

# Effectiveness of Farm Inputs Subsidy Program in Low Resource Settings: A Case Study of Malawi

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## ABSTRACT

**Introduction:** Despite agriculture being a key sector in Malawi's economy, productivity of smallholder farmers is still low as a result of access to low quality farm inputs, poverty and frequent climatic shocks. The Farm Input Subsidy Program (FISP) was established to boost access to subsidized fertilizer and improved seed, and to support agricultural productivity and food security. This study aimed to assess the impact of the Malawi Farm Input Subsidy Programme (FISP) on smallholder farming household agriculture, food security and livelihood

**Methods and Analysis:** A mixed-methods approach using both quantitative and qualitative data was employed. Primary data were collected from beneficiary and non-beneficiary households, and secondary on agricultural production, input utilisation, and food security were also collected from the key informants. Descriptive statistical analysis (mean, frequency and percentage) and inferential statistical analysis were used to compare programme outcomes, using quantitative data. Key Informant Interviews and focus group discussions were conducted to gather qualitative data, and these were transcribed, coded and analysed thematically to derive key patterns and insights that supplemented the quantitative findings.

**Findings:** FISP stimulated the adoption of improved seeds and fertilisers by beneficiary household. Overall, over 80% of the beneficiary households reported having adequate food during the year while 60% of non-beneficiary households indicated adequate food during the year. Climatic shocks, late distribution of inputs, input shortages, targeting problems, and implementation costs, however, limited the programme's effectiveness. The programme was more beneficial for larger landholders and farmers in high rainfall regions than for poorer households and farmers in low rainfall regions.

**Conclusions:** The study finds that the use of improved seed, improved fertiliser and generation of improved crops have been enhanced and household food security improved since the use of FISP. However, its impact was limited due to delayed input distribution, input shortages, lack of beneficiary targeting, high implementation costs and climate shocks. Beneficiary selection should be made more transparent by having clear criteria for beneficiaries and by updating the beneficiaries' registers regularly, inputs should be provided before the planting season, extension and other complementary agricultural support services should be strengthened, and monitoring systems should be strengthened by regular field supervision and evaluation of the programme.

**Keywords:** Farm Input Subsidy Program, agricultural productivity, food security, smallholder farmers, low resource farmers.

## INTRODUCTION

Malawi is still a predominantly agricultural country with approximately 80% of the population relying on agriculture for food, income and livelihood. Maize production is mainly done by smallholder farmers. But agricultural productivity remains low due to low soil fertility, limited access to modern inputs, climate

variability, and high poverty in rural areas. They pose problems for resource-poor farmers who lack the funds to purchase improved seeds and fertiliser on the market [1].

To address these challenges, the Government of Malawi has introduced the Farm Input Subsidy Programme (FISP) for 2005/2006 Agriculture Season [2]. The objective of this programme was to broaden access to the subsidised improved fertilizer and seed, promote agricultural productivity, ensure food security, alleviate poverty, and stimulate the economic development of the rural communities.

Positive results have been reported, including higher maize production, improved food availability, and higher rural incomes (Daward, 2013). The effectiveness of targeting beneficiaries is limited, as are the effectiveness of programme costs, input leakage, delayed delivery, and inequitable distribution of benefits [3].

While there has been a significant amount of national level evaluation, there has been little research that focuses on local-level programme performance. The study is therefore an assessment of the effectiveness of FISP in Lilongwe District to help inform the policy and enhance food security and livelihoods of smallholder farmers.

Study principles of informed consent, confidentiality and voluntary participation were followed. The University of Malawi Research Ethics Committee (UNIMAREC) gave ethical approval. This study was conducted in five agricultural seasons between 2019/2020 and 2023/2024

## Global Agricultural Input Subsidy Models

Input subsidies for agriculture are common programmes aimed at boosting agricultural productivity, food security and livelihoods in rural areas. The implementation of these programmes reduces the cost of essential inputs such as fertiliser and improved seeds, thereby enabling farmers to adopt modern farming technologies. Agricultural subsidies have played a major role in enhancing food security and farm incomes in developed countries such as the United States, China, Japan and the European Union (EU) member states [4]. Fertiliser subsidies have helped enhance agricultural output and food self-sufficiency in Asia. Fiscal sustainability and market distortion have, however, cast doubt on the wisdom of subsidies, and “smart subsidies” have been adopted to support poor-resource farmers and promote private-sector involvement [5].

## Agricultural Input Subsidy Programmes in Sub-Saharan Africa

Agricultural subsidies were reintroduced in Sub-Saharan Africa after a reduction in fertiliser use and productivity caused by Structural Adjustment Programmes [6]. Fertiliser or seed subsidy programmes were introduced in Zambia, Ghana, Tanzania, Nigeria, Ethiopia and Malawi to boost the availability of agricultural inputs and promote agricultural growth. These programmes have been found to lead to higher rates of fertiliser use, yields, and food output. Despite this, issues of poor targeting, late delivery of inputs, political interference, corruption, and high programme costs persist and undermine the programme's effectiveness [7].

## Farm Input Subsidy Programme (FISP) in Malawi

To enhance the availability of low-cost fertiliser and improved seed to resource-poor smallholder farmers, Malawi launched the Farm Input Subsidy Programme (FISP) in the 2005/2006 farming season [8]. Studies have reported positive impacts on maize production, food security, and household resilience. Despite the improvements, challenges in implementation such as targeting errors, delays input distribution and political influences have impacted programme performance [9]; (Lunduka et al., 2013). FISP has played a very important role in the agricultural development process, yet some issues regarding sustainability, governance, and long-term effectiveness have emerged that demand further reform and greater linkage with other agricultural development processes.

It is known that FISP has boosted agricultural production and food security, but its effectiveness is yet to be established due to continued issues with targeting beneficiaries, delayed delivery of inputs, and implementation difficulties. This study aims at assessing the effectiveness of FISP on agricultural production, food security and the livelihoods of smallholder farmers in Lilongwe District, which is one of the main agricultural areas in Malawi

and also the smallholder farmers constitute a significant population and a high proportion of farmers with diverse farming conditions [11]; [12].

## METHODOLOGY

**Study Design** - A convergent parallel mixed methods design within a descriptive and explanatory case study of Lilongwe District, Malawi was used. The descriptive part measured FSSP outcomes (uptake of inputs, output of crops and food security status) and the explanatory part examined institutional, behavioral and contextual factors that shaped programme performance. The data collection was concurrent and both quantitative and qualitative data were analysed separately and combined in the interpretation process [13].

**Study Area** - Lilongwe District was purposively selected because of the high number of beneficiaries of the FSSP; because of the variety of agro-ecological conditions and because of the good agricultural administrative structures across the EPAs.

**Study Population** - The quantitative population included smallholder farmers who are beneficiaries of FSSP registered at the District and EPA agricultural offices. Eight EPAs in Lilongwe District (all EPAs in the district) were selected as sampling strata.

**Quantitative Sampling** - Cochran's formula was used to select a sample size of 387 households with a 95% confidence level,  $p = 0.5$  and 5% margin of error, given an estimated number of beneficiaries of 20,200. This was distributed proportionately according to beneficiary household distribution for eight EPA with simple random sampling within each EPA. Adjusting for non-response, 10% was applied and however an approximation of 426 was achieved, 387 valid responses were analyzed [14].

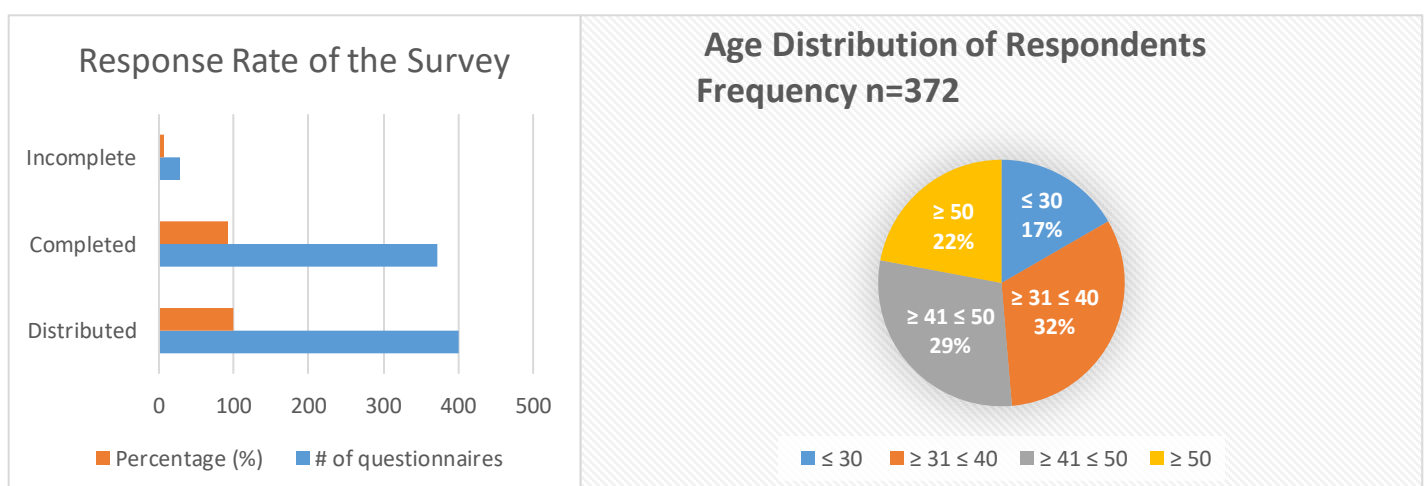
**Qualitative Sampling** - The twenty-five (25) key informants were purposively selected comprising five (5) beneficiary farmers, five (5) non-beneficiary farmers, five (5) extension officers, five (5) district/local government officials and five (5) agro-dealers. Data saturation and stakeholder relevance informed data for selection.

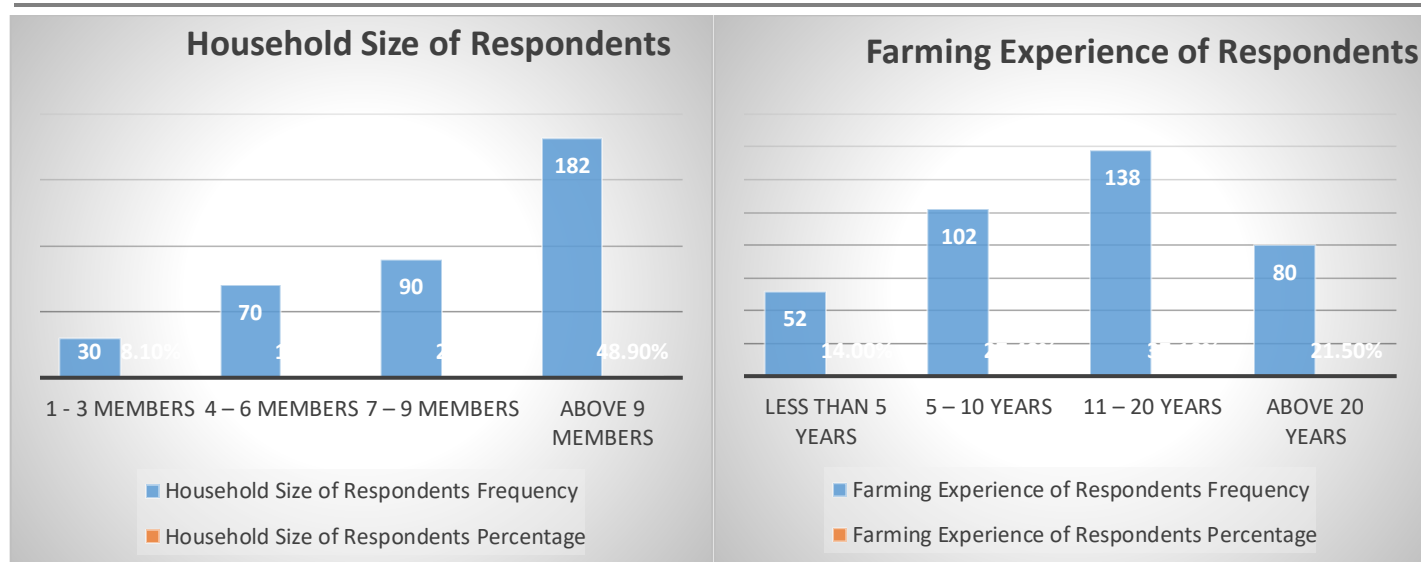
**Data Collection** - Structured household questionnaires (pre-tested on a small pilot sample outside the study area) and semi-structured key informant interviews were used to gather primary data. Secondary data were gathered from the reports of the Ministry of Agriculture and FISP administrative data as well as District Agricultural Development Office statistics. The questionnaire included socio-demographic, input access, timing of delivery, and food security indicators in relation to the crop production (Braun & Clarke, 2006).

## RESULTS/ FINDINGS

### Quantitative Findings

#### Response Rate, Age Distribution, Household Size and Farming Experiences





**Response Rate** - The very high response rate reflects a high level of participant engagement and good representation of the target population.

**Age Distribution of Respondents** - The majority of the respondents were in the age group 31-50, suggesting that most of the respondents are economically active farmers, and they are expected to be actively engaged in agricultural production and decision making.

**Household Size** - Size of households was relatively large with almost half of the households having more than nine people, which could be expected to bring family labour but greater food needs.

**Farming Experience** - The majority of the respondents (more than 10 years) had adequate farming experience to evaluate the performance of the Farm Input Subsidy Programme (FISP).

### Access to Subsidized Fertilizer and Seeds

Table 1: Access to Subsidized Fertilizer and Seeds by Respondent Type (N = 372)

| Response     | Smallholder Farmers | Agro-dealers     | Extension Workers | Community Leaders | Total             |
|--------------|---------------------|------------------|-------------------|-------------------|-------------------|
| Yes          | 90 (40.9%)          | 12 (40%)         | 10 (41.7%)        | 8 (44.4%)         | 120 (32.3%)       |
| No           | 130 (59.1%)         | 18 (60%)         | 14 (58.3%)        | 10 (55.6%)        | 172 (46.2%)       |
| <b>Total</b> | <b>220 (100%)</b>   | <b>30 (100%)</b> | <b>24 (100%)</b>  | <b>18 (100%)</b>  | <b>372 (100%)</b> |

The table shows that the beneficiaries' access to subsidized inputs was facilitated for the majority, but for a large number, access was still not achieved, implying low coverage of the programme.

### Qualitative Findings

#### Beneficiary Selection Process

| Theme                | Key suggestions                                        | Supporting evidence                                                                                                                    | Interpretation                       |
|----------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Selection Procedure  | Conducted at community level by leaders and committees | <i>"The selection is done at village level"</i><br>(Traditional leader)                                                                | Reflect decentralized Implementation |
| Lack of Transparency | Influence of local leaders and favoritism              | <i>"Some names are added because of connections"</i><br><i>"They start considering the members of their family first"</i><br>(Farmers) | Reflects bias and favoritism         |

|                  |                                          |                                                                                                    |                |
|------------------|------------------------------------------|----------------------------------------------------------------------------------------------------|----------------|
| Exclusion Errors | Some eligible farmers have been left out | <i>"I have never been selected"</i><br><i>"I only accessed once in all the years"</i><br>(Farmers) | Weak targeting |
|------------------|------------------------------------------|----------------------------------------------------------------------------------------------------|----------------|

### Availability, Accessibility & Adequacy of Subsidized Inputs

| Theme                      | Key suggestions                         | Supporting evidence                                                                               | Interpretation                       |
|----------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------|
| Physical access            | Long distances to selling points        | <i>"The selling points are very far"</i><br>(Farmer)                                              | High transaction costs               |
| Queuing and delays         | Long waiting times                      | <i>"We spend the whole day in queues"</i><br><i>"Sometimes we sleep at the shop"</i><br>(Farmers) | Inefficient Distribution systems     |
| Supply Constraints         | Low supply (limited stock). High demand | <i>"We always receive limited stock"</i><br>(Agro Dealer)                                         | Supply-demand imbalance              |
| Logistical Challenges      | Distribution affected by constraints    | <i>"Logistical constraints affect input availability"</i><br>(Government Official)                | Weak supply chain efficiency         |
| Delayed Distribution       | Inputs delivered after planting season  | <i>"Inputs come after planting has already done"</i><br>(Farmer)                                  | Reduces effectiveness of the program |
| Disrupted Farming Calendar | Farmers plant without inputs            | <i>"We plant without fertilizer"</i><br>(Farmer)                                                  | Leading to lower productivity        |
| Inadequate Quantities      | Inputs insufficient for full farm use   | <i>"Inputs not enough for the whole farm"</i><br>(Farmer)                                         | Limited impact                       |

### Key Challenges Affecting Programme Implementation

| Theme                  | Key suggestions                | Supporting evidence                                                                                   | Interpretation         |
|------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------|------------------------|
| Logistical Challenges  | Transport and delivery issues  | <i>"Transportation is difficult we normally travel a long distance to get the inputs"</i><br>(Farmer) | Delays in distribution |
| Administrative Issues  | Poor coordination              | <i>"Poor coordination"</i><br>(Extension worker)                                                      | Inefficiency           |
| Political Interference | Influence in selection process | <i>"Politics affect selection"</i><br>(Traditional leader)                                            | Distorted targeting    |
| Resource Constraints   | Limited inputs and funding     | <i>"Limited resources"</i><br>(Official)                                                              | Program limitation     |

## DISCUSSION

### Access to Subsidized Inputs and Beneficiary Targeting.

The results show that FISP has been able to increase access to subsidized fertilizer and improve seed availability for the smallholder farmers in Lilongwe District. But there were issues with the selection of beneficiaries (inclusion of less deserving beneficiaries and exclusion of eligible households). The allegations of favoritism and political influences in the selection process also corroborate with earlier studies on FISP that found targeting inefficiencies to be one of the main weaknesses of FISP [8]; [9]. This is a problem as it diminishes programme equity and benefits only the most vulnerable farmers.

### Impacts on agricultural productivity and food security.

The programme had a positive impact on agricultural productivity in terms of fertilizer use, better seed varieties and yields. Food availability also increased and food insecurity decreased among households that were

beneficiaries. The results are similar to the results of previous research in Malawi which found improvements in maize production and food security as a result of FISP [1]. However, productivity increases differed by household because of the agro-ecological differences, access to support services, and resource endowments.

### Implementation Challenges

Positive results were achieved, but input distribution was delayed, insufficient supply of subsidized inputs, and logistic issues were the factors that limited programme effectiveness. Late planting frequently led to farmers not using fertilizer or better seed which reduced possible yield increases. The same problems have occurred in other assessment exercises of Malawi's subsidy programme [16]

### Governance, Programme Sustainability.

Poor monitoring systems, lack of transparency and leakage of subsidised inputs threatened the performance of programmes. The findings are in line with the recommendations by [17] that good governance and good accountability are essential for programme sustainability. Targeting systems could be strengthened, monitoring systems improved, and FISP could be better linked with extension and market support services to boost its long-term effectiveness.

## CONCLUSION

This study analysed the implementation and effects of the Farm Input Subsidy Program (FISP) in Lilongwe District, Malawi. The results indicate that the programme enhanced access to fertilizer among the smallholder farmers and promoted better varieties of agricultural produce leading to greater agricultural productivity and food security. However, it was limited by access to inputs, timing of inputs, and access to inadequate quantities of inputs, weak targeting mechanisms, and governance issues. Experience shows that the following policy levels can improve programme performance: better targeting of beneficiaries; timely and sufficient input delivery; greater transparency and accountability; and additional extension and farmer training in addition to subsidies.

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