

Climate-smart agriculture measurement, reporting and verification in the Republic of Malawi



KEY MESSAGES

- Malawi's economy and food security are heavily dependent on the agricultural sector, making the country particularly vulnerable to climate change;
- Although climate-smart agriculture (CSA) programmes are being implemented, progress is not being tracked or reported, which prevents these programmes from getting the recognition and funding they need to scale up and be sustainable;
- Creating effective monitoring and evaluation (M&E) systems will allow stakeholders to track progress in CSA, improve the effectiveness of programming, and justify increased access to funding.



Photo credit: Charlie Pye-Smith

Introduction

Agriculture is critical to Malawi's future. It accounts for 80% of employment, more than 80% of foreign exchange earnings, and 64% of total income among the rural population. Due to the importance of agriculture to livelihoods and the economy, Malawi is among the countries most at risk from climate change and variability. Climate-smart agriculture (CSA) has been proposed as one solution for Malawi, and the country's first CSA programme was initiated in 2014. However, outcomes from activities specifically identified as CSA or projects with similar goals have not yet been tracked or reported on. The consequence is that the contribution of these actions to the achievement of national development and climate goals are not accounted for, and CSA is not explicitly integrated into budgetary processes or being used to leverage additional investments in rural development and climate resilience.

This Malawi Climate-Smart Agriculture Measurement, Reporting and Verification (MRV) Profile ('The Profile') seeks to start the process of improving this situation. To produce the Profile, a team comprising staff from Malawi's Ministry of Agriculture and the World Agroforestry Center (ICRAF) interviewed about 30 representatives of key government, non-governmental, research and private sector organizations, including various departments within the Ministry of Agriculture, Irrigation and Water Development (MoAIWD), the Ministry of Finance, the Ministry of Natural Resources, Energy, Mining and Environment Affairs, development partners, and research organizations. The team specifically aimed to take a bottom-up approach to understanding monitoring and evaluation (M&E)¹ in the country.

The Profile's goal is to document stakeholders' information needs, to explore how M&E of CSA can build on and align with existing M&E systems in the country,

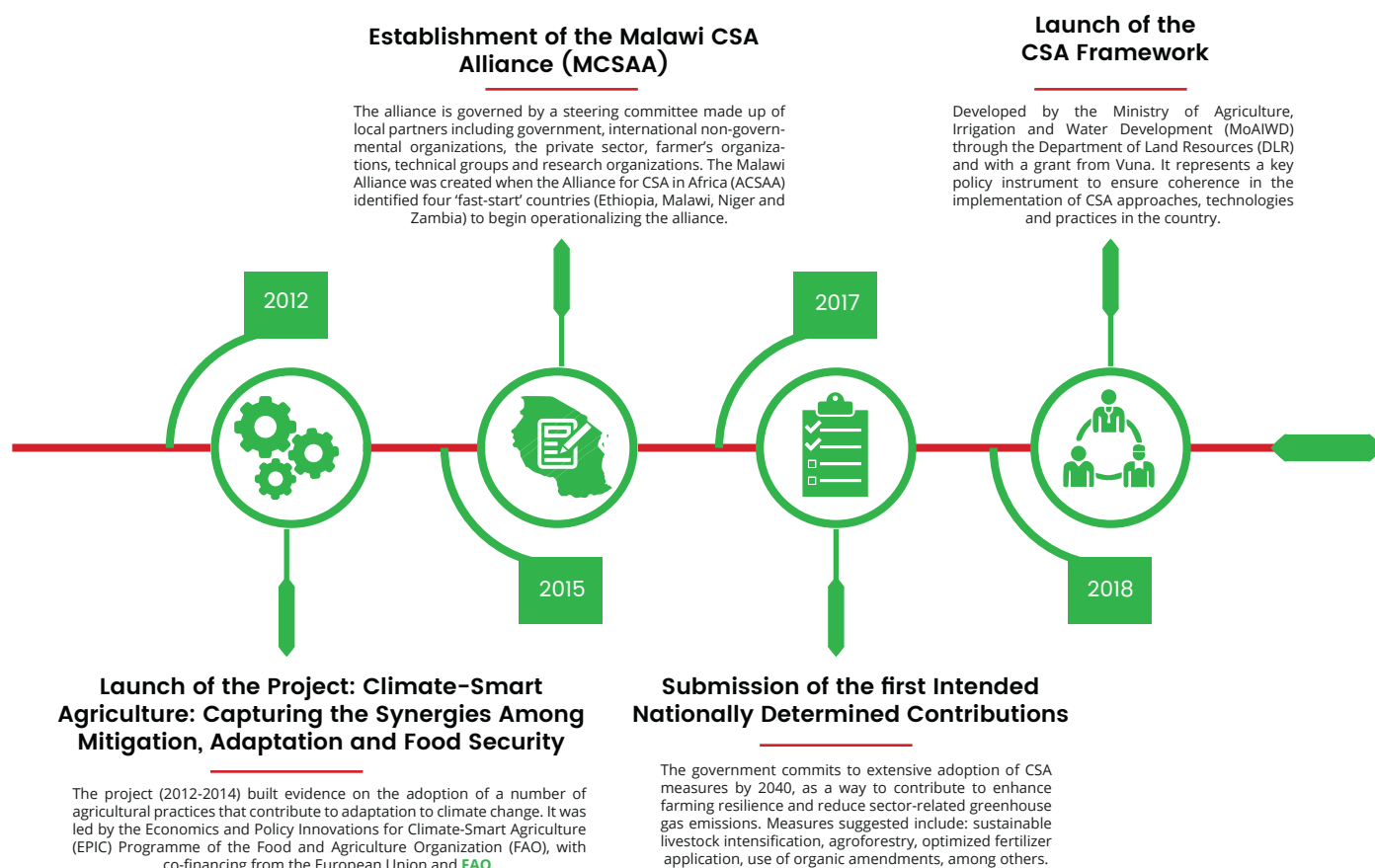
¹ Measurement, reporting and verification (MRV) is a term used within the United Nations Framework Convention for Climate Change (UNFCCC) referring to information flows on countries' progress in meeting the objectives of the convention. National statistical systems and M&E systems are the basis for international MRV. Since most stakeholders' information needs refer to domestic policy processes, this profile uses the term M&E, which most stakeholders are more familiar with.

and to lay out a path toward strengthening M&E to meet stakeholders' needs. Once proper systems are in place, stakeholders will be able to transparently track progress in CSA, improve the effectiveness of programming, and justify increased access to funding.

The Profile is written for three audiences: (i) government institutions seeking to improve M&E and obtain more

comprehensive and accurate data at reasonable costs; (ii) development partners targeting support to specific capacity needs; and (iii) CSA programmes collecting data on indicators relevant to national objectives and needs. The Profile is also relevant more broadly to actors working in the agricultural development and environment sectors who seek insight on M&E of development initiatives.

Figure 1. Selected major Climate-Smart Agriculture (CSA) events in Malawi.



Policy and institutional context

Malawi has at least 10 policies related to CSA, ranging from the National Land Resources Management Policy and Strategy (2000) to the National Irrigation Policy (NIP) (2016). The most recently developed and relevant policy tools, the Malawi CSA Framework and the Malawi's Growth and Development Strategy III (MGDS III) (2017-2022), contribute to the country's efforts to fulfill commitments under the Comprehensive Africa Agriculture Development Programme (CAADP), the 23rd Ordinary African Union Assembly Decisions and Declaration (**Malabo Declaration**), the 2030 Agenda on Sustainable Development Goals (SDGs), the Southern African Development Community Regional Indicative

Strategic Development Plan (SADC RISDP) and the Common Market for Eastern and Southern Africa Treaty, among others. However, stakeholder consultations for this study revealed that the CSA Framework is less known among key actors in the country because it is a very new document.

There are many other policy initiatives that are relevant for CSA action in Malawi (table 1 and **annex 1**). Each sets out various measures relevant to at least one of the CSA pillars. The CSA Framework, however, is the only document that makes explicit links to CSA. Except for MGDS III, NIP and the National Climate Change Management Policy, the National Agriculture Policy (NAP) and the National Forest Policy (NFP), the policies

Table 1. Policies relevant to CSA action in Malawi.

YEAR	POLICY	ARE ACTIVITIES PROMOTED IN THE POLICY RELEVANT TO CSA PILLARS?			DOES THE POLICY PROMOTE CSA MEASURES?	IS CSA MENTIONED?	DOES THE POLICY / PROGRAMME HAVE AN M&E SYSTEM	IS THE POLICY RELEVANT TO M&E OF CSA ACCORDING TO STAKEHOLDERS
		PRODUCTIVITY	RESILIENCE	MITIGATION				
2018	Malawi National Climate-Smart Agriculture Framework (CSAF) CLIMATE-SMART AGRICULTURE (CSA)	Yes	Yes	Yes	Yes	Yes	No	Yes
2017	Malawi's Growth and Development Strategy III (MGDS III) (2017-2022) (DRAFT) RESILIENCE; ECONOMIC GROWTH	Yes	Yes	Yes	Yes	Partially	Yes	Yes
2016	National Climate Change Management Policy (NCCMP) CLIMATE CHANGE; GREEN ECONOMY	Yes	Yes	Yes	Partially	Partially	Yes	Partially
2016	National Agriculture Policy (NAP) GROWTH; FOOD SECURITY & NUTRITION	Yes	Yes	Partially	Yes	Partially	Yes	Partially
2016	National Irrigation Policy (NIP) ECONOMIC GROWTH; PRODUCTIVITY	Yes	Yes	Partially	Yes	Partially	Yes	Partially
2016	National Forestry Policy (NFP) CONSERVATION; SUSTAINABLE DEVELOPMENT	Yes	Yes	Yes	Partially	Partially	Yes	Partially
2015	Malawi Nationally Determined Contribution (INDC) CLIMATE CHANGE; ADAPTATION; MITIGATION	Yes	Yes	Yes	Yes	Partially	Partially	Partially
2015	Malawi National Gender Policy (NGP) SOCIOECONOMIC DEVELOPMENT	Yes	Yes	Partially	Partially	Partially	Partially	Partially
2013	Malawi National Climate Change Learning Strategy (NCCLS) CLIMATE CHANGE	Partially	Yes	Yes	Partially	Partially	Yes	Partially
2000	Malawi Vision 2020 ECONOMIC DEVELOPMENT AND GROWTH	Yes	Partially	Partially	Partially	Partially	Partially	Partially

■ yes / fully relevant
 ■ partially / not always
 ■ no / not at all

and plans identified either lack specific M&E plans or their M&E plans have been only partially developed. It is important to note, however, that none of the M&E frameworks listed in table 1 were mentioned by stakeholders interviewed for this study.

Responsibilities to implement and monitor these policies rest with various ministries, departments and agencies in the country, including agriculture-sector lead ministries. MoAIWD's Land Resources Department (DLR) is responsible for coordination of CSA matters.

The Department of Agricultural Planning in MoAIWD is responsible for the implementation of the NAP M&E strategy, in collaboration with the M&E Technical Working Group (represented by the National Statistical Office [NSO]), the Ministry of Industry and Trade (MoIT), and the Ministry of Lands, Housing and Urban Development (MoLHUD). Broadly, climate change issues and responses in Malawi are coordinated through ministries, outside stakeholders, and donor and expert working groups ([annex 2](#)).

Roles, needs and capacity

The analysis identified 11 stakeholders in CSA, of whom five had a high influence on implementation of the national CSA Framework and a high level of interest in M&E (annex 3). These five mainly represent government and research institutes who use M&E for making policy, providing support or finance, planning, guiding implementation and reporting (annex 4).

Donors, research institutes and NGOs also use information from M&E systems for a range of purposes, including tracking project progress and setting up new interventions (annex 5). High-quality M&E therefore serves a number of purposes for government and other stakeholders.

Needs for CSA M&E

The consultations in Malawi involved government and NGO representatives. Stakeholders identified 21 information needs that should be covered through M&E (annex 5). These needs have been met to varying degrees:

Fully met needs: The information already available through M&E systems is scarce. Only one specific need (out of 21) expressed by the NGO stakeholder group (Concern Worldwide, Catholic Relief Services [CRS] and Total LandCare) is fully met, and it refers to changes or trends in productivity (e.g., tonnage of crop produced per hectare) due to CSA-related interventions (annex 5).

Table 2. Climate-Smart Agriculture (CSA) information needs that are currently not met by existing M&E systems.

Domain	Suggested indicators to cover unmet information needs	Stakeholders interested	Benefits of having better data from M&E
Inputs	Links between CSA and water resource management and development	Department of Water Supply Services (DWSS) of the Ministry of Agriculture, Irrigation and Water Development (MoAIWD);	Inform policy-making and programming
	Type of CSA technologies, practices and tools for water resource management		Design locally relevant solutions
	Potential CSA interventions for the ministry to invest in	Civil Society Agriculture Network (CISANET);	Strategic planning and investment
	Budget disbursed for CSA activities at district and national level	World Vision	Track financing of CSA
Activities	Dissemination of CSA practices related to water resource management at district level	World Vision	Local (district) planning and coordination of activities
	Dissemination of CSA practices at all levels (district, national)	Department of Irrigation Services (DIS) of the Ministry of Agriculture, Irrigation and Water Development (MoAIWD);	Planning and coordination of activities
		Department of Agricultural Research Services (DARS) of the Ministry of Agriculture, Irrigation and Water Development (MoAIWD);	
	United Purpose		
Outcomes	Changes in biophysical outcomes (e.g., soil carbon)	Concern Worldwide (CWW);	Inform programming
	Changes in farmers' climate resilience as a result of CSA practices	Catholic Relief Services (CRS);	Evidence-based planning
		Total LandCare (TLC)	
	Changes in farmers' climate resilience as a result of CSA practices for water resource management	Department of Water Supply Services (DWSS);	Evidence-based planning
	Changes in food security as a result of CSA practices for water resource management	Civil Society Agriculture Network (CISANET);	Evidence-based planning
	World Vision		
Effects of climate variability on availability of drinking water for livestock		Department of Animal Health and Livestock Development (DAHLD) of the Ministry of Agriculture, Irrigation and Water Development (MoAIWD);	Consolidated database and information
		Cooperazione Internazionale (COOPI);	
		GOAL-Malawi	

Partially met needs: Only 43% of identified information needs (9 out of 21) are partially met (annex 5). In most of these cases, information is available but is not as useful as it could be or there is not enough staff

to collect it (see capacities section below). Both project-level M&E systems and ministry-level M&E systems were cited as potential locations where the data could be collected.

Unmet needs: Roughly half of the information needs (11 out of 21) are currently entirely unmet (see table 2). Government stakeholders primarily need M&E for domestic policy purposes, so improvements in the availability of data on CSA could directly lead to policy improvements. These unmet needs refer to inputs (e.g., available CSA finance or CSA-related knowledge), activities (e.g., dissemination of CSA practices) and outcomes (e.g., effects of CSA practices and technologies on resilience and food security).

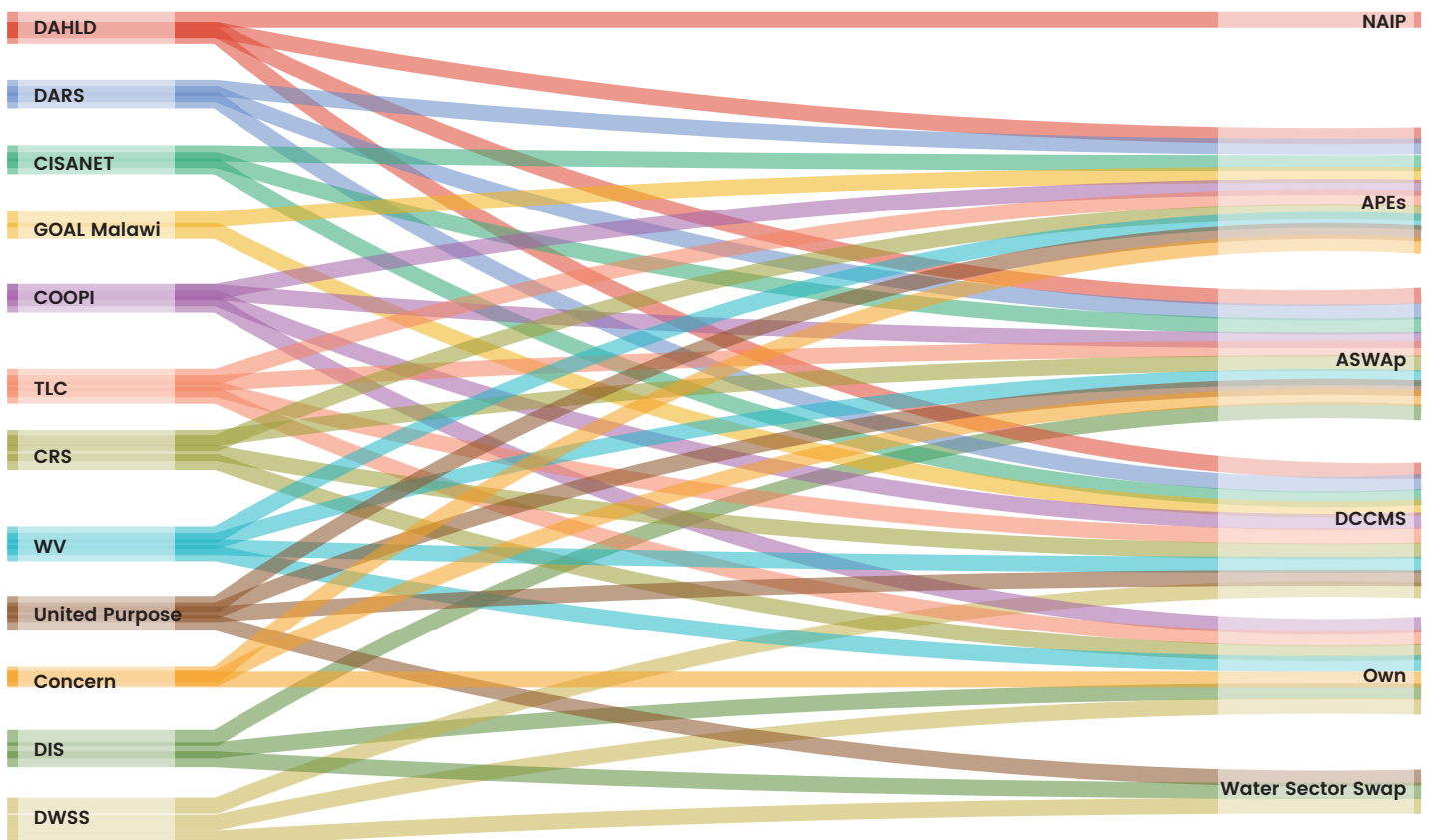
The needs and concerns of the stakeholder groups differed. NGO stakeholders (Concern Worldwide, Catholic Relief Services, Total LandCare) carry out monitoring and evaluation activities for their various donor-funded programmes. NGOs were keen to ensure that data is trustworthy and that it reflects impacts on the ground. Three departments from the MoAIWD also voiced different needs. The Water Resources Management and Development Department currently does not carry out much data collection but believes that, with increased awareness, they could do more in the future and is interested in seeing how CSA practices would contribute to water resources availability and utilization. The Department of Irrigation Service, by contrast, has an M&E system related to the Agriculture Sector Wide Approach (ASWAp), but expressed a need to keep

improving and harmonizing the indicators. The Department of Animal Health and Livestock Development, which is active in monitoring because of the effects of climate change on livestock productivity, highlighted the potential for collaboration among departments. Stakeholders across the board indicated that the existence of a sector-wide M&E system would help ensure that system performance continues to improve.

Existing systems for M&E of CSA

The stakeholders identified seven different tools currently used for tracking progress and outcomes (figure 2). These include, among others: Agriculture Production Estimates Survey (APES), Agriculture Sector Wide Approach (ASWAp), National Agricultural Investment Plan (NAIP), Donor Committee on Agriculture and Food Security (DCAFS), Department of Climate Change and Meteorological Services (DCCMS), Water Sector Wide approach (WSWAp) and institution-level M&E systems. Of these, government stakeholders highlighted APES, ASWAp, DCCMS and WSWAp as having the most promise for CSA M&E. NGOs highlighted both government systems and their own systems.

Figure 2. The relationship between stakeholders and M&E systems. Each line represents an interview where a CSA stakeholder (left) mentioned using an M&E system in the country (right).



Acronyms:

APES = Agricultural Production Estimates; ASWAp = Agriculture Sector Wide Approach; CRS = Catholic Relief Services; CISANET = Civil Society Agriculture Network; CWW = Concern Worldwide; COOPI = Cooperazione Internazionale; DAHL = Department of Animal Health and Livestock Development; DARS = Department of Agricultural Research Services; DCCMS = Department of Climate Change and Meteorological Services; DIS = Department of Irrigation Services; DWSS = Department of Water Supply Services; NAIP = National Agricultural Investment Plan; TLC = Total Land Care; WSWAp = Water Sector Wide Approach; WV = World Vision.

Agriculture Sector Wide Approach (ASWAP) M&E system is used to monitor the US\$215 million World Bank investment in Malawi from 2017. The project's goal is to harmonize agriculture-sector development with many stakeholders, emphasizing multidisciplinary and participatory approaches. The ASWAp results framework uses 26 indicators grouped into six categories: food security and risk management; commercial agriculture and market development; sustainable land and water management; technology generation and dissemination; institutional strengthening and capacity building; and cross-cutting (mainstreaming of gender and HIV-AIDS). During design and development, specific attention was paid to certain indicators that were previously selected by ASWAp for their contribution to MGDS III. The MGDS III M&E framework has outcome and impact indicators that are reviewed periodically, and performance and output indicators reviewed annually. Data quality for ASWAp is ensured routinely (monthly and quarterly) through supervision (by M&E planning group) and triangulation with previous results. Since the ASWAp system is already in use, it could become a sustainable system into which CSA indicators could be incorporated. Stakeholders, however, have indicated capacity challenges such as continued reliance on paper-based forms, insufficient technical knowledge among staff members, and insufficient budget.

National Agricultural Policy (NAP) M&E. This system is used by the Ministry of Agriculture, Irrigation and Water Development (MoAIWD) and intends to leverage data systems of government development partners, civil society, the private sector and research intuitions. It relies on ASWAp but also expands it. The responsibility for NAP M&E falls to the Department of Agricultural Planning within MoAIWD, which will collaborate with a Technical Working Group on M&E that includes the National Statistics Office (NSO), the Ministry of Industry and Trade (MoIT) and the Ministry of Lands, Housing and Urban Development (MoLHUD). Technical assistance is also provided by a number of research institutions, and implementation is supported by a number of donors.

One of the goals is to modernize M&E, making it more efficient. The NAP has a comprehensive list of performance indicators related to: agricultural extension (e.g., ratio of extension service workers to farmers); agricultural innovation systems for research and technology generation and dissemination (e.g., agricultural technology adoption index); investments in CSA and sustainable land and water management (e.g., average farm yields); investments in irrigation schemes (e.g., area under irrigation); private sector investment (e.g., value of investment); access to financial services (such as credit and insurances); mechanisation of farming; agricultural market development and agro-processing; food and nutrition security; empowerment of youth, women and vulnerable groups (e.g., employment, ownership of productive assets); institutional coordination (e.g., capacity and institutional efficiency index), among others.

Towards a national integrated system for CSA MRV

The Malawi CSA Framework lays out a vision for a CSA MRV:

“(1) Develop and test appropriate CSA MRV indicators to assist in tracking the impact of CSA interventions (adaptation, resilience and mitigation); (2) Ensure that CSA MRV indicators are integrated into the national and sector monitoring and evaluation frameworks; (3) Build the capacity for participatory M&E on the CSA MRV indicators to enable farmers [to] participate in the tracking of the different CSA approaches that they have or wish to adopt; and (4) All CSA players through existing decentralized district level government machinery to report CSA activities to DLR in MoAIWD for upward reporting to central planning and development agency.”

With this vision as a point of departure, the types of actions necessary to create an integrated CSA MRV system become clearer. In general, most actions can be categorized into work on indicators, M&E systems, capacity building, and finance. Key action areas emerging from stakeholder consultations would help to create effective systems by deciding on a limited set of key indicators that can be monitored; creating a database that could be integrated with existing systems to track progress; building the human capacity to collect the required data and operate the M&E systems; and securing reliable sources of financing so that the crucial information can be collected and analyzed (figure 3).

Indicators: Stakeholders identified 21 specific indicators to inform decision-makers about progress in CSA. Suggested indicators included the number of CSA techniques and practices, as well as outcome indicators, such as the percentage increase in water levels. These indicators could be integrated with those already in use by projects or government systems (e.g., MGDS III). There is a need to focus on a limited set of indicators for which: (i) the data generated can directly contribute to better decision-making and implementation; (ii) multiple stakeholders' information needs are met; and (iii) capacities and feasibility of collecting reliable data are high. As illustrated in table 2, the selected indicators could be structured around a results framework to provide information on inputs (funding, institutions engaged, knowledge, production conditions) progress of activities (projects and promotion activities), outputs (adoption) and outcomes of CSA action in the country (evidence of changes in productivity, food security, resilience and mitigation).

M&E system: A number of M&E systems and frameworks are already operational in programming from both the Malawi government and development partners. Many of the M&E systems either build upon each other or intend to do so. Interoperability is a key first step in designing a coherent M&E system. The flows of information and gaps in roles and responsibilities could be elucidated clearly and specifically for CSA

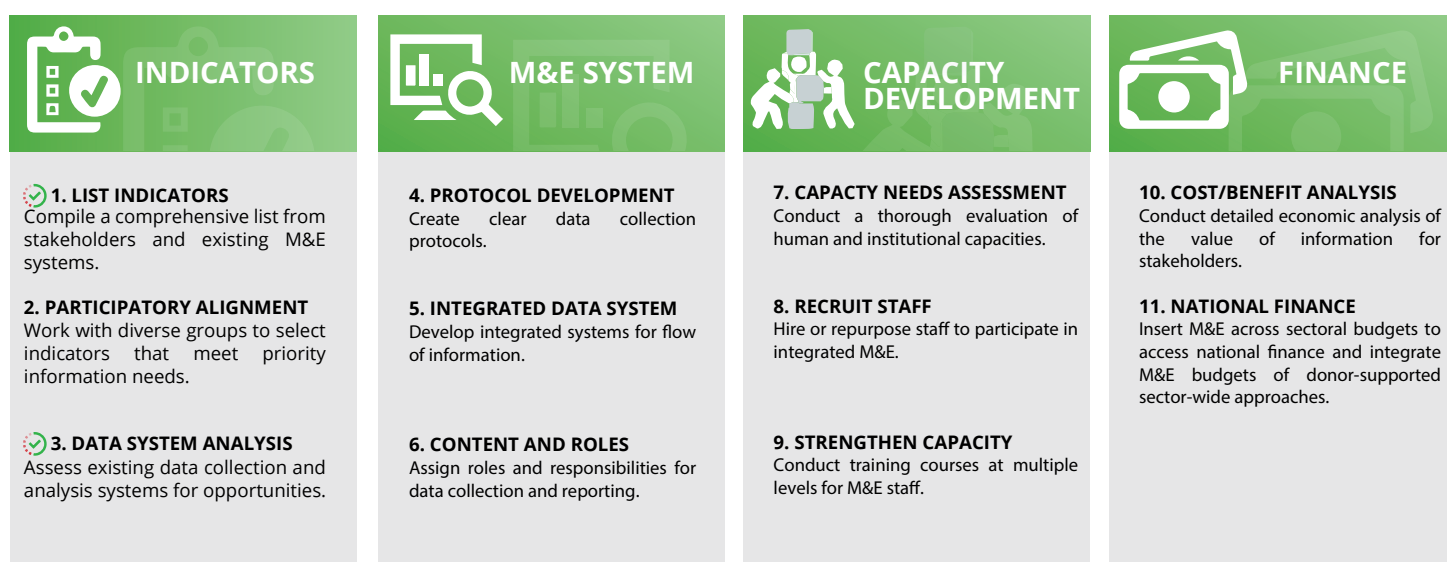
indicators. It is not yet clear how M&E systems of government institutions outside the Ministry of Agriculture operate and how CSA M&E can both benefit from and contribute to the other systems. Additional assessment is needed in order to better understand the intersection with other M&E systems.

Capacity building: Capacity building was repeatedly cited as a critical need for developing M&E. This refers to the human capacity to collect field data and conduct record keeping and reporting, as well as to technical capacity such as the availability of database software and computers. Because of staff turnover and the need to increase staff to keep up with higher demand for data, capacity building needs a more prominent role. This may be particularly true when systems become streamlined and modernized. The implementation of new tools such as tablets and phones may require

additional training. Assessment of the various stakeholders' capacity to understand and carry out their roles and responsibilities will be a key step towards the design of an effective and sustainable CSA M&E system.

Financing: M&E activities are often relatively poorly funded. This jeopardizes the quality of data because the amount of information requested often exceeds what is financially feasible. In some cases, data collected are not used in any particular decision-making process. Prioritizing the information—for instance, according to the indicators noted above—could help in weighing the costs and benefits, perhaps leading to increased funding or to a decision to stop collecting certain information. Further pooling of funding, in order to ease access to different and complementary sources, may help ensure key information is collected over time.

Figure 3. Steps toward nationally integrated CSA MRV in Malawi. Activities can run simultaneously.



Notes: = Steps where some progress is being made.

Outlook

Malawi already has a vision for CSA M&E. The question is how to put that vision into practice. M&E has clear roles to play in continually improving CSA promotion in the country. Expected benefits expressed by stakeholders included: feedback on the effectiveness of CSA interventions; improving the evidence base for planning and programming; targeting and prioritization of investments; and improved budgeting.

This assessment has highlighted that there are many existing relevant frameworks in the agricultural sector (AWASp, NAP, etc.) and that, for the most part, these programmes have attempted to learn from and build upon each other's work. However, there were some significant gaps in our assessment. In particular, the range of government stakeholders that we were able to reach in the time available for the study was limited.

This fact likely resulted in an oversimplification of the challenges as well as an underestimation of the opportunities. Nevertheless, this Profile provides a first step in understanding and moving toward a system that meets national stakeholders' needs for M&E of CSA and outlines a roadmap for future improvements to achieve this goal.

Acknowledgements

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