¹⁶⁰ Interview with a donor agency official
- ¹⁶¹ Ibid.
- ¹⁶² Women FGD at Mkungumbe village
- ¹⁶³ Ibid.
- ¹⁶⁴ Ibid.
- ¹⁶⁵ Ibid.
- ¹⁶⁶ Female FGD at Kadammanja village
- ¹⁶⁷ Mixed FGD at Kadammanja village
- ¹⁶⁸ Youth FGD at Kadammanja village
- ¹⁶⁹ Ibid.
- ¹⁷⁰ Mixed FGD at Mkungumbe village
- ¹⁷¹ Men FGD at Kadammanja village
- ¹⁷² Ibid.

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