**Food Insecurity in Malawi:**

**Do Agricultural Input Subsidies Actually Address Hunger?**

Environmental Policy Brief

Andy Currier

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Professor Travis Reynolds

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**1. Introduction**

In spite of abundant natural resources, fertile soil and a majority of the population engaged in agriculture, a long history of failed agricultural policies- including well-intentioned agricultural subsidies - have placed the Southeastern African nation of Malawi 99th out of 107 developing countries in terms of food security (FAO, 2014). 90% of all Malawians are engaged in agriculture with tobacco, tea, cotton, sugarcane and maize being the primary agricultural products (ciaworldfactbook, 2013). Independent from Great Britain since 1964, Malawi has had four presidents, all of whom have pursued a form of agricultural subsidies (Buffie & Atolia, 2009). Despite the long history of agricultural input subsidies, food security remains a pressing issue in Malawi.

Still active today, extensive and costly fertilizer subsidy programs implemented in the mid-2000s initially increased maize outputs in Malawi (Doward & Chirwa 2011; Beck, Pauw and Mussa 2013) but have failed in ameliorating food security overall (Mazunda 2013; Schutter 2013). Through an overview of the current research and a primary statistical analysis of the 2005 Farm Input Subsidies Program (FISP) this paper will explore both the limited positive impacts of the subsidies in the Malawian context and also the unforeseen negative environmental and social consequences.

**2. Environmental Policy Context**

***2.1. Food Insecurity Stakeholders***

This section will provide an overview of the interest and power of stakeholders in addition to a concise summary of current international regimes and past domestic policies. From international agencies oceans away to the farmers planting maize, the stakeholders for food security reflect a wide variety of actors with greatly varying means of shaping outcomes. In the absence of an international food regime, the Food and Agricultural agency of the UN exists as the closest substitute (Dorward & Chirwa, 2011). Without any real enforcement budget or incentive, the FAO primarily serves an advisory role. Between 2007-2009, 40% of Malawi’s national budget came from foreign aid giving international donors a voice in policy decisions (Wroe, 2012). Small-scale farmers have the most at stake yet lack sufficient power to influence large scale food policy decisions left to the donors and government (Beck, Mussa & Pauw, 2013)

*Table 1*: Food Insecurity Stakeholders

|  |  |  |
| --- | --- | --- |
| Actors | Interests | Ability to Shape Outcomes |
| Malawian Rural Famers | Increased crop yields grown to sell in addition to personal food security1 | Limited by lack of cohesion or political clout |
| Malawian Government*(Ministry of Agriculture and Food)* | Increasing political support through popular programs | Implement subsidies on fertilizer |
| International Aid Community(*USAID)*  | Increasing food security in Malawi to help poorest citizens in the most efficient manner possible2 | Direct usage of aid in addition to threatening suspension to shape outcomes4 |
| Food and Agriculture Organization of the United Nations (FAO) | Leads the international effort to defeat hunger; active in Malawi since 19863 | Provides technical policy, legal and implementation advice to the government3 |

1. Dorward & Chirwa, 2011

2. Wroe, 2012

3. FAO, 2013

4. Chinsinga, 2013

***2.2 International Food Security Regimes***

The Food and Agriculture Organization (FAO) of the United Nations exists as the premier international agency regarding food security issues in the world. The organization aims to eradicate food insecurity, hunger and malnutrition (FAO, 2014). With a budget of $2.4 billion USD in 2014-15, the organization provides a wealth of data, facilitates communication between nations and seeks to implement more efficient agricultural policies within countries (FAO). The FAO does not enforce rules on domestic agricultural policy, but rather serves as a tool for countries to rely upon for aid in increasing food security. The United States additionally plays an involved role in food security for a number of African countries including Malawi. The United States Agency for International Development (USAID) and Feed the Future, the US government’s global hunger and food security initiative both work towards providing food security in Malawi (USAID, 2014 & Feed the Future, 2014). USAID currently funds programs aimed at strengthening legume and dairy production for smallholder farmers (Feed the Future Multiyear Strategy, 2011).

***2.3 Other Policies Targeting Malawian Food Insecurity***

Agricultural subsidies in Malawi date back to independence in 1964. The initial small-scale seed and fertilizer distribution made Malawi self sufficient in maize production without decreasing high rural poverty rates (Buffie & Atolia, 2009). During the 1980’s, International Monetary Fund (IMF) and World Bank involvement in Malawian development phased out the subsidies in order to lower price distortions and promote a more diverse economy (Buffie & Atolia, 2009). By 1992 the Malawian government implemented the Drought Recovery Input Project to combat lack of rains. By 1998 the government issued Starter Packs (SP) of free seed and fertilizer to cultivate 0.1 hectares of maize (Pauw and Thurlow, 2014). Due to rising costs and donor pressure, the Targeted Input Program (TIP) replaced the Starter Pacts in 2001 but only targeted half of the original SP beneficiaries (Pauw and Thurlow, 2014). Donor pressures to put more money into physical infrastructure and social programs led to the start stop-nature of agricultural funding through the 90’s and early 2000’s (Buffie & Atolia, 2009). Since 2003, multiple smaller programs that subsidize fertilizer have reached between 1-2.8 million people (Buffie & Atolia, 2009). Despite the long history of agricultural subsidies in Malawi, no previous programs come close to rivaling FISP in terms of cost and recipients.

Figure [1] compares the success of the TIP and FISP programs in relation to fertilizer use and maize production.

*Figure 1***: Maize Yields and Subsidized Fertilizers**

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Source: Pauw and Thurlow, 2014

**3. Current Environmental Problem**

***3.1. Measuring Food Insecurity***

The domestic environmental issue of chief concern in Malawi remains food security (USAID, 2011). The World Health Organization defines food security as built upon two pillars: availability of access to sufficient quantities of food on a regular basis and having sufficient access to food to support a nutritious diet (WHO, 2014). The Malawi Vulnerability Assessment Report in 2013 found the number of people in Malawi at risk of food insecurity to be 1,461,490 spanning 21 districts (Food Insecurity Humanitarian Update, 2013). Nearly 12% of the total population spread across the country does not have access to sufficient food or nutrition. A staggering 47% of children are stunted in growth due to lack of proper nutrition (USAID, 2014). The situation also shows signs of worsening due to an increase in maize reliance the past 5 years (Chibwana & Fisher, 2011). With the population dependent on maize consumption for the majority of consumed calories (FAO Malawi Nutrition, 2014), the Malawian diet remains low in several key nutrient categories.

Figure [2] illustrates the discrepancy between Malawi and the world average for percentage of the population suffering from food inadequacy. Malawian food inadequacy does not decrease in relation to how much maize yields increase, challenging the link between maize production and food security. Additionally the decrease in Malawi mirrors a global decrease that has been slowly moving down over the past decade.

*Figure 2***: Malawi food inadequacy and maize outputs compared to the global average**

Source: Faostat, 2013

***3.2. Attempted Policy Response: Food Input Subsidy Program (FISP)***

 Implemented in 2005 by the Malawian government, FISP’s core objective was to improve resource poor, smallholder farmers’ access to improved agricultural inputs in order to achieve food security in addition to raising revenue generated by producing excess maize to sell (Dorward and Chirwa, 2011). To accomplish this the program implemented a voucher system that would provide agricultural (primarily fertilizer) subsidies to smallholder farmers. The subsidy applied to nearly half of all farmers in Malawi, 1.5 million and provided each farmer with two highly discounted fertilizers (Mazunda, 2013). Actual costs of the program highly exceeded estimations rising between $50 million at the start to just under $250 million USD between 2008-2009 (Chibwana et al 2011).

 Figure [3] shows how FISP progressively cost more and more than initially anticipated. By 2008, the program cost nearly doubled initial calculations.

*Figure 3:* **FISP Cost: Actual vs. Estimated**

***3.2 FISP Program Successes***

 The agricultural subsidy program succeeded in increasing maize production across the country, reached a large number of farmers, and prioritized the welfare of producers in staple crop production (Dorward and Chirwa, 2011). While constrained by weaknesses in critical data, studies have shown that the program increased net crop income and household income in addition to slight advances in childhood health and education (Dorward and Chirwa, 2011). Additionally, overall national maize production has increased substantially over the period (Mazunda, 2013). A similar study aimed at measuring the effects of FISP done by Chibwana et al (2011) also found a rise in maize production at the national level. Overall evidence of economy wide changes exists, but questions remain on the amelioration of food insecurity in Malawi.

Source: Chibwana, 2011

 Figure [4] demonstrates how FISP impacted maize outputs. Before implementation of the subsidy, Malawi suffered a period of net maize deficits. Once implemented, the subsidy resulted in great increases to maize production.

*Figure 4:* **Increases in Maize Production**



Source: Chibwana, 2011

***3.3. FISP Outcome Shortcomings***

 While recent research by Dorward & Chirwa (2013) concluded that FISP positively impacted the Malawian economy in several areas, these same authors also found the overall effect disappointing when the time and energy spent were taken into consideration. They found:

* Recipients reported adequate food production at a 22% higher rate than non-recipients
* 60% of the subsidy recipients reported still being net maize purchasers not producers
* Only 30% reported that the subsidy led to increased maize consumption

 With a high level of commitment, these survey findings challenge the effectiveness of FISP. Implemented by the Ministry of Agriculture and Food Security (MoAFS), 69% of the ministries budget has gone towards FISP since 2005 (Mazunda, 2013). By placing all the eggs in one basket, other possible programs and development agendas aimed at decreasing food insecurity have, “gone on the shelf” (De Schutter, 2013). Despite committing 16% of the total governmental budget to fertilizer subsidies by 2009, Malawi still imported $30 million USD worth of maize to cover the shortfall until 2012 (Tafirenyika, 2013).

 Other critics note that FISP increases the amount of fertilizer usage with possible negative consequences to the environment. Fertilizers used in Malawi contain as most fertilizers do, high levels of nitrogen, phosphate and potassium. Over extended usage, fertilizer application can result in soil acidification with drastic decreases in soil productivity (Buxbaum, 2012). Runoff from land where fertilizer has been applied poses additional risks to the bodies of water it accumulates within. Multiple studies in Sub-Saharan Africa link fertilizer usage to the ecological compromise of surface waters including algal blooms and fish kills (Nyenje et al., 2010). With Lake Malawi serving vital importance to a substantial portion of the population, fertilizer runoff damage threatens their economic capabilities.

***3.3 FISP Institutional Issues***

 Several implementation issues of FISP have played a role in its inability to produce sufficient food insecurity ameliorations. Both Chibwana et al (2011) and Dorward and Chirwa (2011) voice concern with opaqueness of the coupon distribution system. Placed in the hands of local and traditional authorities, the poorest farmers were not the primary recipients of the subsidies as initially intended. Instead, a disproportionate number of coupons went to long-term village residents (Chibwana and Fisher, 2011). While the subsidized fertilizer may have increased the moderately well off farmers, failing to reach the poorest fails to decrease food insecurity.

As seen in Table [2], maize dominates consumed calories on the per capita level. Regardless of impact on maize production, FISP subsidies have maintained the dietary dominance of maize. The Malawian staple food of *nsima* is made from cornmeal and makes up the majority of each meal (Nordin, 2013).

*Table 2:* **Per capita consumed calories by source**

|  |  |
| --- | --- |
| *Commodity* | *Quantity [kcal/capita/day]* |
| Maize | 1158 |
| Potatoes | 195 |
| Cassava | 135 |
| Sugar | 124 |
| Pulses, other | 95 |

Source: Faostat, 2013

Farmers’ continual inability to produce enough food to last all year has resulted in what is known in Malawi as the hungry season from December until the harvest in March (Mandala, 2005) By putting all time and effort into maize production, farmers harvest all the food that is to last them until the next year over a very short period of time. Stored in naturally crafted silos, the maize must be strategically rationed off over the course of nearly a year. FISP subsidies do not encourage crop diversification that could result in a year round harvest season of various crops (Nordin, 2013).

Figure [5] provides an overview of FISP strengths and weaknesses. Both positives and negatives should be evaluated when assessing the overall impact of the program.

***Figure 5:* Overview of FISP Strengths and Weaknesses**

|  |  |  |  |
| --- | --- | --- | --- |
| Strengths | Overall increased maize production for coupon recipients[[1]](#footnote-1)  | On average increased household income for recipient families[[2]](#footnote-2)  | During implementation the Malawian economy grew 7% per year3 |
| Weaknesses | The poorest households were not the primary recipients of subsidies4 | Concentrated harvest time & hunger season60% of recipients remain net maize purchasers not producers4  | No incentives for crop diversification maintain the maize heavy Malawian diet low on nutritional value5  |

 Despite the intensive subsidies and spike in maize production, Malawi still ranks at the bottom of food security (Global Food Security Index, 2014). This fact remains a strong opposition to the effectiveness of input subsidies that have been given sufficient time and resources to succeed yet have still fallen short (De Schutter, 2014).

**4**. **Policy Proposals: Time for a New Path**

 Despite the money poured in and the resources devoted to FISP, little concrete data exists to demonstrate an increase in food security (Mazunda, 2013; Dorward & Chirwa, 2011; Becka, Pauw, Mussa, 2013). The fact that Malawi still imports maize to feed a portion of its poorest citizens hardly demonstrates FISP success in achieving its main goals (De Schutter, 2014).

 The results of this analysis suggest that to date FISP policy in Malawi has failed in providing an adequate solution to food insecurity. All of the emphasis on increasing maize production in Malawi perpetuates poor diet and requires more agricultural effort than an alternative system promoting the usage of diverse crops. Both issues can be solved by local institutions promoting Permaculture: a shift away from maize and towards crop rotation that naturally replenishes the soil, provides food year round and serves greater nutritional function.

While many see FISP failures and immediately call for even more subsidized fertilizer, this is both damaging and unnecessary. It is worth noting that maize does not grow naturally in Sub-Saharan Africa and arrived in the 1500’s with the Portuguese (Conrad, 2010). Heavy reliance solely on maize over time has depleted the soil of natural nutrients misleading decision makers to signal fertilizer as the only option (Nordin, 2013). Permaculture calls for the strategic planting of a diverse series of various local crops including legumes, sorghum, yams and fruit trees that can be harvested year round (Nordin, 2013).

While permaculture lacks abundant research it has great potential to alleviate several of the food insecurity symptoms as proven by small-scale successes in Malawi. Future research on the cost, labor and overall production possible from permaculture systems will be necessary to determine if it could succeed on a national level. As seen on smaller levels it could lower input cost, naturally replenish the soil and provide a more balanced diet with harvests throughout the year (Nordin, 2013). Local villages that have adopted the practice have seen an increase in food supply, a more nutritious diet and healthier soils (Kusamala, 2013).

 By freeing the government from the aforementioned subsidy burden, money can instead be spent on additional social and infrastructure projects. Giving citizens the power to feed themselves through the strategic planting of diverse crops will additionally provide a much more balanced diet.

 Instead of focusing on improving maize production, an effects based approach targeting the number of Malawians still inadequately fed would serve a more accurate benchmark when evaluating program effectiveness. By these standards expensive input subsidies have failed to proportionately increase food security and the time for research into a new agricultural system has arrived.

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1. 1. Chibwana et al 2011
	2. Chibwana & Fisher 2011
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	5. Nordin, 2013 [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)