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Resilience Building Through Climate-Smart Agriculture in Malawi

ROMY CHEVALLIER

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Executive summary

Agriculture remains the backbone of Malawi's economy, sustaining the livelihoods of over 85% of the population. Yet the sector's heavy reliance on rain-fed, smallholder farming leaves it acutely vulnerable to climate variability. In recent decades, Malawi has faced increasingly frequent and severe extreme weather events, undermining agricultural productivity, deepening food and nutrition insecurity and exacerbating rural poverty. The government's long-term development vision – Malawi Vision 2063 (MV2063) – places climate-smart agriculture (CSA) at the heart of national economic transformation, resilience-building and climate adaptation efforts. In line with this, Malawi's agricultural and climate policies have increasingly recognised CSA as a key pathway to achieving sustainable food systems and reducing emissions. While a growing body of evidence demonstrates the social, environmental and economic benefits of CSA, widespread adoption remains limited. Major constraints include insecure land tenure, limited access to finance, poorly resourced extension services and high upfront investment costs, especially for smallholders. Unlocking the full potential of CSA will require a shift towards longer-term resilience investment, improved access to rural finance and the scaling-up of digital advisory services. These interventions are critical to move CSA beyond isolated pilot projects and embed it within Malawi's broader food security and climate policy agenda.

Introduction

Agriculture contributes approximately a quarter of Malawi's gross domestic product (GDP), provides employment for over 80% of the population and accounts for 90% of merchandise export earnings.[1] The sector plays a central role in sustaining rural livelihoods, ensuring food security and reducing poverty. Smallholders, often farming on plots of less than 1ha, produce over 80% of the country's food requirements, with maize as the staple crop. About 60% of these smallholder farmers are women.

The agricultural sector in Malawi is acutely vulnerable to macroeconomic shocks. As the sector remains heavily reliant on the export of a narrow range of primary commodities, such as tobacco, tea and sugar, farmers and agribusinesses are exposed to price volatility in international markets. Economic analyses highlight that these fluctuations undermine income stability, reduce foreign exchange earnings and constrain the government's ability to import agricultural inputs, such as fertilisers and fuel, thereby compounding production challenges for smallholder farmers.[2] The persistent devaluation of the Malawi kwacha, including a 44% devaluation in November 2023,[3] has further inflated the cost of

1 World Food Programme, Malawi Annual Country Report 2023 – Country Strategic Plan 2019–2023 (WFP, 2023), 10.
2 World Bank, *Malawi Economic Monitor: Powering Malawi's Growth* (World Bank, 2023).
3 International Monetary Fund, *Malawi: Second Review under the Staff-Monitored Program and Request for an Extended Credit Facility*, Staff Report 2023/375 (IMF, November 22, 2023).

imported inputs, eroding purchasing power and weakening the profitability of farming enterprises. This has disproportionately negative impacts on rural livelihoods and food security. These economic pressures are continuing to exacerbate structural vulnerabilities in Malawi's agricultural economy and contributing to a sharp rise in poverty. According to the 2024 World Bank's 'Malawi Poverty and Equity Brief',[4] approximately 70% of Malawians were living on less than $2.15 per day and the country has one of the four highest poverty rates globally. The brief also notes that poverty is higher in rural areas compared to urban areas, with significant disparities in access to services and economic opportunities.

The agricultural sector is also highly vulnerable to climatic shocks and land degradation, contributing to low productivity. Since 1981, Malawi's mean temperature has risen by 0.5°C, and rainfall patterns have become increasingly erratic.[5] Rain-fed maize – occupying 60% of arable land – is projected to experience yield declines of 10–15% by 2050 under high-emission scenarios.[6] Malawi's livestock systems are also under growing stress due to water scarcity and degraded pasture.

The impacts of extreme weather events have intensified in recent years,[7] including Cyclone Idai in 2019 and Cyclone Ana and Tropical Storm Gombe in 2022. In 2023, Cyclone Freddy displaced 563 000 people, destroyed 179 000ha of cropland and caused an estimated $500 million in damages.[8] Subsequent storms – Cyclone Chido (December 2024) and Cyclone Jude (March 2025) – further affected over 20 000 people.[9]

In response to Cyclone Freddy, President Lazarus Chakwera declared a national state of disaster in Malawi's Southern Region.[10] A year later, in March 2024, another state of disaster was declared following an El Niño-induced drought that exacerbated food insecurity across 23 districts.[11] The drought affected around 2 million farming households and damaged over 749 000ha of maize – representing 44% of the national crop area.

The president appealed for international humanitarian assistance and outlined measures to strengthen national long-term food security. These included investments in large-scale irrigation through the Greenbelt Initiative[12] and the expansion of commercial agriculture

4 World Bank, "Malawi Poverty and Equity Brief", (World Bank Group, October 2024).
5 Government of Malawi, Malawi Meteorological Services, *Climate Trend Report* (Malawi Meteorological Services, 2021).
6 Intergovernmental Panel on Climate Change, *Climate Change 2022: Impacts, Adaptation and Vulnerability*, Sixth Assessment Report, Working Group II (IPCC, 2022).
7 Government of Malawi, Department of Disaster Management Affairs, *Disaster Risk Profile: Floods and Droughts* (DoDMA, 2021).
8 World Bank, *Malawi Post-Disaster Needs Assessment: Tropical Cyclone Freddy* (World Bank, 2023).
9 Government of Malawi, Disaster Risk Profile; UN Office for the Coordination of Humanitarian Affairs, *Southern Africa Humanitarian Snapshot* (UN OCHA, March 2025).
10 Government of Malawi, *National Address on the Food Crisis Following Cyclone Freddy*, November 15, 2023.
11 Government of Malawi, *National Disaster Declaration*, March 2024.
12 The Greenbelt Initiative, launched in 2010, is a government-led programme aimed at expanding irrigation capacity and reducing reliance on rain-fed agriculture. By utilising the water resources of Lake Malawi and major rivers, it seeks to increase agricultural productivity, enhance food security and promote rural livelihoods through large-scale irrigation schemes for both smallholder and commercial farmers. The initiative was a central component of Malawi's Growth and Development Strategy III (2017–2022).

through the Mega Farm Programme.[13] These national programmes were complemented by the implementation of a social protection programme, Mtukula.[14]

Building a policy response to support resilience through CSA

Recognising the vast challenges facing the agriculture sector, the government of Malawi has set clear policy commitments to develop technological innovation and to promote agricultural transformation. These are primarily outlined in MV2063 and the National Agricultural Policy (2024), as well as in a suite of climate-related policy frameworks. Together, these policies establish a comprehensive foundation for enabling and scaling transformative agriculture, including the promotion of numerous climate smart agronomic and livestock management technologies.

Malawi's National Agriculture Policy (NAP) defines CSA as 'an integrated approach to managing cropland, livestock, forests and fisheries that increases productivity, builds resilience (adaptation) and reduces or removes GHG emissions'.[15] The CSA concept reflects a broader ambition to better integrate agriculture development within the country's climate response.

While CSA is context-specific, in Malawi it encompasses a wide range of practices (some of which are listed in Table 1). Conservation agriculture has emerged as the most widely promoted and adopted technique, given its effectiveness in enhancing soil health, conserving moisture and boosting yields under increasing erratic rainfall patterns. Conservation agriculture practices – such as minimum soil disturbance (reduced tillage), crop rotation or intercropping (typically maize-legume systems) and permanent soil cover with crop residues – are particularly well suited to Malawi's smallholder farming systems. These practices are increasingly seen as a cornerstone of the country's adaptation and mitigation strategies in agriculture.

13 The Mega Farm Initiative, launched in 2022, aims to strengthen food security by establishing large-scale farms of at least 500ha, operated by cooperatives, private investors or public–private partnerships. It focuses on scaling modern, mechanised and climate-resilient farming practices, including on-site production, processing and aggregation.

14 Mtukula is a government-led Social Cash Transfer Programme that provides unconditional cash grants to the 10% most vulnerable Malawians.

15 Government of Malawi, *National Agricultural Policy 2024* (Ministry of Agriculture, 2024), 16.

TABLE 1 CSA PRACTICES AND APPROACHES IN MALAWI

CSA practice	Description of practice	Examples of projects (non-exhaustive)
Intercropping	Growing two or more crops together to make better use of land and reduce risk	• Total LandCare Intercropping Programme in Kasungu and Salima • Self Help Africa – BETTER Project in Rumphi and Chitipa
Agroforestry	Planting trees among crops or livestock to improve the soil and provide shade	• Coffee Agroforestry Project in Rumphi District by FAO and the Slow Food Coffee Coalition • Macadamia agroforestry in southern Malawi
Conservation agriculture	Using minimal tillage and crop rotation to protect and improve soil health	• Total LandCare Malawi and USAID have projects in several districts, including Mchinji, Kasungu and Dedza • Harvesting Prosperity and Resilience project in the Karonga and Mzimba districts
Integrated pest management	Using a mix of natural and chemical methods to manage pests safely	• USAID Kulima BETTER project in Mchinji district, in partnership with the FAO and the Ministry of Agriculture
Water harvesting and irrigation	• Capturing and storing rainwater for later use in crop production • Adoption of treadle pumps, drip irrigation or solar irrigation systems	• Small-scale reservoirs and infiltration pits in Balaka • Calabash rainwater harvesting systems in Mitundu and Lilongwe
Stress-tolerant varieties	Using crop varieties that can survive droughts or floods	• The International Maize and Wheat Improvement Center developed and distributed drought-tolerant maize varieties in central and southern Malawi • Cowpea drought tolerance breeding
Livelihood diversification and financing	Combining farming with other income-generating sources like poultry or crafts	• Bees for Development • 'Aquapreneurs' in fish farming Mushroom farming • Self Help Africa, Kulima project
Soil and water conservation	Using practices like terracing or mulching to reduce soil loss and retain moisture	• CARE Malawi conservation bunds and tie-ridging techniques in Nsanje and Chikwawa • Integrated soil fertility management in Kasungu and central Malawi
Integrated livestock–crop systems	Combining livestock with crop farming to enhance nutrient cycling and income diversification	• Integrated crop–livestock systems and improved fodder crops in Mzimba and Lilongwe
Farmer field schools (FFS)	Participatory education platforms where farmers acquire CSA knowledge through practical learning	• Kulima BETTER Programme across multiple districts • CIFOR-ICRAF projects in Kasungu, Thyolo and Malunje

CSA practice	Description of practice	Examples of projects (non-exhaustive)
Climate information services	Disseminating seasonal forecasts and early warnings to guide farming decisions	• Malawi's Meteorological Department assisting with early warning. • ENACTS Maproom • Climate Toolkit • Climate Weather Watch System • Drought Monitoring System
Organic soil amendments	Use of compost and manure to restore soil fertility and structure	• Permaculture programmes and compost training supported by Find Your Feet Malawi in Mzimba • Farmer-to-Farmer Agroecology Project in Dedza district
Microfinance and cooperatives	Access to affordable microfinance services for investment in farming enterprises	• Self Help Africa microfinance options

Source: Compiled from Central and Southern Africa Climate Smart Agriculture, *Status of National Climate Smart Agriculture Framework in Malawi*, presentation at Birchwood Hotel, Johannesburg, March 5, 2020; Henry Hunga and J.J. Mussa, "Upscaling Climate Smart Agriculture in Malawi," *Proceedings* 217, no. 23 (2016): 217–23

Left: CAS practices, including improved relay fallows, at Msambamfumu Farmer Field School in Kasungu

Right: Agroforestry initiative promoted by the Farmer Field School in Kasungu

Despite considerable international investment, CSA adoption in low-income countries remains low.[16] While the adoption of CSA practices in Malawi has increased in recent years, it is uneven and generally limited in scale. Higher adoption rates are observed in areas where donor-supported initiatives and targeted extension services have actively promoted climate-smart practices. Notable efforts include projects led by international partners such as the Food and Agriculture Organization (FAO), the World Bank, the Norwegian Ministry of Foreign Affairs and the International Fund for Agricultural Development. The Green Climate Fund (GCF) has also committed over $131 million to initiatives supporting climate resilience in Malawi.[17]

At the national level, however, widespread adoption of CSA remains modest due to several persistent barriers. These include under-resourced extension services, low farmer awareness, limited access to inputs and credit, insecure land tenure and weak market linkages. While pilot and demonstration sites have yielded encouraging results, particularly in terms of improved productivity and resilience, the scaling of CSA across Malawi's diverse farming systems has yet to be fully realised. Nevertheless, recent government efforts are beginning to address these institutional, financial and technical constraints.

Policy and investment priorities driving CSA adoption

Malawi's success in building a more productive and climate-resilient agricultural sector will depend on a broad array of strategies, with CSA serving as a critical pathway to achieving this goal.

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Through renewed political prioritisation and the development of policy and investment frameworks, Malawi is creating the enabling conditions necessary to accelerate the adoption of CSA at scale.

16 Festus O. Amadu, Paul E. McNamara and Daniel C. Miller, "Understanding the Adoption of Climate-Smart Agriculture: A Farm-Level Typology with Empirical Evidence from Southern Malawi", *World Development* 126 (2020): 104692.

17 Green Climate Fund, "Portfolio – Malawi", accessed April 14, 2024, http://www.greenclimate.fund/countries/malawi.

- MV2063 aspires to transform the country into an inclusively wealthy and self-reliant industrialised upper-middle-income nation by 2063.[18] Anchored on three strategic pillars, the vision places agricultural productivity and commercialisation at the centre of economic transformation. Its first 10-Year Implementation Plan (MIP-1) (2021–2030) identifies CSA as a central strategy for achieving agricultural growth and resilience. MIP-1 prioritises investments in CSA practices, including irrigation, drought-tolerant crops and sustainable land and water management. It sets targets for agriculture to maintain a 30% share of GDP by 2030 and aims to broaden export earnings from high-value crops such as oilseeds, legumes and horticulture.[19]
- The Malawi Growth and Development Strategy III (2017–2022), which preceded MV2063, also focused on building a productive, competitive and resilient economy. It emphasised five key priority areas, including agriculture, water development and climate management.[20]
- The National Climate Change Management Policy (2016) is Malawi's overarching climate governance framework. It recognises agriculture as a priority adaptation sector[21] and calls for 'climate-smart, resilient agricultural production systems' to be mainstreamed across development planning.[22]
- Malawi's 2021 Nationally Determined Contribution (NDC, 2021) reinforces CSA as a core adaptation strategy. It promotes a range of climate-smart practices, including drought-tolerant crops, small-scale irrigation, integrated crop–livestock systems, conservation agriculture, improved seed systems, farmer training and crop insurance. These measures aim to build resilience, enhance food security and support smallholder farmers in adapting to climate change. The NDC also commits to a 51% reduction in greenhouse gas emissions relative to business-as-usual by 2040, with 38% of this target expected to be achieved through CSA interventions such as agroforestry, improved livestock management and conservation tillage.[23]
- The National Adaptation Plan Framework (2020–2030) further positions CSA as a central pillar of adaptation and resilience building.[24]
- Malawi's National Resilience Strategy (2018–2030) bridges short-term humanitarian response with long-term development planning. It highlights CSA as a key mechanism

18 Government of Malawi, National Planning Commission, *Malawi's Vision: An Inclusively Wealthy and Self-Reliant Nation, Malawi 2063* (National Planning Commission, 2020).

19 Government of Malawi, National Planning Commission, *Malawi 2063 Implementation Plan (MIP-1)* (National Planning Commission, 2021).

20 Government of Malawi, *The Malawi Growth and Development Strategy III (2017–2022): Building a Productive, Competitive and Resilient Nation* (Government of Malawi, 2017).

21 Government of Malawi, Ministry of Natural Resources, Energy and Mining, *National Climate Change Management Policy* (Government of Malawi, 2016).

22 Government of Malawi, *National Climate Change Management*.

23 Government of Malawi, *Updated Nationally Determined Contribution* (Government of Malawi, 2021).

24 Government of Malawi, Ministry of Natural Resources, Energy and Mining, Environmental Affairs Department, *National Adaptation Plan Framework* (Malawi Environmental Affairs Department, 2020).

for achieving food security[25] and encourages diversification of the agricultural sector and the integration of nutrition-sensitive interventions.

- NAP (2024), aligned with MIP-1, has renewed Malawi's commitment to CSA. It promotes CSA practices across crop, livestock and agroforestry systems and sets a 30% target for the share of agricultural land under sustainable management. The policy also introduces the Mega Farms Initiative, which aims to establish 175 000ha of commercial 'anchor farms' linked to smallholder producers. This model promotes large-scale, climate-resilient production systems that integrate private investment and rural development.[26]

Barriers to CSA adoption

Despite Malawi's extensive policy framework addressing climate change and agriculture, significant challenges persist in the effective implementation and coordination of CSA. For example, fragmentation of responsibilities among ministries and agencies has resulted in overlapping mandates[27] and contributed to the inconsistent application of CSA interventions at the local level. Limited institutional capacity, particularly at district and community levels, has further constrained the provision and delivery of technical support and extension services, essential for scaling CSA practices.

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The lack of harmonisation among existing policies is also cited as a barrier to effective implementation.[28] Misaligned policies can hinder the adoption of CSA practices at the local level and therefore the development of more integrated frameworks that better align agricultural development with climate resilience objectives is recommended. To address this, the recent NAP (2024) aims to strengthen coherence across sectors and promote a more unified approach to CSA planning and delivery.

25 Government of Malawi, DoDMA, *National Resilience Strategy: Breaking the Cycle of Food Insecurity in Malawi 2018–2030* (DoDMA, 2018).

26 Government of Malawi, Ministry of Agriculture, *National Agricultural Policy* (NAP 2024) (Ministry of Agriculture, 2024).

27 World Bank, "CSA in Malawi", accessed July 31, 2025, https://climateknowledgeportal.worldbank.org/sites/default/files/2019-06/CSA%20_Profile_Malawi.pdf.

28 B. Kaptymer, J. Abdulkerim and M. Hule, "Climate Smart Agriculture and Its Implementation Challenges in Africa", *Current Journal of Applied Science and Technology* 38, no. 4 (2019): 1–13.

There are additional barriers that constrain the uptake of CSA practices among smallholder farmers.[29] One of the most challenging is the low level of financial resources dedicated to CSA investments. This results in restricted access to affordable credit for smallholders, underfunded extension services and a disproportionate share of public resources being channelled into input subsidies rather than long-term investments in agricultural resilience. In addition, donor-supported programmes and non-governmental organisations have led most CSA interventions, leading to uneven geographical coverage and short-term project cycles.[30]

Recent analyses of Malawi's agricultural budget show that in the 2024/25 fiscal year, the sector received only 8.5% of the national budget – a decline from 12% the previous year. Of this amount, a large portion goes to the Affordable Inputs Programme (AIP),[31] a government-led flagship agricultural subsidy programme launched in 2020. Its objective is to improve smallholder farmers' access to critical agricultural inputs, mainly fertiliser and maize seed, at subsidised prices to boost local food security and household incomes. The AIP targets resource-constrained smallholders who would otherwise struggle to afford inputs. Administered by the Ministry of Agriculture, the AIP has evolved to incorporate a digital registration system and voucher-based distribution.

While it has contributed to stabilising maize production in some seasons, the programme has also faced criticism due to its high fiscal burden and operational inefficiencies. In addition, practitioners and scholars are debating the effectiveness of the AIP and its predecessor, the Farm Input Subsidy Programme, given the prominence it has received in the country's agricultural policy and national budget (MWK[32] 110 billion [$63 million] in the 2024 budget). Despite this spending, most Malawian farmers fail to meet their household food demand and millions still depend on food assistance.[33] Critics of the AIP also highlight the reduced emphasis on financing for other important services such as research and development, extension services, irrigation infrastructure, insurance and the promotion of climate-resilient and diversified farming systems. This has been seen to hinder investments in long-term resilience-building measures and innovation, which have been deprioritised in favour of short-term input subsidies. The financial commitment in support of the AIP has thus sparked an ongoing policy debate about the need to rebalance agricultural spending to better support Malawi's adaptation and food security objectives. Scholars have also raised concerns about the AIP's ability to address farmer risk related to drought and pests, such as army worm and locusts.[34]

29 FAO, *Climate-Smart Agriculture Sourcebook* (FAO, 2013).

30 International Food Policy Research Institute and Lilongwe University of Agricultural and Natural Resources, *Pathways for Scaling CSA in Malawi* (IFPRI and LUANAR, 2020).

31 Witness Tapani Alfonso and Maxton Tsoka, "Amid Growing Food Insecurity, Malawians Favour Alternatives to Affordable Inputs Programme", (Dispatch 946, Afrobarometer, February 1, 2025).

32 Currency code for the Malawi kwacha.

33 Alfonso and Tsoka, "Amid Growing Food Insecurity".

34 Bob Baulch and Berber Kramer, "Insuring the AIP (Affordable Inputs Programme): The Devil is in the Details", (Policy Brief, International Food Policy Research Institute, 2020).

While the benefits and importance of the national programme are recognised, many farmers are still hoping for additional financial assistance through either direct loans channelled through farmers clubs or cash to buy their own inputs. In Malawi, access to formal credit is limited due to collateral constraints, a limited rural bank presence and other perceived risks by lenders.[35] In addition, CSA practices require upfront investment expenses: in tools, inputs (such as seeds, fertilisers, pesticides and equipment) or infrastructure. For instance, solar-powered irrigation systems or fencing for agroforestry plots often exceed the capital available to smallholder households.[36] Moreover, around 70% of farmland is held under customary tenure (governed by traditional laws and norms, rather than stator regulations), which is often without clear documentation. This creates a barrier to long-term CSA investment, particularly among women, who face added tenure insecurity.[37] Women, despite being the primary food producers, have less access to land, inputs, credit and extension services. CSA uptake is also hindered by the limited inclusion of youth and marginalised groups in decision-making.[38]

Sustainable land management practices adopted by a women's agricultural cooperative in Nkhata Bay, northern Malawi

35 Wezi Salima et al., "The Impact of Credit Access on Household Food Security in Malawi", *Journal of Agriculture and Food Research* 11 (2023): 100490.

36 Neha Durga et al., "Barriers to the Uptake of Solar-Powered Irrigation by Smallholder Farmers in Sub-Saharan Africa: A Review", *Energy Strategy Reviews* 51 (2024): 101294.

37 LANDac, "Securing Women's Land Rights: Scaling for Impact in Malawi", (Working Paper 4, LANDac, 2018)

38 FAO and Government of Malawi, *Gender and CSA Baseline Study* (FAO and Government of Malawi, 2020).

Making the economic case for CSA can also be difficult. The gap in data collection and monitoring and evaluation hinders the ability to track progress and adapt programmes effectively. In addition, unpredictable trade policies, such as ad hoc export bans, distort price signals and discourage investment in commercial value chains linked to CSA, such as legumes or agroforestry products. Poor storage, processing and transport infrastructure further constrain the profitability of diversified cropping systems.[39]

Pathways to scaling CSA interventions

To transition from isolated projects to the widespread adoption of CSA, Malawi must align its policy ambitions with financing, institutional delivery and farmer incentives. These incentives would help to anchor the implementation of the National Agricultural Policy 2024 and to support Malawi's sustainable land management targets. By placing smallholder farmers at the centre of adaptation strategies and targeting the barriers they face, the government can make CSA a key lever in building a resilient agricultural future for Malawi.[40]

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Priority actions to unlock CSA potential

- Attracting additional finance to support CSA research and innovation can result in benefits for households and improve Malawi's overall nutritional outcomes.[41] CSA specialists suggest that future work could focus on farming systems and value chains beyond maize, to include cash crops such as legumes, livestock, poultry, fruit, groundnuts and fuelwood alternatives. Investment is also needed to support localised data systems, including digital climate services, soil information and pest alerts, to enhance decision-making and improve CSA adoption rates.[42] This includes access to timely, site-specific agronomic and climate data, which is currently lacking in Malawi.

39 Kaniak Kato et al., "Cowpea, Sesame, and Sorghum Value Chain and Market Systems Analyses in Malawi: Facilitating Agricultural Transformation to Unlock Opportunities for an Agriculture-Led, Sustainable Development Path Towards Malawi 2063", (Paper, Conference on Cowpea, Sesame and Sorghum Value Chain and Market Systems Analyses in Malawi, Lilongwe, January 2025).

40 Government of Malawi, National Planning Commission, *MIP-1*.

41 A. Belay et al., "Does Climate-Smart Agriculture Improve Household Income and Food Security? Evidence from Southern Ethiopia," *Environment, Development and Sustainability* 26 (2024): 16711–38.

42 World Bank, *Digital Climate Advisory Services for Agriculture* (World Bank Group, 2022).

- Although rooted in Malawi's National Climate Change Investment Plan (2013–2018), the National Climate Change Fund (NCCF) remains institutionally dormant due to limited budgetary space, administrative bottlenecks and gaps in inter-ministerial coordination. Reviving the NCCF, or creating another similar financial facility, potentially with co-financing from bilateral development partners, would enhance ownership, reduce transaction costs and provide a platform for pooled CSA finance.[43] In addition, a national CSA facility using blended finance instruments, such as first-loss guarantees or concessional credit lines, could de-risk private investment in smallholder systems.[44] Such a facility could also support the development of new value chains for CSA-relevant commodities and cash crops.
- Research has shown that insurance improves farmers' ability to recover from crop losses and encourages greater investment in farms. The AIP could consider combining with rainfall index insurance, which triggers payouts when rainfall (measured by meteorological stations or satellite imagery) is so extreme that it could result in crop damage, or area-yield index insurance, which triggers payouts when average yields in a given area (often measured through crop cutting) fall below a pre-agreed threshold.[45] The cost of this insurance could, for example, be reduced when farmers buy stress-tolerant seed varieties.
- While Malawi is eligible to access the GCF, it lacks an accredited National Implementing Entity (NIE) and instead accesses funding through internationally accredited entities. Several factors contribute to the absence of an NIE. These include limited institutional capacity to meet stringent fiduciary safeguards, environmental and social safeguards and gender requirements; insufficient technical expertise in proposal development and monitoring; and a lack of sustained investment in readiness and accreditation support. Strengthening national institutions to pursue direct accreditation, such as the Environmental Affairs Department under the Ministry of Natural Resources and Climate Change, or selected academic and development institutions, can enhance Malawi's climate finance autonomy and facilitate more responsive, locally driven climate action. Since 2022, the University of Malawi has been engaged in discussions to become the country's GCF-accredited entity, leveraging its technical capacity and institutional infrastructure. However, these efforts are ongoing and no national appointment has yet been made.
- The full implementation of the Customary Land Act, 2016, including the issuance of gender-equitable land certificates, would encourage long-term investment in soil fertility, agroforestry and irrigation infrastructure.[46] Secure tenure can also unlock access to credit and eligibility for ecosystem service payments or carbon finance schemes.

43 UN Development Programme, Malawi, "Climate Finance Readiness Assessment", (UNDP, 2020).
44 International Fund for Agricultural Development, *Innovative Financing Mechanisms for Smallholders* (IFAD, 2021).
45 Baulch and Kramer, "Insuring the AIP".
46 Government of Malawi, *Customary Land Act Implementation Report* (Government of Malawi, 2023).

- Predictable trade policies, including clearer rules on export restrictions, are critical to enable investment in CSA-linked crops. In addition, strengthening aggregation, storage, processing and market access for legumes, fruit trees and dairy products would improve the economic case for CSA adoption.
- Embedding CSA indicators into the revised NAP and developing a national soil carbon methodology would support harmonised monitoring, learning and evaluation and enable access to results-based financing through voluntary carbon markets.

In a context where formal extension services are under-resourced and have limited reach, innovative delivery mechanisms such as FFS have proven to be vital enablers of CSA adoption

- The effective uptake and scaling of CSA practices in Malawi depends not only on the availability of technologies and knowledge, but also on the mechanisms through which these are disseminated to farmers and the avenues utilised to build capacity. In a context where formal extension services are under-resourced and have limited reach, innovative delivery mechanisms such as FFS have proven to be vital enablers of CSA adoption.[47] FFS offer a participatory, group-based approach that allows farmers to learn and experiment with CSA practices. The Kulima programme, operational between 2018 and 2023, trained thousands of farmers on CSA practices through FFS.[48] Lessons learned from these hands-on, grassroots projects,[49] for example related to the formation of cooperatives and the use of digital advisory services, can highlight enabling conditions and be shared on common platforms. These complement extension efforts by fostering social learning[50] and promoting locally adapted CSA adoption. Investing in these delivery mechanisms is essential not only for building farmer capacity but also for reinforcing the institutional foundations of climate resilience in the agricultural sector. Strengthening and scaling such participatory approaches should therefore be considered a policy priority in Malawi's agricultural transformation agenda. Many entities are also advocating for the formal institutionalisation of the FFS approach in the national extension system.[51]

47 FAO, *Farmer Field Schools for Climate Change Adaptation and Resilience* (FAO, 2021).
48 FAO, *Final Evaluation of the Kulima Programme in Malawi* (2018–2023) (FAO, 2023).
49 FAO, "Global Farmer Field School Platform", accessed July 4, 2025, https://www.fao.org/farmer-field-schools/en/.
50 World Bank, *Enhancing Agricultural Extension Systems in Sub-Saharan Africa* (World Bank Group, 2022).
51 EU and Government of Malawi, "KULIMA – Promoting Farming in Malawi: Revitalizing Agricultural Clusters and Ulimii wa Mdandanda through Farmer Field Schools (FFS)", Press Release, May 19, 2022.

CSA technologies and practices promoted at the Kasungu Farmer Field School in central Malawi

Conclusion

Malawi's agricultural transformation will depend not only on bold policies and high-level initiatives but also on how well the country can translate these into inclusive, climate-resilient outcomes. CSA is a critical pathway, but its success hinges on scaling approaches that reflect the realities of Malawi's smallholder farmers. With supportive policies already in place, the challenge now lies in effectively implementing and scaling CSA practices nationwide.[52]

As the country navigates its development ambitions under MV2063, CSA must evolve from fragmented pilots into a coordinated national strategy rooted in equity, local knowledge and resilience. To do so, targeted reforms are essential – particularly in sustainable agricultural finance, land tenure, extension services and data systems – to create an enabling environment for widespread CSA adoption. While large-scale initiatives such as the Greenbelt Initiative and the Mega Farm Programme offer promising avenues

52 FAO, *Scaling Up Climate-Smart Agriculture in Malawi: Lessons Learned* (FAO, 2020).

for boosting national agricultural productivity and enhancing food security, they must align with smallholder priorities, ensuring that the pursuit of productivity does not deepen existing inequalities. These programmes should be leveraged to complement smallholder systems through capacity building, inclusive design, decentralised implementation and safeguards for equity and access.

Achieving this vision requires sustained investment in CSA research, innovation and dissemination, particularly at the local level. Public and private finance must support interventions that build long-term resilience, enable farmer-led adaptation through training and capacity building and promote climate-informed decision-making.[53] Strengthening the transfer of knowledge through extension services, especially those reaching women, youth and marginalised communities, will be vital for building adaptive capacity across diverse agroecological zones. Equally, CSA must be integrated into broader resilience-building frameworks, including early warning systems, disaster risk management and social protection mechanisms, to further protect smallholders from economic and climate-induced shocks.

Malawi's path to CSA must be collaborative, locally grounded and strategically inclusive. By elevating smallholder voices, addressing structural barriers and ensuring that climate-smart solutions are accessible, affordable and context-specific, CSA can serve as both a development imperative and a climate adaptation strategy, anchoring a just, sustainable agricultural future for Malawi.

53 IFAD, *Transforming Food Systems through Climate Resilience* (IFAD, 2021).

Author

Romy Chevallier

is a Senior Climate Change Researcher with the South African Institute of International Affairs (SAIIA). She has nearly 20 years of experience in policy research to build climate-resilient African economies, advising various African government departments and agencies. She holds a master's degree in international relations from the University of the Witwatersrand.

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SAIIA's policy insights are situation analysis papers intended for policymakers, whether in government or business. They are designed to bridge the space between policy briefings and occasional papers.

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Jan Smuts House, East Campus, University of the Witwatersrand
PO Box 31596, Braamfontein 2017, Johannesburg, South Africa
Tel +27 (0)11 339–2021 · Fax +27 (0)11 339–2154
www.saiia.org.za · info@saiia.org.za