CHAPTER 2

Seven Years of Implementation of the Malabo Declaration: Making Sense of the Malabo Theory of Change

John M. Ulimwengu, Wondwosen Tefera, and
Augustin Wambo Yamdjeu

Introduction

Adopted by the African Union heads of state and government in 2014, the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods provides the direction for agricultural growth and transformation on the continent. One of the seven commitments of the Malabo Declaration is the pledge by African heads of state and government to hold themselves accountable for actions and results against targets set out in the declaration. The commitment to mutual accountability is operationalized through a continentwide Biennial Review (BR) to monitor and report on progress made in achieving all the Malabo Declaration goals and targets.[1]

The African Union Commission (AUC) and the African Union Development Agency–New Partnership for Africa's Development (AUDA-NEPAD), in collaboration with the regional economic communities (RECs) and with technical assistance from several partners,[2] are leading the BR process. They are spearheading the development of several components:

1. Technical guidelines that profile indicators utilized for assessing the progress made in achieving the seven Malabo commitments.
2. A country performance reporting template, tailored to each country, which serves as a structured tool for collecting data and presenting updates on country progress.
3. A technical note on the scorecard presenting the methodology adopted to benchmark and evaluate country progress toward meeting the Malabo commitments and targets. This note distinguishes between "on-track" and "not-on-track" progress statuses for each Malabo commitment and also computes an aggregate score reflecting the nation's overall compliance with all the specified targets.
4. An e-Biennial Review (eBR) platform, which serves as an interactive repository for BR data. This comprehensive tool streamlines the collection, analysis, storage, accessibility, and reporting of data at various levels, from individual countries to regional and continental perspectives.

The first BR process, report, and Africa Agriculture Transformation Scorecard (AATS)[3] spotlighted lessons and challenges that offered room for improvement in upcoming BRs. For instance, the process faced delays in starting, exclusion of important stakeholders from review and dialogue, limited awareness of the BR process in some countries, and insufficient technical and financial resources. These challenges extended to organizing workshops for validating data before sending them to RECs. The assessment also highlighted data-related issues and capacity constraints that many African nations encounter. Specifically, the report pointed out problems such as low data quality, missing information, unclear indicators, and data not available in required formats.

The absence of data posed a significant hurdle, as countries submitted reports with gaps in observations for various BR indicators. Moreover, countries struggled with inadequate technical skills for data collection, monitoring and evaluation, and analysis, along with ineffective protocols for sharing data among different government ministries. The report also acknowledged limitations in the BR performance scorecard methodology, particularly in choosing suitable indicator weights and assigning a zero score due to missing data from reporting countries.

The purpose of this chapter is to analyze Africa's performance in the last three BRs, examine the degree to which Africa is on track, and assess the efforts still needed to meet the Malabo goals and targets by 2025. The chapter uses structural equation modeling (SEM) with BR data to empirically assess the causal relationships hypothesized in the Malabo theory of change. Specifically, the analysis examines the relationships between the countries' implementation

1 The seven Malabo Declaration commitments are (1) recommitting to the principles and values of the Comprehensive Africa Agriculture Development Programme (CAADP) process, (2) enhancing investment finance in agriculture, (3) ending hunger in Africa by 2025, (4) reducing poverty by half by 2025 through inclusive agricultural growth and transformation, (5) boosting intra-African trade in agricultural commodities and services, (6) enhancing resilience of livelihoods and production systems to climate variability and other related risks, and (7) strengthening mutual accountability for actions and results.

2 The technical partners include the Regional Strategic Analysis and Knowledge Support System (ReSAKSS), the Alliance for a Green Revolution in Africa, and the Food and Agriculture Organization of the United Nations.

3 The AATS is a tool that helps summarize countries' performance on the BR indicators and track their progress on the Malabo commitments. For each country, the AATS highlights five indicators with strong performance and five areas that the country should pay greater attention to.

of Comprehensive Africa Agriculture Development Programme (CAADP) principles and values, policy outcomes, and development outcomes measured by the BR data. In addition, the chapter aims to inform the post-Malabo agenda with forward-looking analysis and recommendations.

The chapter is organized as follows: the following section outlines and discusses the BR process and trends in BR performance over the three BR cycles. This is followed by a discussion on the conceptual framework, estimation, and analysis of findings. The last section provides conclusions and recommendations.

Context

Since the inaugural report, a series of events have been organized at the national, regional, and continental levels to assess achievements, challenges, and lessons derived from the BR process. These gatherings have also deliberated on continual enhancements, particularly concerning the process itself, relevant indicators, data quality, methodologies, and technical guidelines.

In essence, the BR process serves as a vehicle to implement the CAADP/Malabo theory of change, striving to drive agricultural transformation and enhance food security and nutrition throughout Africa. Our understanding of the CAADP/Malabo theory of change, as outlined in Benin, Ulimwengu, and Tefera (2018), revolves around four key pillars:

1. Increasing investment in agriculture: This pillar emphasizes the need for African governments to allocate a significant portion of their national budgets to agriculture and ensure targeted investments in key areas such as irrigation, infrastructure, research, and extension services.
2. Ending hunger and achieving food security: The overall goal of the program is to enhance productivity and production in agriculture to improve food availability; promote market access; and support smallholder farmers, particularly women and youth, in adopting sustainable agricultural practices.
3. Promoting agricultural research, technology, and innovation: This pillar focuses on strengthening agricultural research and development systems; promoting the use of modern technologies; and fostering innovation to improve productivity, enhance resilience to climate change, and address challenges in the agricultural sector.
4. Enhancing resilience and agricultural sustainability: The theory of change emphasizes building resilience in agricultural systems, promoting sustainable resource management, and adopting climate-smart agricultural practices to mitigate the effects of climate change and ensure long-term agricultural sustainability.

Evaluating the implementation of CAADP/Malabo requires the consideration of various aspects such as policy reforms, investment, progress toward targets, and impact on agricultural development. The AUC, AUDA-NEPAD, and other stakeholders have been actively engaged in supporting countries in their efforts to develop and implement appropriate policies. However, the level of policy implementation varies across countries. Some countries have made significant progress in reforming policies, such as aligning their national agriculture investment plans with CAADP principles. Some have faced challenges in implementation due to limited capacity and resources, while others still have not done enough to embrace CAADP. For example, CAADP has been advocating for increased public and private investment in agriculture, suggesting the target of allocating at least 10 percent of national budget expenditures to the sector. However, here again, progress in investment varies among countries, with some making significant strides while others struggle to meet the target. Limited public funding, competing priorities, and challenges in attracting private sector investment remain key barriers to achieving the investment goals.

The Malabo Declaration also sets targets for development outcomes in various areas, including agricultural productivity, access to markets, food security, and resilience. Assessing progress toward these targets requires a country-specific analysis. Overall, as with policy reformation and investment goals, progress has been mixed. Some countries have made significant progress in certain areas, such as increasing agricultural productivity or enhancing resilience, while facing challenges in other areas, such as reducing postharvest losses or achieving food security targets.

In order to assess country performance in implementing the declaration, the AUC released the first, second, and third BR reports in 2018, 2020, and 2022, respectively, along with the corresponding AATS.

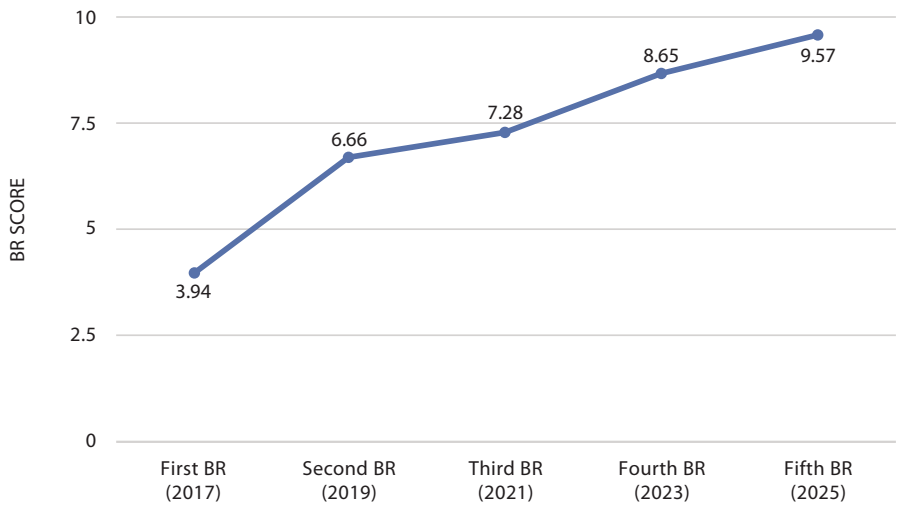
During each BR reporting cycle, the AATS is compared with the BR benchmark score, the minimum score required in that particular year for a country to be considered on track to achieving the Malabo target by 2025. During the

inaugural (2017) BR, the benchmark score was 3.94 out of 10. As Figure 2.1 shows, by design, the minimum score increased to 6.66 points during the second (2019) BR and further to 7.28 in the third (2021) BR cycle. The minimum score needed for a country to be on track to achieve the Malabo targets for the next successive BRs are 8.65 and 9.57 for the 2023 (fourth BR) and 2025 (fifth BR), respectively (AUC 2020). This means that Africa as a whole needs to experience continuous and progressive improvement to be on track in meeting the Malabo goals and targets.

The number of countries that drafted, validated, and submitted BR reports to their respective RECs increased from 47 in the first BR to 49 in the second BR and 51 in the third BR cycle, showing that more and more countries are being involved in the BR process. The performance observed in the three BRs, however, indicates that Africa has remained off track with regard to meeting the Malabo goals and targets by 2025. In the first (2017) BR, the AATS stood at 3.6 out of 10, below the 3.94 minimum required to be on track. In the second (2019) BR, the continent improved its score by about 12 percent, to 4.03, but remained off track since it was below the benchmark of 6.66 set for the second BR cycle. In the third (2021) BR cycle, the AATS reached 4.32, increasing by 7.2 percent over the second BR, but the continent again remained far off track, as it was below the 7.28 benchmark (Figure 2.2).

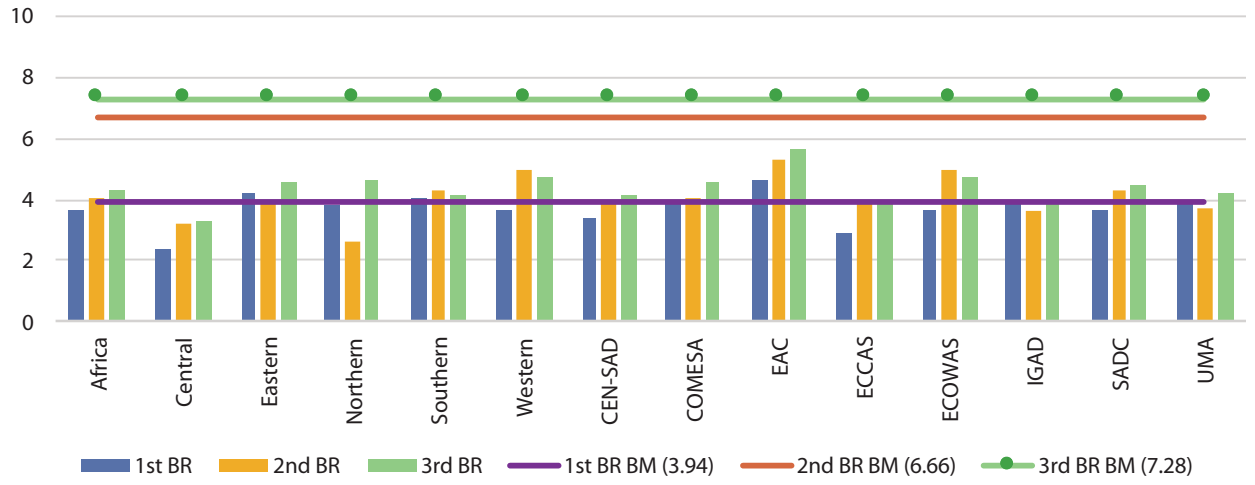
The trend shows that progress in implementing the goals and targets has continued to slow for Africa as a whole. A similar trend was observed for most of the geographic regions and RECs. A few subgroups were on track during the first BR cycle, including eastern Africa, the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and the Union du Maghreb Arab (UMA). In the second and third BR cycles, however, none of the geographic regions and RECs were

FIGURE 2.1—BR BENCHMARK (MINIMUM SCORES BY BR CYCLE)



Source: Authors' calculations based on AUC (2020, 2022).
Note: BR = Biennial Review.

FIGURE 2.2—AFRICA AGRICULTURE TRANSFORMATION SCORE AND BR BENCHMARKS (BY BR CYCLE)



Source: Authors' calculations based on AUC (2018, 2020, and 2022).
Note: BM = benchmark; BR = Biennial Review; CEN-SAD = Community of Sahel-Saharan States; COMESA = Common Market for Eastern and Southern Africa; EAC = East African Community; ECCAS = Economic Community of Central African States; ECOWAS = Economic Community of West African States; IGAD = Intergovernmental Authority on Development; SADC = Southern African Development Community; UMA = Union du Maghreb Arabe.

able to reach the benchmark scores for meeting the Malabo goals and targets. Relatively higher scores were recorded during the second and third BR cycles by a few subgroups, including western Africa, EAC, and the Economic Community of West African States (ECOWAS).

In this chapter, using data from the first three BR cycles (2017, 2019, and 2021), we provide a comprehensive assessment of the BR thematic areas and indicators and their interrelationships that builds on the agenda's own theory of change, as developed by Benin, Ulimwengu, and Tefera (2018).

Conceptual Framework and Methods

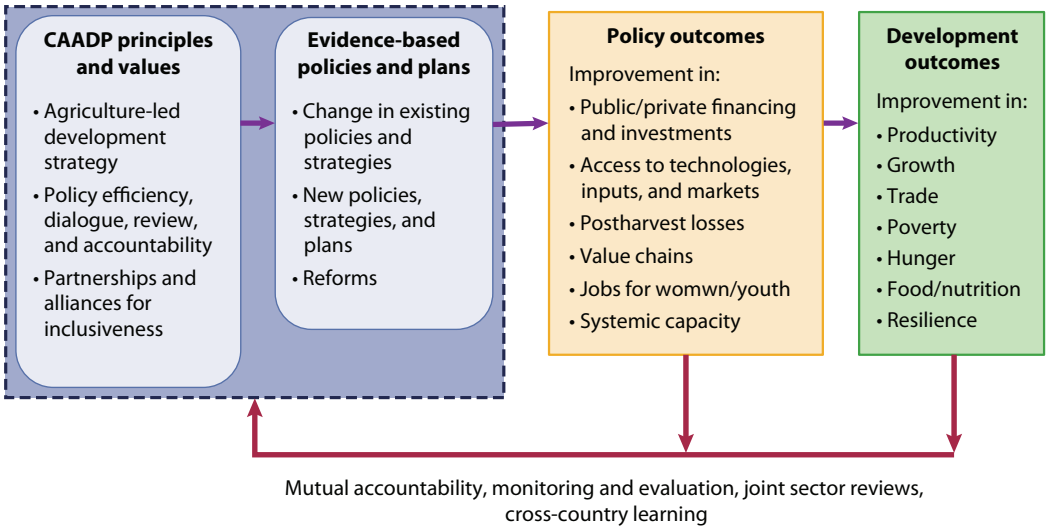
Impact Pathway of the Malabo Declaration and Empirical Framework

The CAADP/Malabo theory of change builds on the work developed by Benin, Ulimwengu, and Tefera (2018), which outlines the fundamental hypothesis for recommitting to the CAADP process. The hypothesis is that committing to mutual accountability for results and actions in CAADP brings added benefit by reforming evidence-based planning and implementation, rooted in the principles of country ownership and inclusiveness. The theory of change can be generalized by the impact pathway shown in Figure 2.3.[4] Committing to the CAADP principles and values is expected to improve the policymaking process and to safeguard the design and implementation of good policies, which in turn is expected to lead to desirable policy outcomes. These outcomes include an increase in the amount and quality of public and private investments, increased access to technologies and markets, a reduction in postharvest losses, increased employment for women and youth along key value chains, and increased systemic capacity for planning and implementation. The policy outcomes in turn are expected to contribute to better development outcomes—to raise productivity, accelerate growth, increase trade, reduce poverty and hunger, increase food and nutrition security, and enhance resilience to climate variability.

As shown in Figure 2.3, the notion of committing to mutual accountability for results and actions is better reflected in the feedback linkages associated with monitoring and evaluation, joint sector reviews, and cross-country learning, among others, to improve the policymaking process and the design and implementation of evidence-based policies and plans. This reflects the dynamism in the implementation process, and the form of mutual accountability may be described as collaborative, as opposed to representative or corporate (Steer, Wathne, and Driscoll 2008).

In this chapter, we aim to empirically assess the existence and strength of causal relationships between the different elements of the Malabo Declaration impact pathway illustrated in Figure 2.3. To do this, we use structural equation

FIGURE 2.3—MALABO DECLARATION IMPACT PATHWAY



Source: Authors' calculations based on AUC (2018, 2020, and 2022).

Note: BM = benchmark; BR = Biennial Review; CEN-SAD = Community of Sahel-Saharan States; COMESA = Common Market for Eastern and Southern Africa; EAC = East African Community; ECCAS = Economic Community of Central African States; ECOWAS = Economic Community of West African States; IGAD = Intergovernmental Authority on Development; SADC = Southern African Development Community; UMA = Union du Maghreb Arabe.

4 This impact pathway underlies the CAADP Monitoring and Evaluation Framework (Benin, Johnson, and Omilola 2010), the CAADP Mutual Accountability Framework (Oruko et al. 2011), the CAADP Results Framework (AU-NEPAD 2015a), and the Implementation Strategy and Roadmap to Achieve the 2025 Vision on CAADP (AU-NEPAD 2015b).

modeling (SEM), a powerful multivariate analysis technique that is widely used in social sciences research. It integrates aspects of several other statistical techniques, including factor analysis, multiple regression, and simultaneous equation modeling. It is particularly suited to testing complex relationships involving multiple causes and multiple outcomes. Theoretical and empirical advantages of SEM include that it (1) allows complex relationship testing, (2) models measurement error and allows for the inclusion of confounding variables, (3) enables the analysis of latent variables, (4) enables theory development and tests the plausibility of a hypothesized model, (5) can conduct multigroup comparisons, (6) allows the estimation of models with nonlinear relationships, and (7) can be used with secondary data sources.

While SEM has many advantages, it also has certain limitations, such as complexity in interpretation and dependence on model specification. In this paper we build the SEM based on the BR's own theory of change, and results are interpreted accordingly. In the analysis section we discuss the estimation strategy to account for SEM limitations.

Data

The CAADP Malabo BR reports and the corresponding databases released by the AUC in 2018, 2020, and 2022 are the sources for the data used in this chapter. The BR database covers indicators related to the CAADP process, investment in agriculture, poverty, hunger, agricultural trade within Africa, resilience, and mutual accountability. During the inaugural BR reporting period, seven thematic areas were disaggregated into 23 performance categories, which were further divided into 43 indicators. Following the second BR, four more indicators on food safety and food security were added under thematic area 3 (ending hunger). This increased the number of performance categories to 24 and the total number of indicators to 47 (Table 2.1).

Appendix Table A2.1 presents the seven thematic areas, all 24 performance categories, and the 47 indicators and their position in the impact pathway. Some of the indicators were incorporated after the second BR. These are performance category 3.6 (food safety) and some indicators under thematic area 3: the prevalence of moderate and severe food insecurity in the population (I3.5vii), Food Safety Systems Index (I3.6i), Food Safety Health Index (I3.6ii), and Food Safety Trade Index (I3.6iii).

Reporting on the BR indicators requires a wide range of parameters across African food systems. In the first (2017) BR, a total of 166 parameters were required to report on the 43 BR indicators, and this increased by 60 percent, to 266, during the second BR. Countries were advised to report on disaggregated data following the introduction of the eBR,[5] which was the main reason behind the increase in the number of parameters (Benin et al. 2020). Furthermore, the introduction of four more indicators during the 2019 BR necessitated the addition of several new parameters. In the third (2021) BR cycle, the required number of parameters to report on the 47 indicators further increased, to 334, representing a change of 25.6 percent from the second (2019) BR. Parameters needed in thematic area 3 (ending hunger) and to some extent in thematic area 4 (halving

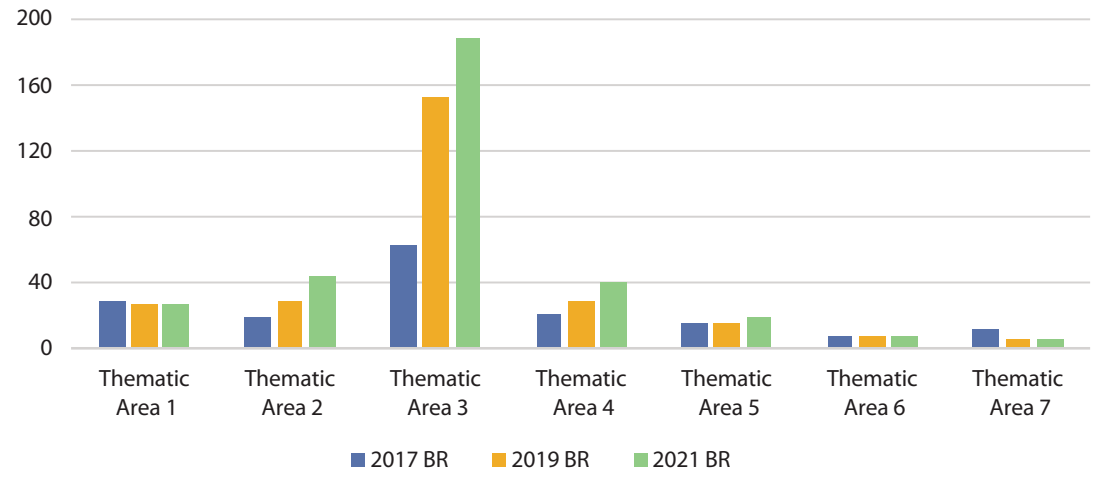
TABLE 2.1—NUMBER OF MALABO BR PERFORMANCE CATEGORIES AND INDICATORS

Thematic area		Number of					
		Performance categories			Indicators		
		First BR	Second BR	Third BR	First BR	Second BR	Third BR
TA1:	Recommitting to CAADP process	3	3	3	3	3	3
TA2:	Enhancing investment finance in agriculture	4	4	4	6	6	6
TA3:	Ending hunger by 2025	5	6	6	17	21	21
TA4:	Halving poverty through agriculture by 2025	4	4	4	8	8	8
TA5:	Boosting intra-African trade in agriculture commodities and services	2	2	2	3	3	3
TA6:	Enhancing resilience to climate variability	2	2	2	3	3	3
TA7:	Mutual accountability for actions and results	3	3	3	3	3	3
	Total	23	24	24	43	47	47

Source: AUC (2018, 2020, and 2022).
Note: BR = Biennial Review; CAADP = Comprehensive Africa Agriculture Development Programme; TA = thematic area.

5 The eBR is an interactive web-based data platform tool developed by ReSAKSS.

FIGURE 2.4—NUMBER OF PARAMETERS REQUIRED (BY THEMATIC AREA AND BR CYCLE)



Source: Authors' consolidation based on AUC (2018, 2020, and 2022).
Note: BR = Biennial Review.

poverty) were further disaggregated during the third BR exercise. In addition, two indicators in thematic area 2 (investment in agriculture) that were silent in the previous BR cycles were included in the analysis during the 2021 BR cycle and therefore further contributed to the increase in the number of parameters.

In general, the parameters required for thematic area 3 (ending hunger) remained the highest during the three BR cycles and showed significant increase during the last two BRs (Figure 2.4). In the third BR cycle, close to 60 percent of the total parameters required on the BR report were related to thematic area 3. The number of parameters for thematic areas 1, 2, 4, 5, 6, and 7 combined was less than that of thematic area 3 alone. However, compared to the first (2017) BR, the number of parameters in the subsequent two BRs decreased for thematic area 1 (recommitment to CAADP) and thematic area 7 (mutual accountability). This is because the parameters required for computing the indicators for the two thematic areas were simplified (Benin et al. 2020).

The number of countries that participated in the BR and submitted data represents the maximum number of observations expected for each indicator in each BR cycle. Thus, the maximum number of observations in the first, second, and third BRs was 47, 49, and 51, respectively. As Appendix Table A2.2 shows, data were missing for many of the indicators, although the magnitude of the deficiency differed by indicator as well as by BR cycle. Data loss was more notable in some indicators, including I3.3, I3.5v, I4.1iv, and I3.6iii. The number of countries with missing observations showed a declining trend from the first BR cycle to the third (Appendix Table A2.2).

Critical Analysis

Indicators on Recommitting to CAADP Process and Mutual Accountability for Actions and Results

Progress in thematic area 1—recommitting to the CAADP process: The Malabo commitment to the CAADP process (thematic area 1) is composed of three performance categories, each with one performance indicator. *Country CAADP process* is the first performance category (PC1.1), and the indicator is the *CAADP Process Completion Index* (I1.1), with a milestone of 100 percent since 2018. Countries are required to report a total of seven parameters on this indicator. These parameters measure the existence and implementation of a Malabo-compliant national agriculture investment plan.

The indicator is computed by taking a simple average of the seven parameters. The progress for the continent shows continuous improvement in indicator I1.1 during the three BR cycles, increasing from 63.2 percent to 81 percent between the first and the third BRs (Figure 2.5A). Looking at geographic regions, a pattern similar to the continent as a whole holds for the northern and southern Africa regions. For the central and western regions, the CAADP Process Completion Index recorded in the third BR was higher than the result in the first BR but lower than what was recorded in the second BR period. For eastern Africa, a decline was observed during the second BR but the figure later improved during the third BR period. Overall, eastern Africa had the highest CAADP Process Completion Index score during the first BR, while western

Africa recorded the highest score during the second and third cycles.

Establishing CAADP-based cooperation, partnership, and alliance is the second performance category (PC1.2) under thematic area 1. The indicator associated is *the existence of, and quality of, a multisectoral and multistakeholder coordination body* (I1.2). The target for this indicator has been set at 100 percent since 2018. Five parameters, which measure how broad, inclusive, participatory, and open the coordination mechanism is, are used to report on the indicator (see AUC 2021).

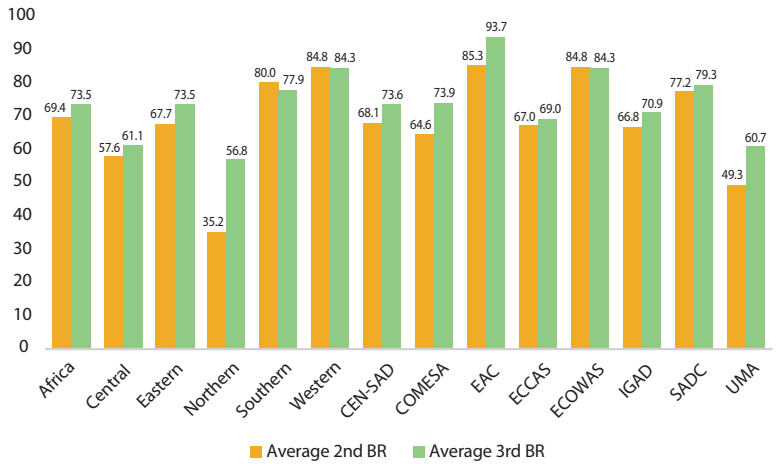
For Africa as a whole, the indicator improved significantly during the second BR, with a 72.3 percent increase compared to the performance recorded during the first BR (that is, from 47.5 percent to 82.3 percent). During the third BR, however, the result declined to 75.5 percent. This was due primarily to a decline in the scores for Mauritius and Somalia, from 8.4 and 6.4, respectively, to 0 (as the countries did not participate in the third BR), as well as a significant reduction in the score for Benin and Niger. A similar pattern is observed for the central, southern, and western Africa regions. The performance for eastern Africa remained almost unchanged in the third BR, while it marginally improved for northern Africa (Figure 2.5B).

The third performance category under thematic area 1 is *establishing CAADP-based policy and institutional review, setting, and support* (PC1.3). The indicator for this is the *existence and adequacy of evidence-based*

BOX 2.1—PROPORTION OF BR PARAMETERS REPORTED

Africa, as well as most of the subgroupings, showed a higher rate of data reporting during the 2021 BR when compared with the 2019 BR performance. For Africa as a whole, of the total required parameters, the data reported increased from 69.4 percent to 73.5 percent (Figure B2.1). That is, during the second BR cycle, 69.4 percent of the total 266 data parameters were reported. In the third BR, 73.5 percent of the 334 parameters were reported for Africa as a whole. At the regional level, the result is similar except for a few groupings. Southern Africa, western Africa, and ECOWAS are the only subgroups that showed a decline in the data reporting rate during the 2021 BR, when compared with the 2019 BR, albeit marginally. These data need to be unpacked by thematic area and country to identify the main contributors behind the reductions observed in the data reporting rate by these groups during the 2021 BR. At the same time, these groups already have a higher reporting rate, at about 80 percent or more. EAC is the only subgroup that recorded a data reporting rate of more than 90 percent during the third (2021) BR.

FIGURE B2.1—DATA REPORTING RATE (PERCENTAGE)



Source: Authors' consolidation based on AUC (2018, 2020, and 2022).
Note: BR = Biennial Review.

Northern Africa and UMA recorded notable increases in their data reporting rates, of more than 10 percentage points. The finding shows that despite improved data reporting rates, there is still a need to do more and better to further improve the data reporting performance. For Africa as a whole, for example, more than a quarter of the required data parameters are not yet being reported.

Source: Authors' calculations based on AUC (2018, 2020, and 2022).

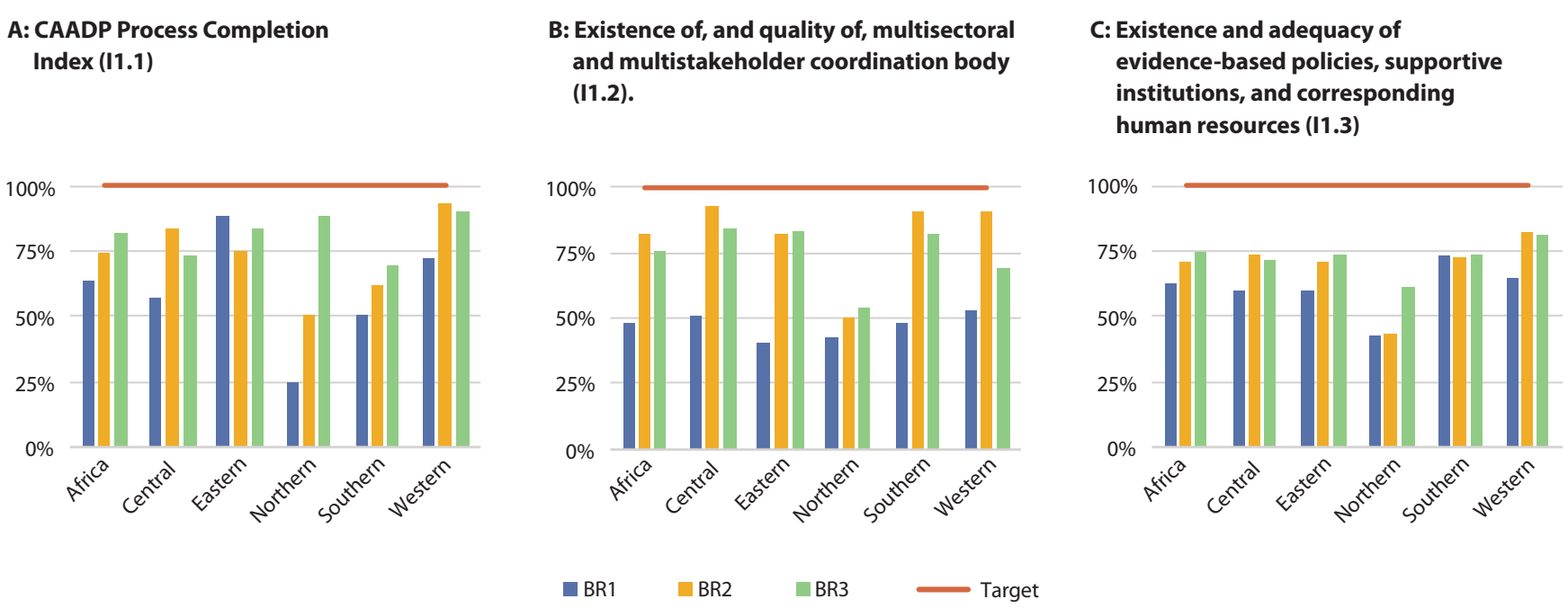
Note: BR = Biennial Review; CEN-SAD = Community of Sahel-Saharan States; COMESA = Common Market for Eastern and Southern Africa; EAC = East African Community; ECCAS = Economic Community of Central African States; ECOWAS = Economic Community of West African States; IGAD = Intergovernmental Authority on Development; SADC = Southern African Development Community; UMA = Union du Maghreb Arabe.

policies, supportive institutions, and corresponding human resources (I1.3), with a target of 100 percent since 2018. The three parameters associated with this indicator measure the extent to which policies are evidence-based, the institutions are adequate and supportive, and the staffing is adequate (in number and capacity) at the professional level.

Overall, Africa managed to improve its performance on this indicator during the three BRs, from 62.9 percent to 70.2 percent and further to 74.2 percent. The performance recorded by western Africa remained higher than the average for Africa overall and the other geographic regions during the second and third BRs. However, although northern Africa improved its performance during the three reporting cycles, it remained the lowest-performing when compared to the other groupings (Figure 2.5C).

Progress in thematic area 7—mutual accountability for actions and results: Thematic area 7 is composed of three performance categories: *increasing country capacity for evidence-based planning, implementation, and monitoring and evaluation* (PC7.1), *fostering peer review and mutual accountability process* (PC7.2), and *conducting a biennial agriculture review process* (PC7.3). Each performance category under thematic area 7 has one indicator. The indicator corresponding to PC7.1 is the *index of capacity to generate and use agriculture statistical data and information (Agricultural Statistics Capacity Index)* (I7.1). This is an agricultural statistics capacity indicator aimed at providing evidence on the status of rural and agricultural statistics systems. The Malabo target for the Agricultural Statistics Capacity Index is to achieve at least 69 percent by 2025. The results show that Africa and the different geographic regions were able to improve their

FIGURE 2.5—PROGRESS IN INDICATORS UNDER THEMATIC AREA 1 (I1.1, I1.2, AND I1.3)



Source: Authors' calculations based on AUC (2018, 2020, and 2022).
Note: BR = Biennial Review; CAADP = Comprehensive Africa Agriculture Development Programme.

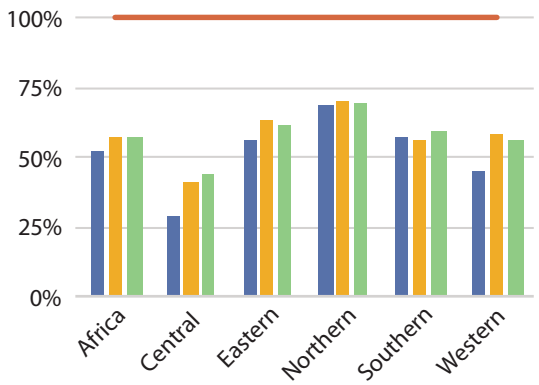
Agricultural Statistics Capacity Index scores. The level of progress was the highest in northern Africa during the three BR periods and the lowest in central Africa (Figure 2.6A).

The indicator associated with PC7.2 is the *existence of inclusive institutionalized mechanisms and platforms for mutual accountability and peer review* (I7.2). The indicator is based on three parameters that measure the extent to which the agriculture review process follows established/standard principles, follows robust review mechanisms, and covers key areas of assessment. The result reveals that Africa improved from 49.5 percent in the first BR to 65.1 percent and 74.2 percent in the second and third BRs, respectively. There are stark differences in the performance of the geographic regions, with southern and western Africa recording notable progress during the second and third BR cycles and northern Africa showing the least progress (Figure 2.6B).

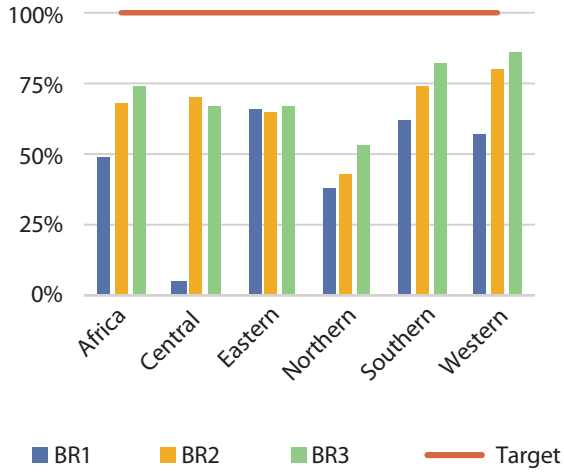
The third indicator is *country BR report submission* (I7.3), which is the indicator for PC7.3. The indicator is based on three parameters that measure progress in drafting the BR report, the quality of the draft BR report, and the technical review process of the BR. As Figure 2.6C reveals, Africa's performance in BR report submission declined from 92.4 percent in the first BR to 84.5 percent and further to 80.9 percent in the second and third BR cycles, respectively. A similar pattern is observed for eastern Africa, while for central, southern, and western Africa, the data reporting rate improved during the second BR before it declined in the third BR period. Central Africa recorded the lowest performance during the third BR period, at 72.5 percent.

FIGURE 2.6—PROGRESS IN INDICATORS UNDER THEMATIC AREA 7 (I7.1, I7.2, AND I7.3)

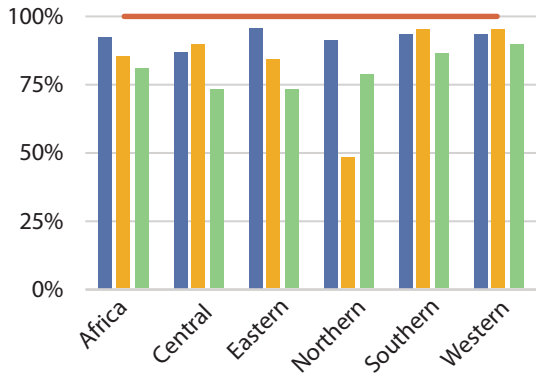
A: Index of capacity to generate and use agriculture statistical data and information (I7.1)



B: Existence of inclusive institutionalized mechanisms and platforms for mutual accountability and peer review (I7.2)



C: Country BR report submission (I7.3)



Source: Authors' calculations based on AUC (2018, 2020, and 2022).
Note: BR = Biennial Review.

The overall performance in the CAADP process (thematic area 1) and mutual accountability (thematic area 7) is presented in Appendix Table A2.3. The results show that Africa improved its scores for both thematic areas, from relatively low scores in the first BR. At the regional level, eastern Africa had the highest score in both thematic areas during the first BR. In the second and third BR cycles, however, western Africa consistently recorded the highest scores. Scores were lowest in northern Africa (for thematic area 1) and central Africa (for thematic area 7). It is important to underline that the scores for Africa and the geographic regions might have been different if a non-equal weighting approach had been applied.

Relationship Between Recommitting to the CAADP Process and Mutual Accountability and Progress in Achieving Outcomes

Correlation Among the Indicators of Recommitting to CAADP and Mutual Accountability

Table 2.2 presents the correlation between the indicators on recommitting to the CAADP process and mutual accountability. The results show a positive and significant association between many of the indicators during the second and third BRs. In the first BR, progress on the *existence of inclusive institutionalized mechanisms and platforms for mutual accountability and peer review* (I7.2) was the only indicator with significant correlation; it was positively correlated with three indicators, I1.1, I1.2, and I7.1, at a significance level of 1 percent to 10 percent. Two other indicators, *existence and adequacy of evidence-based policies, supportive institutions, and corresponding human resources* (I1.3) and *country BR report submission* (I7.3), had a significant correlation with I1.2 and I1.1, respectively, while the correlation was insignificant for all other indicators. During the second and third BR cycles, progress on several indicators produced a significant and stronger correlation with other indicators. This correlation includes all indicators on recommitting to CAADP (I1.1, I1.2, and I1.3) and two out of three indicators on mutual accountability (I7.2 and I7.3). The results suggest the presence of an association between the indicators. However, the agricultural statistics capacity indicator (I7.1) recorded significant correlation with very few indicators.

Mutual accountability in the context of agricultural programs refers to the reciprocal obligations or responsibilities among stakeholders, such as government entities, donors, farmers, civil society organizations, and private sector entities. It is the cornerstone of successful implementation of the CAADP agenda. Mutual accountability encourages stakeholders to participate more actively in agricultural programs, since they are involved in setting targets and held responsible for achieving them. This can lead to better-tailored interventions and enhanced ownership (Global Partnership for Effective Development Cooperation 2016).

A mutual accountability framework can increase transparency in program implementation. Regular reporting and reviewing of progress toward shared goals make it easier to track where resources are going and how they are being used, contributing to greater trust among stakeholders (OECD 2018). When roles, responsibilities, and expectations are clearly defined and monitored, resources can be utilized more efficiently. Mutual accountability can also lead to better results, as stakeholders are incentivized to meet their commitments (Bajpai and Myers 2019).

Regular reviews and feedback loops incorporated within a mutual accountability framework allow for the evaluation of program successes and challenges. This promotes learning and helps in refining and improving future interventions (FAO 2014). Finally, mutual accountability can promote the inclusion of marginalized groups. By ensuring that all stakeholders' voices are heard, these frameworks can help address power imbalances and ensure that program benefits are equitably distributed (IFAD 2019).

Correlation with Outcomes

Appendix Table A2.4 presents the correlation between recommitting to the CAADP process or mutual accountability, and the performance recorded in other thematic areas and targets of the Malabo Declaration. Correlation coefficients are estimated for the relationships between the thematic area scores (T-Scores) for CAADP process and mutual accountability and the scores at the thematic and performance category level, as well as values of the indicators in the other five thematic areas. The results clearly show that the magnitude and significance of the correlation notably improved as Africa moved from the first BR to the second BR and further to the third BR.

TABLE 2.2—CORRELATION AMONG INDICATORS ON RECOMMITTING TO CAADP AND MUTUAL ACCOUNTABILITY, 2015–2020

	Recommitting to CAADP process									Mutual accountability								
	I1.1			I1.2			I1.3			I7.1			I7.2			I7.3		
	BR1	BR2	BR3	BR1	BR2	BR3	BR1	BR2	BR3	BR1	BR2	BR3	BR1	BR2	BR3	BR1	BR2	BR3
I1.1																		
Coeff.	1	1	1															
P value	n.a.	n.a.	n.a.															
Obs.	43	48	51															
I1.2																		
Coeff.	0.25	0.48	0.25	1	1	1												
P value	0.12	0.001***	0.075*	n.a.	n.a.	n.a.												
Obs.	39	47	51	42	47	51												
I1.3																		
Coeff.	0.15	0.31	0.28	0.29	0.24	0.24	1	1	1									
P value	0.350	0.034**	0.049**	0.066*	0.100	0.096*	n.a.	n.a.	n.a.									
Obs.	41	48	51	41	47	51	44	49	51									
I7.1																		
Coeff.	0.17	0.08	-0.2	-0.00	0.40	-0.10	0.23	0.39	0.36	1	1	1						
P value	0.450	0.670	0.290	0.870	0.027**	0.560	0.280	0.029**	0.052**	n.a.	n.a.	n.a.						
Obs.	23	31	30	23	30	51	25	32	30	25	32	30						
I7.2																		
Coeff.	0.47	0.2	0.27	0.37	0.19	0.34	0.23	0.34	0.42	0.39	0.36	0.1	1	1	1			
P value	0.011**	0.190	0.056*	0.042**	0.200	0.016**	0.200	0.021**	0.002***	0.077*	0.050*	0.600	n.a.	n.a.	n.a.			
Obs.	29	46	51	30	46	51	32	47	51	22	31	30	32	47	51			
I7.3																		
Coeff.	0.27*	0.38	0.29	0.20	0.54	0.31	0.27	0.48	0.35	0.24	0.36	166	0.18	0.12	0.64	1	1	1
P value	0.100	0.008***	0.040**	0.200	0.000***	0.025**	0.075*	0.000***	0.013**	0.250	0.040	0.380	0.320	0.420	0.000***	n.a.	n.a.	n.a.
Obs.	43	48	51	42	47	51	44	49	51	25	32	30	32	47	51	47	49	51

Source: Authors' calculations.

Note: BR = Biennial Review; CAADP = Comprehensive Africa Agriculture Development Programme; n.a. = not applicable.

Correlation with recommitting to the CAADP process (thematic area 1): In the first BR, significant correlation was observed with only two thematic areas (thematic areas 3 and 6) and five performance categories under thematic areas 3, 4, and 6. During the second and third BRs, the number of positive and significant relationships improved, with higher magnitude in most cases compared to the first BR. That is, at the thematic area level, significant correlation was observed with four thematic areas in the second BR and three thematic areas in the third BR. Similarly, significant correlation was found with 11 and 8 performance categories in the second and third BRs, respectively, with higher magnitude in most cases. At the indicator level, the number of significant correlations reached 7 in

the second BR and 13 in the third BR. That is, the proportion of indicators with significant correlation increased from 2.3 percent in the first BR to 14.9 percent in the second BR and further to 27.7 percent in the third BR. Once again, the magnitude of the correlation showed a growing trend from the first BR to the second and third BRs. The results indicate that as Africa progresses in its BR process, more and more indicators are positively and significantly correlated with progress in recommitting to the CAADP process. Moreover, the results indicate that recommitting to CAADP has a positive and growing association with most of the thematic areas of the Malabo Declaration. This suggests that an improved country CAADP process as well as improved evidence-based policies have a positive and significant relationship with key policy and development outcomes. However, additional studies are required to identify why a strong correlation is observed in some cases but not in others.

Correlation with mutual accountability (thematic area 7): The results show an increasing association between mutual accountability and progress in the underlying indicators as Africa proceeds with its BR reporting. Particularly, the third BR exhibits a significant and higher association compared to the second BR, which in turn had a higher number of significant correlations when compared with the first BR. In the third BR, more than 60 percent of the 24 performance categories recorded significant correlation, compared to approximately 40 percent in the previous BRs. In the first BR, progress in 5 of the 43 indicators (11.6 percent) was significantly correlated. This increased to 9 indicators (19.1 percent) in the second BR and further to 19 (40.4 percent) in the third BR. In most of the cases, the correlation coefficient increases and becomes more significant as we move away the first BR. Indicators in thematic area 3 (ending hunger) and thematic area 4 (reducing poverty) have the largest numbers of significantly correlated indicators, followed by thematic area 2 (investment finance in agriculture).

In both recommitting to the CAADP process and mutual accountability, the trend shows increasing correlation in terms of both magnitude and significance as Africa progresses in the CAADP BR process. Further studies are needed to unpack the result and also identify factors that are driving progress in some thematic areas and not in others. Improved data reporting could be one of the factors contributing to stronger correlation among the indicators (see Box 2.1 for a discussion of the data reporting performance of Africa and the regions). However, an increase in the data reporting rate alone cannot explain the significant correlation or higher BR score. BR scores are determined by policy actions and investment decisions and the impact of these interventions on economic agents (Benin et al. 2020).

Econometric Analysis

The correlation discussed above does not imply causation. In other words, the fact that two variables move together does not mean that one is causing the other

TABLE 2.3—EQUATIONS WITH AT LEAST 50% MC

Code	mc	Name
br	0.786	Africa Agricultural Transformation Scorecard
x6_2	0.751	Existence of government budget lines and enabling environment to respond to spending needs on resilience-building initiatives
x3_6i	0.725	Food safety systems indicator
x6_1i	0.682	Improvement in resilience to climate shocks and other shocks
x3_5vii	0.680	Proportion of moderate and severe food insecurity in the population
x3_5iv	0.665	Prevalence of undernourished
x3_5iii	0.663	Prevalence of wasting
x3_5i	0.641	Prevalence of stunting
x4_1iv	0.629	Reduction rate of poverty
x3_5vi	0.602	Proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet
x3_5ii	0.593	Prevalence of underweight
x4_1i	0.578	Growth rate of agriculture value added
x5_1	0.557	Growth rate of the value of trade in agricultural commodities and services within Africa
x3_5v	0.552	Growth rate of the proportion of women who meet the requirements for minimum dietary diversity for women
x5_2i	0.540	Trade Facilitation Index
x3_2ii	0.533	Agricultural land productivity
x3_2iii	0.528	Growth rate yields for the national priority commodities
x3_2i	0.504	Agricultural labor productivity

Source: Authors.

to move. In this section, we use structural equation models built on the BR's own theory of change to capture causality.

Structural equation modeling (SEM) can address endogeneity in various ways. Endogeneity can arise due to omitted variables, measurement error, or simultaneity (reverse causation), which, if unaddressed, can result in biased parameter estimates. One major strength of SEM is its capacity to model latent variables, which can help address the problem of omitted variable bias. By capturing unobserved factors as latent constructs, SEM can account for unobserved heterogeneity that might otherwise induce endogeneity (Antonakis et al. 2010). Moreover, in SEM, each equation has its own error term. By allowing the error terms of different equations to correlate, SEM can capture the unobserved factors that affect multiple endogenous variables simultaneously, thereby addressing some of the concerns related to endogeneity. To account for missing values, we implemented the maximum likelihood multivariate estimator, a statistical method used predominantly within the realm of SEM.

For the sake of parsimony, out of the 42 equations, we chose to focus on 19 whose mc are at least 50 percent,[6] as shown in Table 2.3. In other words, we retained only endogenous variables for which there is a significant correlation between observed and predicted values. Implicitly, this means that there are other important factors that are not included in the CAADP BR reporting system.

Based on the equations presented in Table 2.3, we report the total significant effects for each path (Sobel 1987), along with standard errors obtained by the delta method (see Table 2.4). Figure 2.7 captures the complete network of significant total effects. The total effect is the combined effect of both direct and indirect effects. In other words, it is the sum of the pathways through which one variable impacts another. In the context of a SEM, a direct effect refers to the

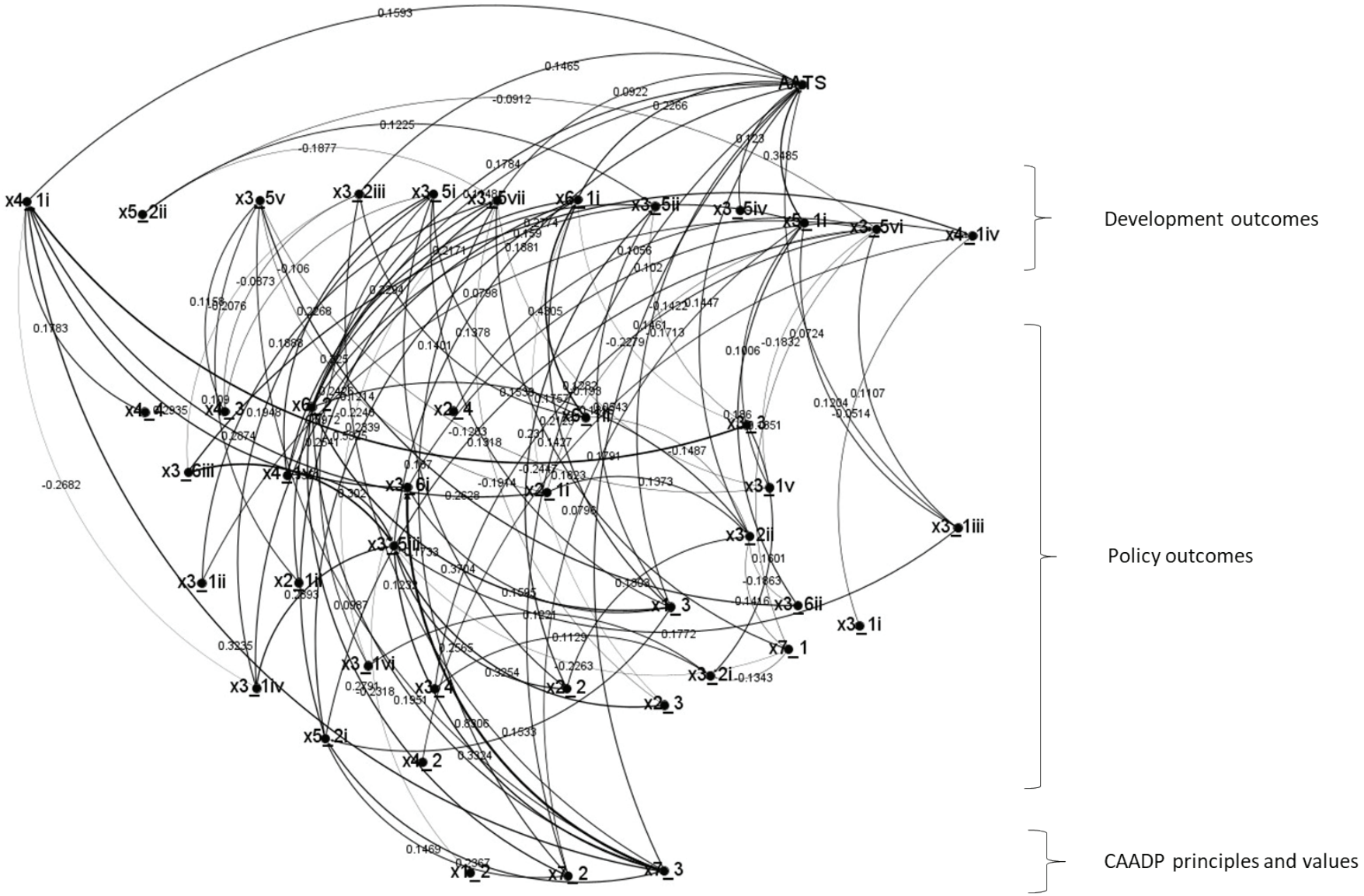
TABLE 2.4—SIGNIFICANT DRIVERS OF AFRICA'S AGRICULTURAL TRANSFORMATION

Code	Variable	Total marginal effects	Standard error	
x5_1	Growth rate of the value of trade in agricultural commodities and services within Africa	0.3485	0.0586	***
x6_1i	Percentage of farm, pastoral, and fisher households that are resilient to climate- and weather-related shocks	0.2266	0.0343	***
x3_5iii	Prevalence of wasting (%) among children under 5 years old	0.1881	0.0296	***
x7_3	Country Biennial Review report submission	0.1791	0.0482	***
x6_2	Existence of government budget lines to respond to spending needs on resilience-building initiatives	0.1784	0.0692	***
x4_1i	Growth rate of agriculture value added	0.1593	0.0308	***
x3_2iii	Growth rate of yields for the 5 national priority commodities	0.1465	0.0603	***
x1_3	Existence and adequacy of evidence-based policies, supportive institutions, and corresponding human resources	0.1461	0.0441	***
x3_2ii	Growth rate of agriculture value added, in constant US dollars, per hectare of agricultural land	0.1447	0.0569	***
x7_2	Existence of inclusive institutionalized mechanisms and platforms for mutual accountability and peer review	0.1427	0.0354	***
x3_5iv	Prevalence of undernourished (% of the country's population)	0.1230	0.0438	***
x4_1v	Reduction rate of the gap between the wholesale price and farmgate price	0.1148	0.0522	**
x3_5vii	Prevalence of moderate and severe food insecurity in the population	0.0922	0.0502	*
x3_1iii	Growth rate of the ratio of supplied quality agriculture inputs (seed, breed, fingerlings) to the total national input requirements for the commodity	0.0724	0.0419	*

Source: Authors.
Note: ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

6 The term mc represents the correlation between the dependent variable and its prediction. In the context of SEM, it is equivalent to the square root of the model's explained variance for the dependent variable. It provides a measure of the strength and direction of the linear relationship between the observed and predicted values of the dependent variable.

FIGURE 2.7—NETWORK OF SIGNIFICANT TOTAL EFFECTS



Source: Authors' calculations based on AUC (2018, 2020, and 2022).

Note: BM = benchmark; BR = Biennial Review; CEN-SAD = Community of Sahel-Saharan States; COMESA = Common Market for Eastern and Southern Africa; EAC = East African Community; ECCAS = Economic Community of Central African States; ECOWAS = Economic Community of West African States; IGAD = Intergovernmental Authority on Development; SADC = Southern African Development Community; UMA = Union du Maghreb Arabe.

immediate relationship between two variables, without any mediation through other variables. It is essentially the influence of one variable on another when all other variables are held constant. An indirect effect arises when the relationship between two variables is mediated through one or more intervening variables. This implies that the influence of the first variable on the second is channeled through another variable.

Over the 2017–2021 period, out of the 45 BR performance categories, only 14 (about 31.1 percent) have had significant total effects on the Africa Agriculture Transformation Scorecard (AATS), which captures the continent's overall progress toward achieving the CAADP/Malabo Declaration aims. This implies that either the selection of drivers may have been overly ambitious or the implementation process has not been very effective. Either way, the results call for a thorough assessment of the complete CAADP theory of change in terms of both policy instruments and expected outcomes in preparation for the post-Malabo agenda. The magnitude of the total effects varies between 0.3485 (*growth rate of the value of trade in agricultural commodities and services within Africa*, in constant US dollars) and 0.0724 (*growth rate of the ratio of supplied quality agriculture inputs to the total national inputs to the total national input requirements for the commodity*). It is worth noting that except for thematic area 2 (investment finance in agriculture), all other thematic areas have at least one performance category that is a significant driver of the overall CAADP/Malabo agenda. If anything, this confirms the need for a multifaceted approach in the design and implementation of a transformative agenda such as CAADP.

In a comprehensive program such as the CAADP/Malabo agenda, pathways from principles to policy and development outcomes are complex by nature. As reported in Figure 2.7, some of the findings are rather unexpected.[7] CAADP under the Malabo agenda, as articulated by the African Union, is an ambitious initiative aiming to transform the agricultural sector in Africa. With goals of spurring economic growth, improving food security, and fostering collaboration among member states, the initiative is holistic in its approach. As with any broad-scale program, the CAADP/Malabo agenda, while being a blueprint, can result in unanticipated outcomes once policy instruments are applied in real-world contexts. Explaining these unexpected findings, be they positive or negative, requires a nuanced understanding.

One of the primary reasons unexpected outcomes might arise is the vast heterogeneity of the African continent. Policies that might be effective in one country or region might not be as impactful elsewhere due to cultural, economic, or climatic differences. For instance, a policy aimed at bolstering irrigated farming might see incredible success in a country with abundant water resources but fail in a more arid nation. Moreover, policies do not operate in isolation. An intervention in one sector could have cascading impacts on another. For instance, improving agricultural productivity might unexpectedly lead to a decrease in prices if the output is not matched by demand, thereby negatively affecting farmer incomes. Policies, as they transition from paper to practice, might confront a myriad of on-the-ground challenges. Infrastructure bottlenecks, bureaucratic delays, or gaps in skill sets can lead to deviations from expected outcomes.

Global events, such as trade wars, pandemics, or climate phenomena, can significantly alter the expected outcomes of policy instruments. The recent COVID-19 pandemic, for example, impacted agricultural supply chains worldwide, an external shock that could lead to unforeseen results for initiatives under the CAADP/Malabo framework. The dynamics of socioeconomic systems can sometimes result in feedback loops that amplify or dampen the impacts of a policy. For example, an initial success in a particular agricultural initiative might attract more investment and talent into the sector, leading to even more significant positive outcomes than initially projected.

Unexpected findings in comprehensive programs like CAADP/Malabo are not necessarily indications of flawed design but are often a testament to the complexity of real-world systems. Recognizing, understanding, and adapting to these outcomes is crucial for refining policy instruments and ensuring that the overarching goals of the agenda are realized.

With that in mind, we also note that many of the findings were in line with expectations. We highlight below some of the key expected findings:

- *Budget lines on social protection* have a positive impact on the proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet and on agricultural labor productivity.

7 The full results of the estimation are available on request from the authors.

- *Domestic Food Price Volatility Index* has a positive impact on the proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet.
- *Domestic private sector investment in agriculture as a percentage of agriculture value added* has a positive impact on agricultural land productivity.
- *Existence and adequacy of evidence-based policies, supportive institutions, and corresponding human resources* has a positive impact on the percentage of farm, pastoral, and fisher households that are resilient to climate- and weather-related shocks; on the level of improvement of food safety systems (Food Safety Systems Index); and on the Trade Facilitation Index.
- *Existence of government budget lines to respond to spending needs on resilience-building initiatives* has a positive impact on agricultural land productivity and on the growth rate of the value of trade in agricultural commodities and services within Africa.
- *Existence of inclusive institutionalized mechanisms and platforms for mutual accountability and peer review* has a positive impact on the growth rate of the value of trade in agricultural commodities and services within Africa and on the Trade Facilitation Index.
- *Fertilizer consumption (kilograms per hectare of arable land)* has a negative impact on the poverty head count ratio at the international poverty line.
- *Government agriculture expenditure as a percentage of agriculture value added* has a positive impact on the growth rate of the proportion of women who meet the requirements for Minimum Dietary Diversity for Women, on the growth rate of agricultural land productivity, and on the growth rate of agriculture value added.
- *Growth rate of the ratio of supplied quality agriculture inputs* has a positive impact on the proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet and on the growth rate of the value of trade in agricultural commodities and services within Africa.
- *Growth rate of the size of irrigated areas from their value in the year 2000* has a positive impact on the proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet.
- *Index of capacity to generate and use agriculture statistical data and information* has a positive impact on the growth rate of agricultural land and labor productivity and on the proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet while reducing the prevalence (percent) of food-insecure adults.
- *Proportion of adult agricultural population with ownership or secure land rights over agricultural land* has a positive impact on the growth rate of agricultural labor productivity while reducing the prevalence (percent) of food-insecure adults.
- *Proportion of men and women engaged in agriculture with access to financial services* has a positive impact on the proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet.
- *Proportion of rural women who are empowered in agriculture* has a positive impact on the growth rate of agriculture value added.
- *Reduction rate of postharvest losses for (at least) the five national priority commodities* has a negative impact on the prevalence of underweight (percent) among children under 5 years old and a positive impact on the growth rate of agriculture value added and on the growth rate of agricultural labor productivity.
- *Reduction rate of the gap between the wholesale price and farmgate price* has a positive impact on the percentage of farm, pastoral, and fisher households that are resilient to climate- and weather-related shocks.
- *Share of agricultural land under sustainable land management practices* has a positive impact on the growth rate of yields for the five national priority commodities and on the percentage of farm, pastoral, and fisher households that are resilient to climate- and weather-related shocks.
- *Total agricultural research spending as a share of agricultural GDP* has a positive impact on the growth rate of the value of trade in agricultural commodities and services within Africa while reducing the prevalence (percent) of food-insecure adults.

Overall, the findings show that CAADP values and principles help improve policy outcomes, with different levels of magnitude. The impact of recommitting to the CAADP principles and values does influence a few policy outcomes. These

are youth engaged in new job opportunities in agricultural value chains, access to financial services in agriculture, access to agricultural advisory services, existence of government budget lines to respond to spending needs on resilience-building initiatives, and the Trade Facilitation Index. This influence is exerted mainly through the completion of the CAADP process and the presence of evidence-based policies, supportive institutions, and corresponding human resources. The existence and quality of a multisectoral and multistakeholder coordination body has not been shown to have significant impact on policy outcomes. Moreover, completion of the CAADP process, which refers to achieving higher stages of implementation, has a significant and positive impact on only two policy outcomes. This falls short of the expectation that moving further in the CAADP implementation process would consistently produce additional positive policy outcomes.

Conceptually, committing to mutual accountability for results and actions plays a pivotal role in facilitating a better policymaking process and its implementation. The findings show that as more and more countries achieve inclusive institutionalized mechanisms and platforms for mutual accountability, as well as submission of BR reports that satisfy the required parameters, we observe increased public expenditure on agriculture, increased investment, and increased access to finance.

Concluding Remarks and Recommendations

CAADP, initiated by the African Union in 2003, aims to help African countries reach a higher path of economic growth through agriculture-led development. The last three BRs show that more and more countries have joined the BR exercise, and the overall data reporting rate has increased for the continent as a whole. In addition, the prevalence of missing data declined in the successive BRs, although the problem has persisted throughout the BR cycles. The continent has maintained high scores for Malabo thematic areas 1 (committing to the CAADP principles and values) and 7 (committing to mutual accountability for results and actions) during the three BRs. With their perceived contribution in improving the policymaking process, these two thematic areas are expected to improve policy and development outcomes. However, the findings show limited causation.

Overall, the findings underscore the fact that challenges faced by food systems in Africa cannot be attributed to a single factor. Indeed, the use of outdated farming practices and the low adoption rate of improved agricultural technologies have contributed to low productivity. Issues such as monocultures, lack of crop rotation, and poor soil management are still prevalent across the continent. Poor infrastructure such as roads, storage, and processing facilities limits access to markets and increases postharvest losses. Across the continent, some countries have made significant progress in implementing the CAADP/Malabo agenda or related processes, while others face greater challenges. The lack of progress in achieving CAADP/Malabo targets is a result of numerous factors including policy and institutional failures. In general, our findings suggest that commitment to CAADP values and principles has failed to significantly improve some key policy outcomes. Moreover, several policy outcomes (share of public agriculture expenditure in total expenditure, fertilizer consumption per hectare of arable land, supplied quality agriculture inputs as a share of total national input requirements, Food Safety Systems Index, and Food Safety Trade Index) have failed to produce the expected impact on development outcomes.

Africa's journey toward transforming its food systems is still a long and complex road woven with myriad threads of challenges, ambitions, and potential. At the heart of this transformation is the CAADP/Malabo agenda, a continental beacon guiding efforts to revolutionize agricultural systems. As we reflect upon the pivotal drivers shaping this transformation, our findings point to several key factors discussed below.

The bolstering of intra-Africa trade is not just an economic decision; it is a strategic move to ensure that the continent is self-reliant. By boosting internal trade, Africa will improve its food security and foster an environment in which local produce is valued, shared, and traded without heavy reliance on imports. Africa is, unfortunately, at the forefront of climate change impacts. Recognizing this, increasing resilience to climatic fluctuations is paramount. By nurturing crops that can withstand unpredictable weather patterns and using innovative agricultural practices, Africa is laying the foundation for sustainable healthy diets for all Africans. Governments' commitments are highlighted in their budgetary allocations as part of CAADP principles. Similarly, the establishment of dedicated budget lines for resilience-building initiatives shows a proactive approach in foreseeing challenges and planning for them. For Africa's agricultural production to keep pace with its booming population, increasing the yield of priority

commodities is essential as yield growth directly correlates to food security, employment opportunities, and economic stability.

For transformation to occur under the CAADP agenda, investment programs must not be based on whims but on grounded, empirical evidence. Africa's focus on evidence-based policies, backed by strong institutions and skilled human resources, promises a robust and comprehensive approach to the continent's food system overhaul. Moreover, transparency, mutual accountability, and peer review are pillars upon which trust is built. The institutionalized mechanisms for these processes ensure that the journey is not just forward-moving but also transparent and inclusive.

The shrinking gap between wholesale and farmgate prices is indicative of a more equitable distribution system. It ensures that farmers, the backbone of Africa's agriculture, receive a fair share of the gain for their tireless efforts. Lastly, the key to great produce lies in its genesis—the quality of inputs used. By augmenting the supply of quality seeds, fertilizers, and tools, Africa will ensure that its products are not just abundant but also of superior quality.

The inherent complexity of the CAADP agenda means that unexpected results can arise from various sources, be they environmental, economic, or political. Therefore, it is critical to minimize the impact of unexpected outcomes in a comprehensive program like CAADP. They should be minimized, but they also provide learning opportunities, revealing ways to refine and improve the program further.

We would like to close this chapter by highlighting the importance of data to produce policy-relevant evidence in support of the CAADP/Malabo agenda. Accurate, timely, and comprehensive data are paramount to making informed decisions. For the CAADP/Malabo agenda to translate from policy to effective action, policymakers and stakeholders must be armed with quality data. Only with accurate data can the complex dynamics of agricultural systems—involving interrelated factors such as crop yields, weather patterns, and market demand—be understood and addressed. The CAADP/Malabo agenda sets specific targets to be achieved by 2025. Monitoring progress toward these targets necessitates a robust data management system. Only with high-quality data can there be confidence in the reported progress, ensuring that real gains are made. Quality data promote transparency, which in turn fosters accountability. Stakeholders, from farmers to governments and international partners, need to be held accountable for their roles in this transformative journey. Clear, accurate data allow for a transparent review process in which stakeholders can be held accountable for their contributions, or lack thereof.

Beyond monitoring the present, data play a pivotal role in predicting future trends and challenges. With the increasing threat of climate change and evolving global markets, African agriculture must be forward-looking. Quality data feed predictive models, helping stakeholders to anticipate future challenges and opportunities. The success of the CAADP/Malabo agenda is not the responsibility of governments alone but involves private sector players, international partners, and local communities. For these stakeholders to invest time, resources, and capital, they need confidence in the program's viability and effectiveness. Quality data provide the evidence base that can inspire such confidence. High-quality data can shed light on disparities within the agricultural sector, whether they be regional, gender-based, or related to specific crops or practices. Addressing these disparities is crucial to ensuring that the CAADP/Malabo agenda benefits all segments of the population equitably.

Appendix

TABLE A2.1—MALABO BR INDICATORS AND IMPACT PATHWAYS

Label	Thematic area, performance category, and indicator	Impact pathway node
	Thematic area (TA)	
TA1	Recommitting to the CAADP process	Principles and values
TA2	Enhancing investment finance in agriculture	Policy outcome
TA3	Ending hunger by 2025	Development outcome
TA4	Halving poverty through agriculture by 2025	Development outcome
TA5	Boosting intra-African trade in agriculture commodities and services	Development outcome
TA6	Enhancing resilience to climate variability	Development outcome
TA7	Mutual accountability for actions and results	Principles and values
	Performance category (PC)	
PC1.1	Completing national CAADP process	Principles and values
PC1.2	Establishing CAADP-based cooperation, partnership, and alliance	Principles and values
PC1.3	Establishing CAADP-based policy and institutional review, setting, and support	Policies and plans
PC2.1	Public expenditures in agriculture	Policy outcome
PC2.2	Domestic private sector investment in agriculture, agribusiness, and agroindustry	Policy outcome
PC2.3	Foreign private sector investment in agriculture, agribusiness, and agroindustry	Policy outcome
PC2.4	Enhancing access to finance	Policy outcome
PC3.1	Access to agriculture inputs and technologies	Policy outcome
PC3.2	Doubling agricultural productivity	Development outcome
PC3.3	Reduction of postharvest loss	Policy outcome
PC3.4	Strengthening social protection	Policy outcome
PC3.5	Improving food security and nutrition	Development outcome
PC3.6	Food safety	Policy outcome
PC4.1	Sustaining agricultural GDP for poverty reduction	Development outcome
PC4.2	Establishing inclusive PPPs for commodity value chains	Policy outcome
PC4.3	Creating jobs for youth in agricultural value chains	Policy outcome
PC4.4	Women's participation in agribusiness	Policy outcome
PC5.1	Tripling intra-African trade in agriculture commodities and services	Development outcome
PC5.2	Establishing Intra-African trade policies and institutional conditions	Policy outcome

continued

Appendix

TABLE A2.1—MALABO BR INDICATORS AND IMPACT PATHWAYS

Label	Thematic area, performance category, and indicator	Impact pathway node
PC6.1	Ensuring resilience to climate-related risks	Development outcome
PC6.2	Investment in resilience building	Policy outcome
PC7.1	Increasing country capacity for evidence-based planning, implementation, and monitoring and evaluation	Policy outcome
PC7.2	Fostering peer review and mutual accountability process	Principles and values
PC7.3	Conducting a biennial agriculture review process	Principles and values
	Indicator (I)	
I1.1	Country CAADP process	Principles and values
I1.2	Existence of, and quality of, multisectoral and multistakeholder coordination body	Principles and values
I1.3	Existence and adequacy of evidence-based policies, supportive institutions, and corresponding human resources	Policies and plans
I2.1i	Public agriculture expenditure as a share of total public expenditure	Policy outcome
I2.1ii	Public agriculture expenditure as a percentage of agriculture value added	Policy outcome
I2.1iii	Official development assistance disbursed to agriculture as a percentage of commitment	Policy outcome
I2.2	Ratio of domestic private sector investment to public investment in agriculture	Policy outcome
I2.3	Ratio of foreign private direct investment to public investment in agriculture	Policy outcome
I2.4	Proportion of men and women engaged in agriculture with access to financial services	Policy outcome
I3.1i	Fertilizer consumption (kilograms of nutrients per hectare of arable land)	Policy outcome
I3.1ii	Growth rate of the size of irrigated areas from its value in the year 2000	Policy outcome
I3.1iii	Growth rate of the ratio of supplied quality agriculture inputs (seed, breed, fingerlings) to the total national input requirements for the commodity	Policy outcome
I3.1iv	Proportion of farmers having access to agricultural advisory services	Policy outcome
I3.1v	Total agricultural research spending as a share of agricultural GDP	Policy outcome
I3.1vi	Proportion of farm households with ownership or secure land rights	Policy outcome
I3.2i	Growth rate of agriculture value added, in constant US dollars, per agricultural worker	Development outcome
I3.2ii	Growth rate of agriculture value added, in constant US dollars, per hectare of agricultural land	Development outcome
I3.2iii	Growth rate of yields for the 5 national priority commodities	Development outcome
I3.3	Reduction rate of postharvest losses for (at least) the five national priority commodities	Policy outcome
I3.4	Budget lines (%) on social protection as a percentage of the total resource requirements for coverage of the vulnerable social groups	Policy outcome
I3.5i	Prevalence of stunting (%) among children under 5 years old	Development outcome

continued

Appendix

TABLE A2.1—MALABO BR INDICATORS AND IMPACT PATHWAYS

Label	Thematic area, performance category, and indicator	Impact pathway node
I3.5ii	Prevalence of underweight (%) among children under 5 years old	Development outcome
I3.5iii	Prevalence of wasting (%) among children under 5 years old	Development outcome
I3.5iv	Prevalence of undernourished (% of the country's population)	Development outcome
I3.5v	Growth rate of the proportion of women who meet the requirements for minimum dietary diversity for women	Development outcome
I3.5vi	Proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet	Development outcome
I3.5vii	Prevalence of moderate and severe food insecurity in the population	Development outcome
I3.6i	Food Safety Systems Indicator	Policy outcome
I3.6ii	Food Safety Health Indicator	Policy outcome
I3.6iii	Food Safety Trade Indicator	Policy outcome
I4.1i	Growth rate of agriculture value added	Development outcome
I4.1ii	Agriculture contribution to overall poverty reduction target	Development outcome
I4.1iii	Reduction rate of poverty head count ratio at national poverty line (% of population)	Development outcome
I4.1iv	Reduction rate of poverty head count ratio at international poverty line (% of population)	Development outcome
I4.1v	Reduction rate of the gap between the wholesale price and farmgate price	Policy outcome
I4.2	Number of priority agricultural commodity value chains for which a PPP is established with strong linkages to smallholder agriculture	Policy outcome
I4.3	Percentage of youth engaged in new job opportunities in agricultural value chains	Policy outcome
I4.4	Proportion of rural women who are empowered in agriculture	Policy outcome
I5.1	Growth rate of the value of trade in agricultural commodities and services within Africa	Development outcome
I5.2i	Trade Facilitation Index	Policy outcome
I5.2ii	Domestic Food Price Volatility Index	Policy outcome
I6.1i	Percentage of farm, pastoral, and fisher households that are resilient to climate- and weather-related shocks	Development outcome
I6.1ii	Share of agricultural land under sustainable land management practices	Policy outcome
I6.2	Existence of government budget lines to respond to spending needs on resilience-building initiatives	Policy outcome
I7.1	Index of capacity to generate and use agriculture statistical data and information (Agricultural Statistics Capacity Index)	Policy outcome
I7.2	Existence of inclusive institutionalized mechanisms and platforms for mutual accountability and peer review	Principles and values
I7.3	Country BR report submission	Principles and values

Source: Authors' synthesis based on Benin, Ulimwengu, and Tefera (2018).
Note: BR = Biennial Review; PPP = public–private partnership. PC3.6, I3.5vii, I3.6i, I3.6ii, and I3.6iii were introduced after the second BR.

Appendix

TABLE A2.2—NUMBER OF VALID OBSERVATIONS BY INDICATOR FOR ALL REPORTING COUNTRIES

Indicator	Number of valid observations					
	Including reported zeros			Excluding reported zeros		
	First BR	Second BR	Third BR	First BR	Second BR	Third BR
I1.1	47	49	51	43	48	49
I1.2	47	49	50	42	47	49
I1.3	47	49	50	44	49	47
I2.1i	44	49	49	44	49	49
I2.1ii	44	46	48	44	46	48
I21.iii	36	44	43	36	44	43
I2.2	39	—	33	38	—	32
I2.3	39	—	27	29	—	26
I2.4	34	39	40	33	39	40
I3.1i	45	42	44	45	42	44
I3.1ii	41	41	44	40	38	41
I3.1iii	24	42	26	23	36	26
I3.1iv	40	41	44	40	41	43
I3.1v	36	42	46	36	42	46
I3.1vi	32	36	38	32	36	38
I3.2i	30	30	35	30	30	35
I3.2ii	42	35	37	41	35	37
I3.2iii	35	45	39	34	45	39
I3.3	7	19	26	7	19	26
I3.4	26	27	40	26	27	40
I3.5i	38	45	43	38	45	42
I3.5ii	39	44	43	39	44	41
I3.5iii	40	48	41	40	48	40
I3.5iv	32	33	40	32	33	40
I3.5v	7	15	21	7	9	15

TABLE A2.2—NUMBER OF VALID OBSERVATIONS BY INDICATOR FOR ALL REPORTING COUNTRIES

Indicator	Number of valid observations					
	Including reported zeros			Excluding reported zeros		
	First BR	Second BR	Third BR	First BR	Second BR	Third BR
I3.5vi	33	30	37	33	30	35
I3.5vii	—	22	32	—	20	30
I3.6i	—	49	51	—	47	49
I3.6ii	—	25	21	—	25	21
I3.6iii	—	7	6	—	7	6
I4.1i	47	40	43	46	40	43
I4.1ii	—	—	—	—	—	—
I4.1iii	13	36	39	13	12	24
I4.1iv	6	23	17	6	6	17
I4.1v	23	15	22	23	15	22
I4.2	47	18	38	16	18	23
I4.3	22	32	37	22	32	37
I4.4	19	22	29	19	22	29
I5.1	29	38	27	29	38	27
I5.2i	35	48	43	35	48	43
I5.2ii	32	45	47	32	35	47
I6.1i	19	25	33	19	25	33
I6.1ii	30	36	42	30	36	42
I6.2	47	49	51	35	46	48
I7.1	26	46	45	25	46	45
I7.2	47	49	51	32	47	50
I7.3	47	49	51	47	49	51

Source: AUC (2018, 2020, 2022).
Note: BR = Biennial Review. —= data not available .

Appendix

TABLE A2.3—SUMMARY OF PERFORMANCE IN CAADP PROCESS AND MUTUAL ACCOUNTABILITY, 2015–2020

	T-Score in thematic area			C-Score in performance category									Progress on indicator								
CAADP process	**TA1**			**PC1.1**			**PC1.2**			**PC1.3**			**I1.1**			**I1.2**			**I1.3**		
	BR1	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**
Target Progress	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	100%	100%	100%	100%	100%	100%	100%	100%	100%
Africa	5.53	7.29	7.28	5.94	7.14	7.70	4.69	7.96	7.13	5.95	6.76	7.00	63.16%	74.12%	81.51%	47.95%	82.63%	75.51%	62.86%	70.19%	74.17%
Central	5.33	7.29	6.68	5.24	7.32	6.43	4.93	8.08	7.33	5.82	6.46	6.30	57.14%	83.67%	73.47%	50.51%	92.35%	83.75%	59.44%	73.83%	71.96%
Eastern	6.59	7.01	7.89	9.58	6.92	8.31	4.54	7.59	8.13	5.66	6.51	7.23	88.32%	75.00%	83.33%	40.34%	82.24%	82.89%	59.27%	70.55%	73.48%
Northern	3.66	4.10	6.77	2.50	4.29	8.81	4.20	4.29	5.40	4.28	3.72	6.11	25.00%	50.00%	88.10%	41.96%	50.00%	54.04%	42.82%	43.40%	61.09%
Southern	5.72	7.50	6.55	5.12	6.19	6.02	4.50	9.08	7.20	7.54	7.25	6.42	50.00%	61.90%	68.83%	48.30%	90.75%	82.56%	72.75%	72.47%	73.80%
Western	6.33	8.85	8.03	7.26	9.33	9.05	5.28	9.05	6.92	6.44	8.18	8.13	72.60%	93.33%	90.48%	52.80%	90.46%	69.19%	64.39%	81.79%	81.25%
Mutual accountability	**TA7**			**PC7.1**			**PC7.2**			**PC7.3**			**I7.1**			**I7.2**			**I7.3**		
	BR1	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**	**BR1**	**BR2**	**BR3**
Target Progress	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	63%	69%	69%	100%	100%	100%	100%	100%	100%
Africa	5.35	5.98	6.26	2.12	3.20	3.35	4.70	6.60	7.37	9.22	8.14	8.06	52.44%	57.38%	57.54%	49.53%	68.50%	74.19%	92.44%	84.47%	80.91%
Central	3.04	4.89	4.71	0.00	0.72	0.14	0.40	6.11	6.77	8.71	7.85	7.23	29.00%	41.00%	44.48%	4.51%	69.84%	67.71%	86.95%	89.68%	72.49%
Eastern	7.16	5.58	6.59	4.70	2.99	3.92	7.19	5.98	7.58	9.60	7.75	8.27	56.86%	63.16%	61.56%	66.36%	64.81%	67.06%	95.65%	83.95%	73.23%
Northern	5.15	3.95	6.53	2.50	4.07	6.41	3.82	3.69	5.28	9.13	4.10	7.90	68.10%	70.10%	70.03%	38.19%	43.06%	52.78%	91.30%	47.78%	78.95%
Southern	5.94	6.95	6.14	2.09	3.91	3.86	6.39	7.48	7.06	9.35	9.48	7.49	57.47%	56.06%	59.24%	62.04%	74.77%	81.94%	93.08%	94.76%	85.70%
Western	5.45	7.08	6.86	1.32	3.73	2.95	5.69	8.06	8.67	9.33	9.45	8.95	45.53%	58.60%	56.38%	56.94%	80.56%	86.67%	93.29%	94.52%	89.52%

Source: Authors' calculations based on AUC (2018, 2020, and 2022).
Note: BR = Biennial Review; CAADP = Comprehensive Africa Agriculture Development Programme; n.a. = not applicable.

Appendix

TABLE A2.4—CORRELATION BETWEEN RECOMMITTING TO CAADP PROCESS AND MUTUAL ACCOUNTABILITY AND PROGRESS MADE IN OTHER MALABO COMMITMENTS, 2015–2020

Label	Malabo thematic area, performance category, or indicator	CAADP process (T-Score)						Mutual accountability (T-Score)					
		First BR		Second BR		Third BR		First BR		Second BR		Third BR	
		Coef.	P value	Coef.	P value	Coef.	P-value	Coef.	P value	Coef.	P value	Coef.	P-value
Malabo thematic area (T-Score)													
TA2	Enhancing Investment finance in agriculture	-0.057	0.703	0.273	0.057*	0.148	0.301	0.217	0.143	0.437	0.002***	0.376	0.007***
TA3	Ending hunger by 2025	0.361	0.013**	0.462	0.001***	0.290	0.033**	0.704	0.000***	0.436	0.002***	0.657	0.000***
TA4	Halving poverty through agriculture by 2025	0.140	0.348	0.513	0.001***	0.361	0.009***	0.328	0.025**	0.594	0.000***	0.560	0.000***
TA5	Boosting intra-African trade in agriculture commodities and services	0.175	0.239	0.412	0.004***	0.0317	0.825	0.429	0.003***	0.146	0.321	0.363	0.009***
TA6	Enhancing resilience to climate variability	0.381	0.008***	0.189	0.200	0.414	0.003***	0.509	0.000***	0.428	0.003***	0.498	0.000***
Performance category (C-Score)													
PC2.1	Public expenditures in agriculture	-0.007	0.961	0.375	0.001***	0.332	0.017**	0.252	0.087*	0.445	0.001***	0.418	0.002***
PC2.2	Domestic private sector investment in agriculture, agribusiness, and agroindustry	—	—	—	—	0.0508	0.723	—	—	—	—	0.313	0.026***
PC2.3	Foreign private sector investment in agriculture, agribusiness, and agroindustry	—	—	—	—	-0.030	0.835	—	—	—	—	0.075	0.601
PC2.4	Enhancing access to finance	-0.062	0.679	0.073	0.619	0.180	0.205	0.058	0.696	0.241	0.096*	0.322	0.021**
PC3.1	Access to agriculture inputs and technologies	0.273	0.063*	0.325	0.023**	0.365	0.008***	0.510	0.000***	0.578	0.000***	0.542	0.000***
PC3.2	Doubling agricultural productivity	0.001	0.996	0.089	0.542	0.163	0.254	0.090	0.547	0.054	0.714	0.219	0.123
PC3.3	Reduction of postharvest loss	0.260	0.077*	0.312	0.029**	0.139	0.331	0.329	0.024**	0.138	0.344	0.244	0.085*
PC3.4	Strengthening social protection	0.238	0.107	0.319	0.025**	0.108	0.451	0.522	0.000***	0.261	0.069*	0.571	0.000***
PC3.5	Improving food security and nutrition	0.261	0.076*	0.246	0.089*	0.336	0.016**	0.419	0.003***	0.243	0.092*	0.438	0.001***
PC3.6	Food safety	—	—	0.275	0.561*	0.121	0.399	—	—	0.299	0.037	0.465	0.001***
PC4.1	Sustaining agricultural GDP for poverty reduction	0.084	0.573	0.349	0.031**	0.242	0.087*	-0.011	0.939	0.150	0.369	0.419	0.002***

continued

Appendix

TABLE A2.4—CORRELATION BETWEEN RECOMMITTING TO CAADP PROCESS AND MUTUAL ACCOUNTABILITY AND PROGRESS MADE IN OTHER MALABO COMMITMENTS, 2015–2020

Label	Malabo thematic area, performance category, or indicator	CAADP process (T-Score)						Mutual accountability (T-Score)					
		First BR		Second BR		Third BR		First BR		Second BR		Third BR	
		Coef.	P value	Coef.	P value	Coef.	P-value	Coef.	P value	Coef.	P value	Coef.	P-value
PC4.2	Establishing inclusive PPPs for commodity value chains	0.303	0.039**	0.323	0.047**	0.226	0.110	0.515	0.000***	0.476	0.002***	0.464	0.001***
PC4.3	Creating jobs for youth in agricultural value chains	-0.017	0.908	0.355	0.029**	0.352	0.011**	0.171	0.250	0.253	0.125	0.355	0.011***
PC4.4	Women's participation in agribusiness	-0.042	0.776	0.235	0.156	0.206	0.146	-0.057	0.704	0.396	0.014**	0.373	0.007***
PC5.1	Tripling intra-African trade in agriculture commodities and services	-0.057	0.701	0.131	0.376	-0.188	0.186	0.159	0.287	-0.086	0.559	0.188	0.187
PC5.2	Establishing intra-African trade policies and institutional conditions	0.208	0.161	0.429	0.002***	0.309	0.027**	0.362	0.012**	0.295	0.042**	0.397	0.004***
PC6.1	Ensuring resilience to climate-related risks	0.222	0.134	0.098	0.511	0.339	0.015**	0.269	0.067*	0.375	0.009***	0.359	0.010***
PC6.2	Investment in resilience building	0.319	0.029**	0.302	0.039**	0.394	0.004***	0.457	0.001***	0.339	0.019**	0.551	0.000***
Indicator													
I2.1i	Public agriculture expenditure as share of total public expenditure	0.033	0.833	0.456	0.001***	0.368	0.008***	0.173	0.261	0.435	0.002***	0.352	0.011***
I2.1ii	Public agriculture expenditure as % of agriculture value added	-0.082	0.594	-0.172	0.265	0.096	0.505	0.211	0.169	0.105	0.496	0.147	0.302
I2.1iii	Official development assistance disbursed to agriculture as % of commitment	0.008	0.962	0.354	0.018**	0.259*	0.066*	-0.060	0.727	0.000	0.998	0.419	0.002***
I2.2	Ratio of domestic private sector investment to public investment in agriculture	-0.043	0.797	—	—	0.051	0.723	0.012	0.943	—	—	0.313	0.026**
I2.3	Ratio of foreign private direct investment to public investment in agriculture	0.135	0.413	—	—	-0.030	0.835	-0.192	0.242	—	—	0.075	0.601
I2.4	Proportion of men and women engaged in agriculture with access to financial services	-0.048	0.786	-0.096	0.566	0.180	0.205	0.031	0.864	0.187	0.259	0.322	0.021**
I3.1i	Fertilizer consumption (kilograms of nutrients per hectare of arable land)	0.054	0.723	0.025	0.893	0.190	0.181	0.059	0.701	0.415	0.018**	0.518	0.000***

continued

Appendix

TABLE A2.4—CORRELATION BETWEEN RECOMMITTING TO CAADP PROCESS AND MUTUAL ACCOUNTABILITY AND PROGRESS MADE IN OTHER MALABO COMMITMENTS, 2015–2020

Label	Malabo thematic area, performance category, or indicator	CAADP process (T-Score)						Mutual accountability (T-Score)					
		First BR		Second BR		Third BR		First BR		Second BR		Third BR	
		Coef.	P value	Coef.	P value	Coef.	P-value	Coef.	P value	Coef.	P value	Coef.	P-value
I3.1ii	Growth rate of the size of irrigated areas from its value in the year 2000	0.078	0.627	0.080	0.652	0.054	0.705	0.055	0.732	-0.059	0.741	0.101	0.483
I3.1iii	Growth rate of the ratio of supplied quality agriculture inputs (seed, breed, fingerlings) to the total national input requirements for the commodity	0.266	0.209	-0.238	0.298	0.240	0.090*	0.435	0.034**	-0.171	0.460	0.184	0.195
I3.1iv	Proportion of farmers having access to agricultural advisory services	0.044	0.789	0.064	0.692	0.268	0.058*	0.160	0.324	0.495	0.001***	0.572	0.000***
I3.1v	Total agricultural research spending as a share of agricultural GDP	-0.020	0.909	-0.041	0.801	0.201	0.157	0.160	0.350	0.165	0.301	0.204	0.152
I3.1vi	Proportion of farm households with ownership or secure land rights	-0.229	0.208	-0.094	0.597	0.234	0.098*	-0.148	0.420	0.227	0.196	0.191	0.180
I3.2i	Growth rate of agriculture value added, in constant US dollars, per agricultural worker	0.122	0.520	0.086	0.752	0.196	0.167	-0.139	0.464	-0.142	0.599	0.0572	0.690
I3.2ii	Growth rate of agriculture value added, in constant US dollars, per hectare of agricultural arable land	0.049	0.756	0.101	0.617	0.129	0.369	-0.064	0.687	-0.156	0.429	0.094	0.511
I3.2iii	Growth rate of yields for the national priority commodities	-0.119	0.496	-0.193	0.344	0.008	0.954	-0.017	0.921	-0.034	0.867	0.327	0.019**
I3.3	Reduction rate of postharvest losses for (at least) the 5 national priority commodities	-0.560	0.191	-0.077	0.813	0.139	0.331	0.422	0.345	-0.238	0.455	0.244	0.085*
I3.4	Budget lines (%) on social protection as percentage of the total resource requirements for coverage of the vulnerable social groups	0.282	0.163	-0.162	0.420	0.108	0.451	0.644	0.000***	0.061	0.761	0.571	0.000***
I3.5i	Prevalence of stunting (%) among children under 5 years old	-0.252	0.128	-0.424	0.044**	0.078	0.589	0.005	0.974	0.049	0.822	0.285	0.043**
I3.5ii	Prevalence of underweight (%) among children under 5 years old	-0.076	0.643	0.030	0.905	0.0706	0.622	-0.258	0.112	-0.135	0.594	0.199	0.162

continued

Appendix

TABLE A2.4—CORRELATION BETWEEN RECOMMITTING TO CAADP PROCESS AND MUTUAL ACCOUNTABILITY AND PROGRESS MADE IN OTHER MALABO COMMITMENTS, 2015–2020

Label	Malabo thematic area, performance category, or indicator	CAADP process (T-Score)						Mutual accountability (T-Score)					
		First BR		Second BR		Third BR		First BR		Second BR		Third BR	
		Coef.	P value	Coef.	P value	Coef.	P-value	Coef.	P value	Coef.	P value	Coef.	P-value
I3.5iii	Prevalence of wasting (%) among children under 5 years old	-0.040	0.807	-0.097	0.622	0.336	0.016**	-0.304	0.056*	-0.061	0.758	0.157	0.272
I3.5iv	Proportion of the population that is undernourished	0.109	0.552	0.164	0.515	0.453	0.001***	-0.025	0.890	0.442	0.066	0.458	0.001***
I3.5v	Growth rate of the proportion of women who meet the requirements for minimum dietary diversity for women	0.143	0.760	0.382	0.526	-0.207	0.146	0.027	0.954	-0.049	0.937	0.033	0.821
I3.5vi	Proportion of 6- to 23-month-old children who meet the requirements for a minimum acceptable diet	0.026	0.887	-0.583	0.099*	0.085	0.554	-0.092	0.612	-0.474	0.197	0.049	0.731
I3.5vii	Prevalence of moderate and severe food insecurity in the population	—	—	-0.063	0.829	0.174	0.222	—	—	0.010	0.972	0.317	0.023**
I3.6i	Food Safety Systems Indicator	—	—	0.371	0.010**	0.135	0.346	—	—	0.443	0.002***	0.577	0.000***
I3.6ii	Food Safety Health Indicator	—	—	-0.288	0.262	0.030	0.835	—	—	-0.300	0.242	0.134	0.349
I3.6iii	Food Safety Trade Indicator	—	—	—	—	0.093	0.515	—	—	—	—	0.211	0.137
I4.1i	Growth rate of agriculture value added	0.066	0.660	0.411	0.072*	0.136	0.342	-0.004	0.978	0.228	0.334	0.272	0.053*
I4.1ii	Agriculture contribution to overall poverty reduction target	—	—	—	—	—	—	—	—	—	—	—	—
I4.1iii	Reduction rate of poverty head count ratio at national poverty line (% of population)	0.147	0.631	0.134	0.774	0.104	0.469	-0.181	0.555	0.513	0.239	0.314	0.025**
I4.1iv	Reduction rate of poverty head count ratio at international poverty line (% of population)	-0.136	0.798	0.189	0.760	0.006	0.965	-0.355	0.490	0.140	0.822	0.389	0.005***
I4.1v	Reduction rate of the gap between the wholesale price and farmgate price	0.163	0.457	-0.408	0.315	0.249	0.078*	0.021	0.923	-0.637	0.089*	0.221	0.119
I4.2	Number of priority agricultural commodity value chains for which a PPP is established with strong linkages to smallholder agriculture	0.217	0.142	0.258	0.301	0.226	0.110	0.460	0.001***	0.529	0.024**	0.464	0.001***

continued

Appendix

TABLE A2.4—CORRELATION BETWEEN RECOMMITTING TO CAADP PROCESS AND MUTUAL ACCOUNTABILITY AND PROGRESS MADE IN OTHER MALABO COMMITMENTS, 2015–2020

Label	Malabo thematic area, performance category, or indicator	CAADP process (T-Score)						Mutual accountability (T-Score)					
		First BR		Second BR		Third BR		First BR		Second BR		Third BR	
		Coef.	P value	Coef.	P value	Coef.	P-value	Coef.	P value	Coef.	P value	Coef.	P-value
I4.3	Percentage of youth engaged in new job opportunities in agricultural value chains	-0.185	0.410	0.345	0.072	0.352	0.011**	-0.145	0.520	0.064	0.745	0.355	0.011**
I4.4	Proportion of rural women who are empowered in agriculture	-0.181	0.459	0.364	0.126	0.206	0.146	0.064	0.793	0.499	0.029**	0.373	0.007***
I5.1	Growth rate of the value of trade in agricultural commodities and services within Africa	-0.110	0.571	0.085	0.666	-0.188	0.186	0.072	0.710	-0.288	0.137	0.188	0.187
I5.2i	Trade Facilitation Index	-0.077	0.659	-0.146	0.321	0.400	0.004***	-0.036	0.836	-0.024	0.870	0.446	0.001***
I5.2ii	Domestic Food Price Volatility Index	0.287	0.112	-0.093	0.632	0.022	0.881	0.036	0.845	-0.072	0.709	0.129	0.367
I6.1i	Percentage of farm, pastoral, and fisher households that are resilient to climate- and weather-related shocks	-0.164	0.503	0.079	0.708	0.292	0.038**	-0.293	0.224	0.532	0.006***	0.398	0.004***
I6.1ii	Share of agricultural land under sustainable land management practices	-0.222	0.239	-0.082	0.655	0.272	0.054*	-0.049	0.797	0.063	0.732	0.195	0.170
I6.2	Existence of government budget lines to respond to spending needs on resilience-building initiatives	0.319	0.029**	0.358	0.015**	0.394	0.004***	0.457	0.001***	0.359	0.014**	0.551	0.000***

Source: Authors' calculations based on AUC (2018, 2020, and 2022).
Note: ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively. — = data not available.