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El Niño preparedness and response

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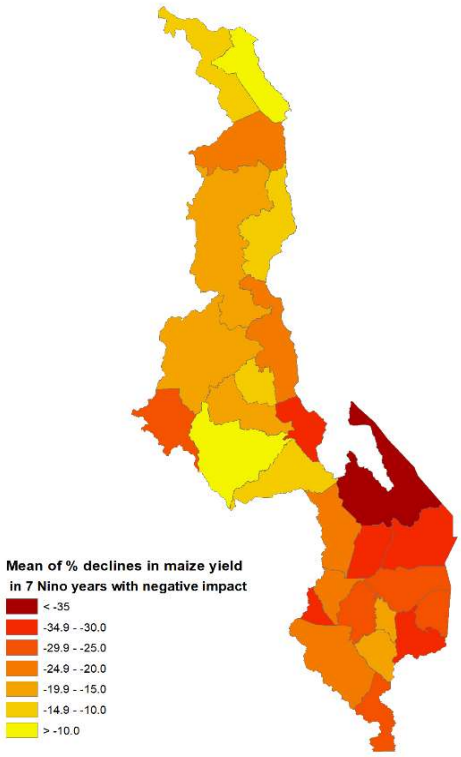
Malawi may face El Niño in a vulnerable state

El Niño is a phase in an irregular periodic variation in winds and sea surface temperatures over the Pacific Ocean. It occurs on average every 2 to 7 years and typically lasts between 9 months and 2 years. El Niño affects global weather patterns, resulting in above-average precipitation in some places and droughts in others. Malawi and its neighbors typically experience drier than usual weather during El Niño, which often leads to poor growing conditions and below-average harvests (Anderson et al., 2023). In mid-June 2026, conditions in the Pacific Ocean had surpassed El Niño thresholds, and it is likely that they will strengthen further (NOAA, 2026).

El Niño events often lead to poor growing conditions and below-average harvests in Malawi, especially in the south (Figure 1). Historically, two out of three events had negative impact on food production that reduced maize harvests on average by 22.5 percent relative to trend (Anderson et al., 2023). An exceptionally strong El Niño could reduce harvests even more. The last 'very strong' El Niño in 2015/16 reduced Malawi's maize harvest by 29 percent compared to the average of the previous 10 years (which themselves included two milder El Niño events). This year's El Niño events could be equally strong or even stronger (NOAA, 2026). Current forecasts by Malawi's Department of Climate Change and Meterological Services (DCCMS) indicate heightened risk of below-normal rainfall during the November–December planting period and of dry spells during the January–March vegetative period.

A drop in maize yields is not certain in 2027, but likely – it occured in 8 of the last 12 El Niño years. If this shock materializes, it will do so at an inopportune time. Parts of Malawi's food system, especially seed production, have not yet fully recovered from the last El Niño which affected the 2024 harvest. Although this year's harvest appears better than those of the previous two years, it will still fall short of Malawi's consumption

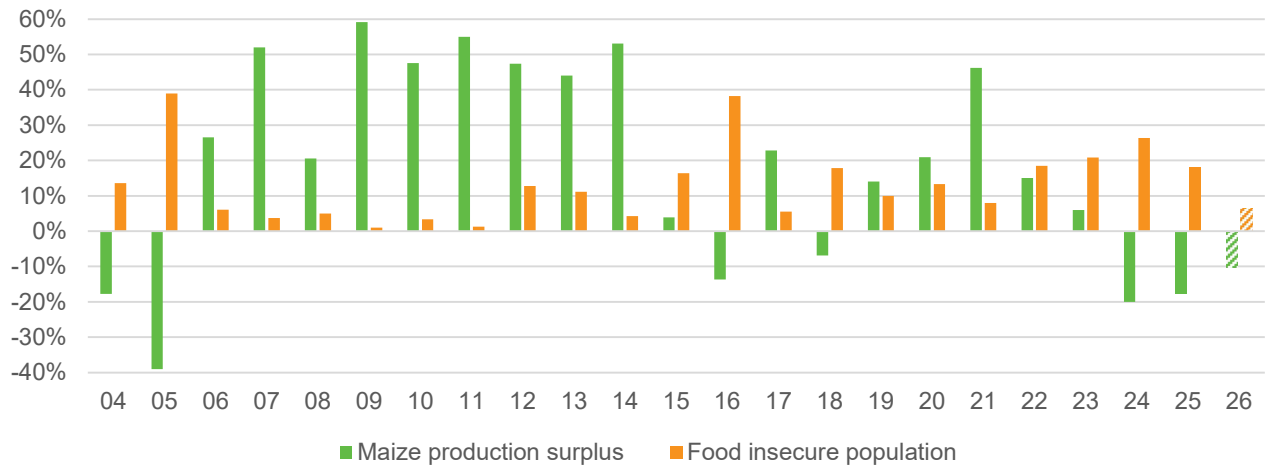
Figure 1. El Niño effects on maize production in negatively affected years



Source: Anderson et al., 2023.

needs (Figure 2). At the same time, a domestic macroeconomic crisis has driven up food prices (Changaya et al., 2026), while the conflict in the Middle East has increased the cost and constrained the availability of fertilizer and fuel needed to grow and transport food. These risks call for a shift from reactive disaster response to a proactive resilience agenda aligned with Malawi 2063 (MW2063), the First 10-Year Implementation Plan (MIP-1), the National Resilience Strategy, and the National Adaptation Plan. Such an agenda would support Malawi 2063's ambition of building an inclusively wealthy, self-reliant, and industrialized upper-middle-income country by protecting the agricultural productivity and commercialization on which that ambition depends.

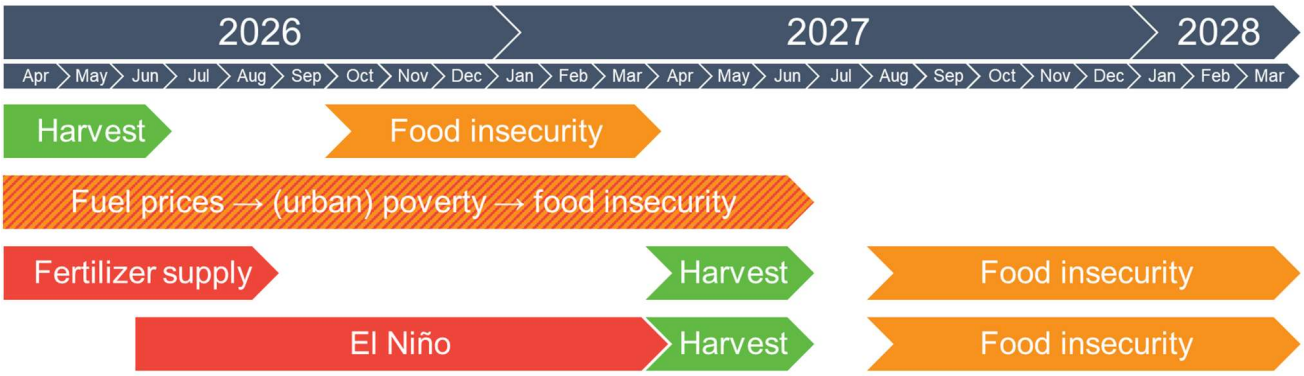
Figure 2: Maize production surpluses and food insecurity in Malawi, 2004 to 2026



Notes: Compiled by authors from the government's Agricultural Production Estimates Survey data and Malawi Vulnerability Assessment Committee reports. Figures for 2026 are tentative.

These shocks reinforce one another, but their impact on food security will materialize at different times. The likely insufficient 2026 maize harvest (April – June 2026) will lead to food insecurity during the next lean season starting in or after October 2026 and running until next year's harvest. High fuel prices compound this by raising the cost of traded food and other goods almost immediately. Ongoing fertilizer supply issues and the impending El Niño will impact next year's harvest, so their effect on food security will not be felt before the following lean season running from around August 2027 until March 2028.[1] These relationships are illustrated in Figure 3.

Figure 3: Pathways from shocks to food insecurity



The scope for government action varies across these shocks and over time. There is little that government can do to improve this year's harvest or lower international fuel prices,[2] so policy can only cushion their immediate effects on food security.[3] By contrast, fertilizer shortages and the likely El

Niño-induced dry spells risk reducing the 2027 harvest, and thus food security from roughly May 2027 to March 2028, with the worst effects typically felt toward the tail end of this period.

Mitigation strategies

What can be done to reduce these risks, even while the government continues to respond to the current season's challenges and protect access to food amidst high fuel prices? Broadly, there are two sets of strategies: those aimed at reducing the impact of El Niño and high fertilizer prices on 2027 agricultural production and those seeking to minimize the impact of reduced agricultural production on food security.

Safeguarding the 2027 harvest

Malawi usually experiences drier-than-average growing seasons during El Niño years, with the strongest effects in the south. Choosing the right varieties can play a critical role in managing production risk. Early-maturing (short-season) and drought-tolerant maize varieties respond to moisture stress through different mechanisms. Early-maturing maize varieties enable drought escape by completing their growth cycle before the onset of terminal dry spells, increasing the likelihood of a successful harvest. In contrast, drought-tolerant varieties are better able to withstand moisture stress and are more likely to reach maturity in dry conditions. Extension services should promote a context-specific mix of early early-maturing and drought-resistant maize varieties to enhance resilience in El Niño years (Anderson et al., 2023).

For farmers to plant appropriate varieties, they must have access to the right seed. The government should create an enabling environment that ensures the availability of appropriate seed, on time, in sufficient quantities and at competitive prices. This will entail leveraging the capacity of private sector players. The amount of maize that companies with spare irrigation capacity can grow during the dry season is very small compared to Malawi's production deficit, but substantial compared to its seed requirement. Instead of asking private companies to grow irrigated maize for food consumption, the government should encourage them to multiply seed varieties that are most likely to withstand El Niño conditions. There is still a short window of time - until the beginning of August – to plant one more round of winter seed multiplication this year.

Farmers can also be encouraged to plant staple crops which are naturally more tolerant to drought than maize. These include cassava, sorghum, pearl millet, and sweet potato. The optimal crop mix will however depend on individual farm circumstances. Seed for early-maturing and drought-resistant maize varieties can be unaffordable for many cash-constrained farmers. An acre of cassava can feed as many people as an acre of maize, but once harvested, cassava has very short shelf life without labor-intensive processing. It may therefore not be the best choice for labor-constrained households. Sorghum and millet do not require complicated processing, but they yield only about half the calories per acre as maize or cassava (Cockx et al., 2026). They may therefore not be the best choice for land-constrained households. Sweet potato also does not yield much energy per acre, and while it does not require consistent rain like maize, it does need sufficiently moist soil. It can therefore do well in seasons with irregular rain, but not necessarily under full drought conditions.

In general, growing more than one staple crop will reduce the risk of total farm loss as different plants are most susceptible to drought at different phases of the growing season, but it may reduce total expected farm yield. On the other hand, intercropping maize with drought-tolerant, nitrogen fixing legumes like cowpea and pigeonpea can also reduce the risk of total crop failure by offering an additional chance for partial drought escape, without reducing total expected yield. Along with ferti-

lizer management through microdosing split application, it also improves nutrient availability and uptake. This is not only important for maintaining yields when farmers must reduce fertilizer application rates due to its high price, but also for maintaining plant health, which improves drought resistance.

Similar to planting more than one crop, staggering planting dates of individual crops may further reduce the risk of total crop failure. Otherwise, farmers should be prepared to replant multiple times in case of early crop failure due to a dry spell to increase the chance that at least one crop matures (Anderson et al., 2023). The optimal timing of planting will again depend on each farmer's circumstances: Staggering planting dates reduces the risk of total crop failure but limits the maximum potential harvest as some plants will grow outside of their optimal vegetative window. Replanting avoids this pitfall, but it is costly, so cash-constrained farmers may not be able to afford it or may need to opt for cheaper seeds with lower expected yields.

Soil moisture management is also critical for local drought avoidance. Where the necessary infrastructure exists, supplemental irrigation can help maintain sufficient soil moisture levels during dry spells. However, most agricultural land in Malawi is unirrigated, and rehabilitating dilapidated schemes or constructing new ones is both costly and time consuming. Most farmers will therefore have to rely on other soil moisture management techniques. Conservation agriculture and minimum tillage approach to land preparation can improve soil moisture retention. Planting basins promote rainwater harvesting. Mulching where biomass is available can help reduce moisture loss. Increased spacing between plants and frequent weeding reduce competition for moisture and soil nutrients (Anderson et al., 2023).

Finally, farmers should monitor closely for pests like fall armyworm and locusts, which tend to be more common under drought conditions, and promptly apply appropriate pesticides.

Some of these strategies and technologies are generally recommendable, no-regrets actions. Good management of soil moisture, soil health and fertilizer should be encouraged in all circumstances. Others involve significant tradeoffs between lowering the risk of harvest failure (e.g., early-maturing maize varieties, drought-resistant varieties and crops) and increasing yields (long-season high-yielding maize varieties). Good understanding of these tradeoffs is important for informed farming decisions. Extension messaging should therefore not be limited to prescriptive technology transfer. Rather, extension services should endeavor to provide timely, consistent and localized forecasts, and convey the agricultural principles based on which farmers can decide on the approach that is best in their individual circumstances.

For these mitigation strategies to be effective, farmers need timely access to relevant information and appropriate inputs. Government can support both. The Ministry of Agriculture, Irrigation, and Water Development (MoAIWD) maintains a corps of extension officers who can provide advice on appropriate farming strategies and help disseminate timely weather forecasts from DCCMS. MoAIWD also oversees basic seed production, so it can steer seed multipliers toward appropriate varieties. Importantly, MoAIWD is also involved in the provision of seed and fertilizers through the Farm Input Subsidy Programme (FISP), so it can directly influence which inputs are provided, when they are delivered, and who receives them. However, in seasons with a high likelihood of drought, spending on fertilizer entails significant risk: fertilizer applied to maize that fails under moisture stress is largely wasted, reducing returns to both farmers and the public budget. From a national food security perspective, it will be extremely important that FISP targets those farmers who can turn subsidized inputs into as much maize as possible rather than households in greatest need of social protection, whose needs may be more effectively addressed through instruments such as cash transfers or in-kind food distribution.

Ensuring food security after a poor harvest

Even if all the anticipatory actions outlined above are successfully implemented, there remains a large chance that the 2027 harvest will be poor. What can be done to ensure national food security under such conditions?

First, it is important to ensure that as little produce as possible is lost after harvest. With support from extension services, farmers should prepare to employ optimal post-harvest management.

Second, shoulder season and winter harvests should be maximized, subject to economic viability. Farming in dambos incurs similar costs to rainfed farming. The cost of irrigated farming of staples, however, often surpasses the market value of the crop, making it cheaper for farmers to buy their food than to grow it under irrigation. Rather than indiscriminately promoting irrigated staple farming, extension services should therefore capacitate farmers to gauge whether the practice is economically viable for them.[4]

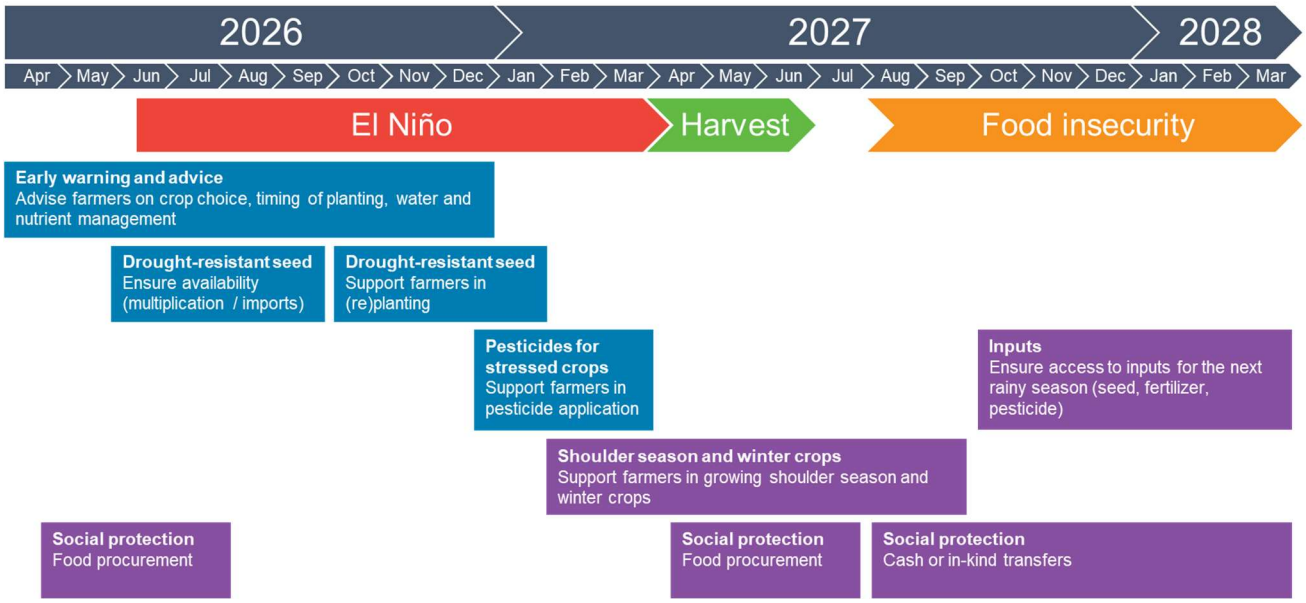
If Malawi does not produce enough food to sustain its population, it will have to import staple foods, most likely maize. Provisions for imports should be made early so that maize can be procured when it is most advantageous to do so, which is around the middle of the calendar year if sourced regionally. If El Niño leads to poor harvest in the whole region, maize may have to be sourced from places where El Niño tends to improve growing conditions, such as parts of East Africa or North America. Regardless of who imports the grain, forex availability will be crucial.

Cash transfers can be used to help vulnerable households buy food, and lessons for their successful implementation can be drawn from past programs (see Babu et al., 2018 and Botha et al., 2018 for details). However, they will only improve the situation if food is available for purchase, that is if Malawi grows or imports enough food to satisfy its domestic consumption needs. Thankfully, regional markets are relatively well integrated, so grain chases high prices. This happens through informal channels when formal ones are unavailable, as documented in IFPRI's monitoring of maize markets (IFPRI, 2017-present). To avoid competing with its neighbors for expensive grain after the 2027 harvest, Malawi could jump the queue and procure maize now for storage and use during the 2027/28 lean season.

Timing of interventions

Timely implementation of these mitigation strategies will be essential to their effectiveness. Figure 4 outlines the optimal timing of interventions using the same timeline as Figure 3. Interventions aimed at safeguarding the main 2027 harvest are represented by blue boxes, while interventions to ensure food security after a poor 2027 harvest appear in purple boxes. Anticipatory interventions – including early warning, advice on appropriate technologies, and input provision – will need to be implemented before and during the next rainy season, i.e. between now and approximately March 2027. Response interventions such as support for shoulder season and winter cropping, social protection, and provision of agricultural inputs for the following agricultural season will mostly be needed during and after the coming rainy season, i.e. approximately from February 2027 until March 2028.

Figure 4: Optimal timing of interventions



Available financing

Preparing for and responding to El Niño will be costly, and the means to pay for it are limited. The national budget allocates K590 million to disaster risk management for the current fiscal year, but most of this is earmarked for travel, asset maintenance, and office operations. Only K114 million (USD 65 thousand at the official exchange rate) is available for substantive interventions: K65 million (USD 37 thousand) for insurance premiums and K49 million (USD 28 thousand) for the procurement of goods and services. Bilateral donor budgets are declining and, for the most part, already committed to other purposes. United Nations budgets are similarly constrained.

More robust financing is available through several multilateral instruments, funded primarily by the World Bank. The most rapidly accessible resources sit within the Regional Emergency Preparedness and Inclusive Recovery (REPAIR) project. About USD 2.6 million remains in pre-arranged reserves, releasable within seven days of a request from the Ministry of Finance. A further USD 56 million is available through a contingent facility activated by a formal emergency declaration, and USD 9 million is earmarked for insurance premiums, which could translate into USD 30–40 million in payouts. However, because REPAIR is designed to cover shocks through 2030, drawing down the full envelope at once would leave Malawi exposed to subsequent crises. It is therefore advisable – and likely – that some of these resources will be retained for future crises, making only a fraction available for El Niño response.

Additional resources can be mobilized through the scalable social protection mechanism under the Social Support for Resilient Livelihoods Project (SSRLP), which can deliver cash transfers via existing digital infrastructure. Only USD 2.5 million remains in SSRLP, with a further USD 3 million potentially available once the successor INSPIRE-O project becomes effective, expected in January 2027. A proposed insurance policy backing scalable social protection would unlock another USD 9–10 million in coverage. REPAIR could cover the premium of USD 2–2.5 million using part of the USD 9 million it has earmarked for such purposes, but the deal has yet to be closed.

A sovereign drought policy with African Risk Capacity is also under negotiation, with premium support expected from the African Development Bank, REPAIR (drawing on part of the USD 9 million budget earmarked for premiums), and the Government of Malawi (using the K65 million budget for

premiums). Coverage will be confirmed only once the policy is signed, but past policies have typically been worth USD 10–12 million.

Finally, up to 10 percent of the undisbursed World Bank portfolio – about USD 100 million – can be reallocated to emergencies through the Rapid Response Option. There are, however, competing demands for these funds, and reallocation comes at the cost of foregone development spending, including investments in resilience to future disasters. It is therefore unlikely that the full amount will be available for El Niño response.

Prioritizing and planning

All in all, the financial instruments that could be used to fund El Niño preparedness and response are worth less than USD 190 million, and in practice only a fraction of this amount is likely to be available for this specific purpose. Moreover, most of these resources will become available only once the impacts of El Niño begin to materialize. They can therefore be used for response interventions (purple boxes in Figure 4) but not for anticipatory action (blue boxes in Figure 4). If funding flows are triggered only once drought impacts become verifiable (e.g. around February-March 2027), they will need to sustain response efforts well beyond the initial shock, potentially for a little over a year until the end of the 2028 lean season. Any financing strategy must therefore adopt a longer-term perspective that accounts for the extended duration of impacts. Focusing resources primarily on the initial waves of the shock would be risky, as it could leave insufficient support for the most severe phase, which typically occurs toward the end of the lean season (i.e. the first quarter of 2028).

Fortunately, many anticipatory activities can be carried out with little additional funding, using mechanisms and arrangements already in place. El Niño-specific agronomic advice can be disseminated through existing extension channels. One round of winter seed multiplication still remains and can be steered towards drought resistant varieties, which can also be promoted through the Farm Input Subsidy Program. To succeed, however, the relevant authorities will need to act quickly and in a coordinated manner. Coordination and planning will likewise be essential to ensure that the limited resources likely to become available for disaster response are used to the greatest possible effect. It is likely that there will not be enough available funding to cover the full cost of all anticipatory and responsive action that would be undertaken under ideal circumstances. The most effective interventions will need to be prioritized, and the unaffordable ones dropped. Crucially, the planning for such scenarios should begin now. Once funding gaps become certain, it will be too late to prioritize.

More broadly, El Niño preparedness is a test of Malawi's ability to plan ahead, protect development gains, and build resilience. Shocks such as El Niño can undermine the implementation of the MIP-1 and threaten progress toward the goals of Malawi 2063. Strengthening resilience is therefore not only a disaster-management imperative but also a development imperative. While immediate preparedness and response measures are essential, longer-term efforts must continue to address the structural drivers of chronic food insecurity and vulnerability. By doing so, Malawi can better withstand future shocks while safeguarding its long-term development trajectory.

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REFERENCES

Anderson, W., M. Chiduwa, J. De Weerdt, X. Diao, J. Duchoslav, Z. Guo, H. Kankwamba, A. Jamali, J. Nagoli, J. Thurlow, and L. You. 2023. Mitigating the impact of El Niño on hunger in Malawi. MaSSP Policy Note 51. Washington, DC: International Food Policy Research Institute. https://hdl.handle.net/10568/134549

Babu, S., A. Comstock, B. Baulch, A. Gondwe, C. Kazembe, K. Kalagho, N. Aberman, P. Fang, O. Mgemezulu, and T. Benson. 2018. Assessment of the 2016/17 Food Insecurity Response Programme in Malawi. IFPRI Discussion Paper 01713. Washington, DC: International Food Policy Research Institute. https://hdl.handle.net/10568/146188

Botha, B., F. Nkoka, and V. Mwumvaneza. 2018. Hard hit by El Niño: Experiences, responses, and options for Malawi. Washington, DC: World Bank. http://hdl.handle.net/10986/30037

Changaya, F., A. Comstock, J. De Weerdt, J. Duchoslav, A. Jamali, F. Kamanga, G. Kumchulesi, and K. Pauw. 2026. Does Malawi's exchange rate regime keep prices low? Evidence and policy implications. MaSSP Policy Note 56. Washington, DC: International Food Policy Research Institute. https://hdl.handle.net/10568/181860

Cockx, L., J. De Weerdt, J. Duchoslav, and J. Nagoli. 2026. Mindset or economics: What explains the dominance of maize in Malawi? MaSSP Policy Note 55. Washington, DC: International Food Policy Research Institute. https://hdl.handle.net/10568/181792

IFPRI. 2017-present. IFPRI Malawi Monthly Maize Market Reports. Washington, DC: International Food Policy Research Institute. https://hdl.handle.net/10568/181752

NOAA. 2026. El Niño / Southern Oscillation (ENSO) diagnostic discussion. 11 June 2026. College Park, MD: National Oceanic and Atmospheric Administration (NOAA), Climate Prediction Center. https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.shtml

ENDNOTES

[1] The onset of the lean season largely depends on how much food was harvested that year. It typically begins around October, but after the 2016 harvest was affected by a very strong El Niño, people needed assistance as early as August.

[2] Domestic prices of fuel could in principle be capped, but economic theory predicts – and recent experience confirms – that it would lead to shortages, incentivize black market retail and smuggling, and ultimately fail to prevent pass-through inflation.

[3] Fuel, transportation services, and transported goods are primarily consumed by urban dwellers, most of whom have relatively high capacity to withstand shocks. Should prevention of urban poverty become a policy priority, cash transfers would be a good tool. They should also be the most efficient means of assisting food insecure rural population during the upcoming lean season. As a region, southern and eastern Africa is on track to produce a surplus of maize this year, which can be expected to be traded to Malawi, be it formally or informally. Maize will therefore be available in markets, but unaffordable for some households – a constraint most efficiently solved by giving them cash. Should, however, a decision be made to assist vulnerable people in kind, the grain for distribution ought to be procured as soon as it is dry enough for storage. The later it is procured, the more expensive it will be. It should also be noted that domestic procurement of maize will not address this year's production deficit, so imports will still be necessary.

[4] Subsidizing the cost of irrigation can make irrigated staple production worthwhile for individual farmers. This may be a legitimate policy objective. However, considering the limited fiscal space in which government operates, such subsidies should only be provided after a careful cost-benefits analysis.

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