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**African Commitments For Agricultural Development:  
Goals And Milestones For Mozambique**

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## **Abstract**

Mozambique is a signatory to the Comprehensive Africa Agriculture Development Programme (CAADP) and the 2014 Malabo Declaration on Accelerated Growth and Transformation for Shared Prosperity and Improved Livelihoods that commit the country to achieve a 6% annual agricultural growth rate, 10% agricultural expenditure share, ending hunger and halving poverty. Additionally, Mozambique has signed the African Union Agenda 2063 and has committed to achieving the Sustainable Development Goals (SDGs). A Results Framework is applied to address the CAADP/Malabo, SDGs and Agenda 2063 goals to translate Mozambique's agricultural development agenda into tangible outcomes. The framework utilizes an economy-wide general equilibrium model and a microsimulation model which are linked in a sequential manner. The modelling results reveal that the Business as Usual (BaU) growth strategy is insufficient to meet the goals of the three agendas. Hence, other paths that might yield better results are investigated. The analysis then investigates the impacts of the prioritization of agriculture sub-sectors and commodities, and agricultural value-chain investment strategies. The results show that public investment-led productivity increases in agriculture contribute more across all the indicators on the production and consumption side. Indeed, agriculture contributes more than industry and services to number of jobs created, food expenditure and consumption expenditure growth, and the same as industry to gross domestic product growth. The investments are best financed by budget constraint and external financing, which bring about positive impacts on socioeconomic outcomes when compared to the BaU. The analysis further reveals agricultural commodities with the highest contribution to agricultural development. This information is then used to design an accelerated agricultural investment strategy. Results from this scenario show that Mozambique makes substantial progress in meeting the commitments of the three agendas and this allows to provide recommendations for a successful agricultural investment planning, design and implementation for the country.

## **Resume**

Le Mozambique est signataire du Programme Détaillé de Développement de l'Agriculture Africaine (PDDAA) et de la Déclaration de Malabo de 2014 sur la croissance et la transformation accélérées pour une prospérité partagée et des moyens de subsistance améliorés qui engagent le pays à atteindre un taux de croissance agricole annuel de 6%, une part des dépenses agricoles de 10%, mettre fin à la faim et réduire de moitié la pauvreté. En outre, le Mozambique a signé l'Agenda 2063 de l'Union africaine et s'est engagé à atteindre les Objectifs de Développement Durable (ODD). Un cadre de résultats est appliqué pour répondre aux objectifs du PDDAA/Malabo, des ODD et de l'Agenda 2063 afin de traduire le programme de développement agricole du Mozambique en résultats tangibles. Le cadre utilise un modèle d'équilibre général à l'échelle de l'économie et un modèle de microsimulation qui sont liés de manière séquentielle. Les résultats de la modélisation révèlent que la stratégie de croissance du Business as Usual (BaU) est insuffisante pour atteindre les objectifs des trois programmes. Par conséquent, d'autres voies qui pourraient donner de meilleurs résultats sont étudiées. L'analyse examine ensuite les impacts de la priorisation des sous-secteurs et des produits agricoles, et des stratégies d'investissement dans la chaîne de valeur agricole. Les résultats montrent que l'augmentation de la productivité tirée par l'investissement public dans l'agriculture contribue davantage à tous les indicateurs du côté de la production et de la consommation. En effet, l'agriculture contribue plus que l'industrie et les services au nombre d'emplois créés, à la croissance des dépenses alimentaires et de la consommation, et au même titre que l'industrie à la croissance du produit intérieur brut. Les investissements sont mieux financés par des contraintes budgétaires et des financements externes, qui ont des impacts positifs sur les résultats socio-économiques par rapport au BaU. L'analyse révèle en outre les produits agricoles ayant la plus forte contribution au développement agricole. Ces informations sont ensuite utilisées pour concevoir une stratégie d'investissement agricole accélérée. Les résultats de ce scénario montrent que le Mozambique fait des progrès substantiels dans le respect des engagements des trois programmes et cela permet de fournir des recommandations pour une planification, une conception et une mise en œuvre réussies des investissements agricoles pour le pays.

## **1. Introduction**

Building on the Comprehensive Africa Agriculture Development Programme (CAADP) signed by African Heads of State and Government (AU/NEPAD, 2003), the 2014 Malabo Declaration on Accelerated Growth and Transformation for Shared Prosperity and Improved Livelihoods upheld the original Maputo commitment of achieving a 6% annual agricultural growth rate and a 10% agricultural expenditure as a share of total public expenditure (AU/NEPAD, 2014). The seven priority areas of the 2014 Malabo Declaration marked a strong commitment to the goals of improving investments in agricultural production, ending hunger and halving poverty, boosting intra-African trade in agricultural commodities and services, enhancing resilience to climate variability and other related risks, as well as the goal of creating mutual accountability to actions and results through a review process of the progress made in implementing the provisions of the Declaration. At the same time, countries have signed on to the African Union (AU) Agenda 2063 as well as the United Nations (UN) Sustainable Development Goals (SDGs) – both of which committed to accelerating economic growth and eradicating poverty and inequality, among several other goals. A key challenge to implementing these commitments is that they involve a large number of obligations and goals. To address the CAADP/Malabo, SDGs and Agenda 2063 goals, a Results Framework has been developed as a key tool for translating Africa's agricultural development agenda into tangible outcomes. This paper applies this Results Framework to Mozambique.

Mozambique is located in Southern Africa with a total land size of 801 590 square kilometres and a total population of 28 million people (UN, 2017). About 46% of the population is younger than 15 years of age and only 3% is older than 65 years of age. The country is ranked as one of the poorest nations in the world. In 2015, it ranked 180 out of 188 countries using the UN Human Development Index (HDI). Its poor country status has remained unchanged over the past two decades, despite Mozambique registering a positive economic growth of 7% per annum on average between 1997 and 2014 (UN 2017). The economy is largely dependent on the agricultural sector, with 89% of households involved in agricultural activities and 73% of its total employment created either directly or indirectly from this sector (World Bank, 2018; and ReSAKSS, 2017). Economic data from the World Bank (2018) and ReSAKSS (2017) indicates that almost a quarter of Mozambique's Gross Domestic Products (GDP) is generated from agricultural activities. Furthermore, the Food and Agriculture Organization (FAO) (2018) finds that 10% of total arable land in Mozambique (estimated at 36 million hectares) is used for agricultural production – where 97% of land users are smallholder farmers producing close to 95% of total agricultural output. There are about 400 commercial farmers producing the rest of the agricultural output in the country. The expansion of value added for land under agricultural production is constrained by weak institutions, limited investments and lack of essential infrastructure such as access to water and energy (FAO, 2018).

The rest of the paper is organised in four sections. Section 2 discusses the coherence of national and international agricultural development policies and builds an integrated result framework to assist the tracking, monitoring and reporting on progress and facilitates mutual learning and accountability. Section 3 gives an overview of the agricultural investment and growth simulation model. Section 4 analyses the prospect for agricultural development in Mozambique. It starts with an 11-year (2015-2025) projection of the pre-Malabo (2011-2014) economic performances and trends, including the agricultural sector. Because the Business as Usual (BaU) growth strategy will miss most of the goals of the three Agendas, other paths that might yield better results are investigated. Thus, the analysis shifts focus to the prioritization of agriculture sub-sectors and commodities, and agricultural value-chain investment strategies. From this information, an accelerated agricultural investment strategy is designed and milestones are defined to inform a different growth path than the BaU. Finally, the conclusion, in section 5, summarizes the main findings of the study and provides recommendations for a successful agricultural investment planning, design and implementation.

## **2. Policy Coherence and Agricultural Development Goals**

This section presents national and international agendas that drive Mozambique's agricultural development. At the international level, Mozambique is committed to the CAADP/Malabo Declaration and the Agenda 2063 of the AU and the SDGs of the UN. At the national level, the policies taken into account include the government's Five-Year Program (PQG) and the Poverty Reduction Action Plan (PARP). In addition to these two national policy plans, there is an agricultural sector strategy called the Strategic Plan for the Development of the Agricultural Sector (PEDSA) developed in 2010. PEDSA is operationalized through the Plan of the Agricultural Sector (PNISA).

### *2.1 National Agricultural Development Strategies*

Mozambique's economy is centred around the agricultural sector, which constitutes almost a quarter of total GDP, contributes 18% to the country's total exports and creates 73% of the country's employment (ReSAKSS, 2017; World Bank, 2018). Due to this importance, the agricultural sector forms a central part of the government's developmental strategy. There are two national policies or overarching strategies that have been developed for the economy in order to reduce poverty, promote peace and harmony, sustain the environment, inspire inclusivity, stimulate rural development and create jobs (Table 1). These are the PQG and the PARP. Both plans are reviewed every five years. The first implementation phase of these plans was between 2010 and 2014, while the second phase covered the period between 2015 and 2019. The current primary countrywide strategy for the Mozambique government as set forth by the PQG for 2015 to 2019 focuses on three development elements namely: improving education, achieving good governance, and enhancing rural development (MFA, 2016:5).

According to the Ministry of Agriculture and Food Security (MOAFS, 2014) in Mozambique, the implementation of PQG and PARP are monitored annually through the Economic and Social Plan (PES), which is monitored by the Mozambican Parliament. The budget allocation for implementing the PQG and PARP is set out in the Medium-Term Fiscal Framework (CFMP), which is also aligned to timelines of both the PQG and PARP. These two broad national policies are designed to also promote regional and global cooperation and development. As a result, these policies are developed to help the country contribute to the goals of the CAADP/Malabo Declaration, the Africa Agenda 2063, the United Nations Agenda 2030 (i.e. the 17 SDGs), as well as other regional strategies<sup>1</sup>.

In addition to the aforementioned multisectoral or country-wide plans and strategies, the MOAFS developed sector-specific investment and developmental plans for the agricultural sector (Table 1). The sector specific strategy is documented in the PEDSA developed in 2010, covering the period between 2010 and 2020. The development of PEDSA is based on a need to improve agricultural value chains and production (taking into consideration the development and transfer of required technologies); provide agricultural inputs; encourage processing and marketing activities that add value to agricultural crops, livestock, forestry, fisheries and wildlife products; as well as the need to create sustainable natural resource management (MASA, 2010:vi). By implementing PEDSA, the government of Mozambique seeks not only to achieve its domestic agricultural developmental goals, but to also achieve the aspirations and goals set out by CAADP (MASA, 2010:2). PEDSA is operationalized through the PNISA, which is an investment plan for the agricultural sector that is aligned with PQG and CAADP principles, i.e. investing 10% of government expenditure in agriculture. The timeline for the PNISA implementation was from 2014 to 2018. Through the implementation of a countrywide strategy and agriculture specific strategies and plans, the government of Mozambique aspires to reduce poverty, strengthen public institutions and work ethics, improve human development and promote an inclusive economic growth that leads to peace and harmony (MASA, 2010:7; MASA, 2017:1).

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<sup>1</sup> Such as Regional Indicative Strategic Development Plan (RISDP) of the Southern African Development Community (SADC) which guide the regional integration within the SADC region.



*Table 1-Summary of countrywide and agriculture sector specific policies for Mozambique*

<b>Economywide policy documents</b>	<b>Sector-specific policy documents</b>
Five-year Program (PQG): 2015-2019  Actional Plan for the Reduction of Poverty (PARP): 2015-2019  Medium-Term Fiscal Framework (CFMP): 2015-2019  Economic and Social Plan (PES): Annually	National Investment Plan for the Agricultural Sector (PNISA): 2014-2018. Implement following policies: <ul style="list-style-type: none"> <li>➤ Strategy for Food Security and Nutrition (ESAN): 2008-2015</li> <li>➤ Fishery Master Plan: 2010 – 2019</li> <li>➤ Development Plan for Small Scale Aquaculture (PDAPG): 2009 -2013</li> <li>➤ Reduction of Chronic Malnutrition (PAMRDC): 2011-2020</li> </ul>

## *2.2 CAADP/Malabo Commitments and Goals*

CAADP is Africa’s policy framework for agricultural transformation, wealth creation, food security and nutrition, economic growth and prosperity for all (AU/NEPAD, 2003). It was adopted in Maputo in 2003 by the African heads of states and government. In 2014, the AU heads of states and government evaluated the achievements of CAADP in the first 10 years of implementation (2003-2013) and also identified areas that needed to be strengthened to realize the aspirations of CAADP. They then adopted the Malabo Declaration on CAADP which is a statement that entails further commitments on pursuing the goals of CAADP. The Malabo Declaration was adopted in 2014 with seven priority areas or commitment areas which are (AU/NEPAD (2014)):

- Commitment I: Retain the principles and values of the CAADP process;
- Commitment II: Enhancing Investment Finance in Agriculture;
- Commitment III: Ending Hunger in Africa by 2025 using the following approaches:
  - a) accelerate agricultural growth by at least doubling current agricultural productivity levels, by the year 2025
  - b) integrate measures for increased agricultural productivity with social protection initiatives focusing on vulnerable social groups;
- Commitment IV: Halving poverty by the year 2025 through Inclusive Agricultural Growth and Transformation for the following reasons:
  - a) to ensure that the agricultural growth and transformation process is inclusive and contributes at least 50% to the overall poverty reduction target with the aid of the

creation and enhancement of the appropriate policy, institutional and budgetary support conditions

- b) to sustain annual agricultural GDP growth of at least 6%
  - c) to establish and/or strengthen inclusive public-private partnerships for at least five (5) priority agricultural commodity value chains with strong linkage to smallholder agriculture
  - d) to create job opportunities for at least 30% of the youth in agricultural value chains;
- Commitment V: Boosting Intra-African Trade in Agricultural commodities and services in the following ways:
    - a) Triple intra-Africa trade in agricultural commodities
    - b) Fast track continental free trade area & transition to a continental Common External tariff scheme;
  - Commitment VI: Enhancing resilience in livelihoods and production systems to climate variability and other shock;
  - Commitment VII: Mutual accountability to actions and results.

### *2.3 Africa Agenda 2063*

The Vision for the Africa Agenda 2063 was adopted in March 2013 by the African Union Commission (AUC). The first implementation of the plan runs between 2013 and 2023. The Agenda 2063 is a strategic framework for the socio-economic transformation of the continent over the next 50 years. It builds on and seeks to accelerate the implementation of past and existing continental initiatives for growth and sustainable development. Some of the main characteristics and intentions of the Agenda 2063 include, the creation and maintenance of an effect-equitable and people-centered growth and development, the eradication of poverty, and the enabling of internal coherence and coordination to continental, regional and national frameworks and plans adopted by the AUC, Regional Economic Communities (RECs) and member states. Some of the Africa Agenda 2063 goals which are important for this study include:

- Goal 1: A high standard of living, quality of life and well-being for all citizens;
- Goal 3: Healthy and well-nourished citizens;
- Goal 5: Modern agriculture for increased productivity and production.

### *2.4 United Nations Sustainable Development Goals (SDGs)*

Mozambique is a signatory to the United Nations SDGs that replaced the Millennium Development Goals (MDGs) which ended in 2015. This development agenda aims at achieving a set of common goals that meet

urgent global environmental, economic and political challenges by 2030. Among the seventeen SDGs considered by the United Nations Agenda, the agricultural sector is expected to have a direct contribution to the following five goals:

- End poverty in all its forms everywhere (Goal 1);
- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture (Goal 2);
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (Goal 8);
- Promote inclusive and sustainable industrialization (Goal 9);
- Reduce inequality within and among countries (Goal 10).

Table 2 below summarizes the coherence among the three agendas and Mozambique’s sector specific and county goals. This mapping assists with the results framework in the sections to follow.

*Table 2 - Mapping of Mozambique PEDSA and PNISA plans, CAADP, Africa Agenda 2063 and SDGs goals*

<b>Country: PQG: 2015- 2019</b>	<b>Sector Specific: PEDSA: 2010- 2020 &amp; PNISA: 2014-2018</b>	<b>CAADP</b>	<b>Africa Agenda 2063</b>	<b>UN’s SDGs</b>
Rural development and National Food Security	<b>Theme 1:</b> Agricultural production & productivity [achieve 7% growth per year from 2014]	Pillar III Pillar IV	Goal: 1, 3, 4 & 5	SDG 1, 2, 3, 8 & 12
	<b>Theme 2:</b> Access to markets	Pillar II	Goal 4 & 10	SDG: 8 & 9
	<b>Theme 3:</b> Food and Nutritional Security [Halve hunger by 2020] [Reduce chronic malnutrition in children under 5 years from 44% in 2008 to 20% in 2020]	Pillar III	Goal 1 & 3	SDG: 1, 2, 3 & 12
	<b>Theme 4:</b> Institutional Reform & Strengthening	Pillar: Cross-cutting	Goal 8, 9 & 12	SDG: 11, 16 & 17
	<b>Theme 5:</b> Environment & gender	Pillar 1 Pillar: Cross-cutting	Goal: 7 & 17	SDG: 13, 14 & 15

An important issue is whether Mozambique’s vision and goals are coherent with its continental agricultural sector-wide commitments and goals as set out in the CAADP Malabo, SDGs and Agenda 2063 commitments and goals. As discussed above, each of the commitments have goals, some similar, others different. In some cases, the agendas specify a numeric target, while in others the target is simply directional, i.e. an increase or decrease in the value of an indicator. These targets are used in assessing whether the country would be able to attain the goals set out in the different commitments.

### 3. Agricultural Investment and Growth Simulation Model

An economic modelling framework is built to assess the strategic options available to Mozambique to accelerate growth and reduce poverty as envisaged by its different agriculture-related policies and its commitment to the CAADP/Malabo Agenda, Agenda 2063 and the SDGs. The framework consists of an economy-wide general equilibrium model and a microsimulation model. The two models are linked in a sequential manner, that is, the output from one model is used as an input by the other model. Indeed, as suggested by Fofana et al. (2019), a mix of economic models is necessary to properly address multiple goals carried by the agricultural development agendas. Thus, the macroeconomic model addresses the growth and investment goals and targets of Mozambique. However, the latter does not include issues related to inequality and poverty which are better handled in the microeconomic model.

#### *3.1 The macroeconomic model*

The macroeconomic model is an agricultural investment focused computable general equilibrium (CGE) model grounded in the Walrasian small open economy framework. The model is built to capture the agricultural sector-wide Malabo commitments and goals, i.e. agricultural output and productivity growth, intra-Africa trade of agricultural commodities, and public agricultural investments. The CGE model is grounded in the Walrasian small open economy framework. That is, profit-maximizing producers and utility-maximizing consumers interact under a competitive domestic pricing system which simultaneously determines quantities supplied and demanded. The economy is a price taker in world import and export markets. Although the core setting of the model builds upon the standard CGE framework,<sup>2</sup> the model includes some peculiarities related to the issue of agricultural transformation and investments and discussed by Fofana et al. (2019).

The CGE model is implemented using a Social Accounting Matrix (SAM). A SAM is a square matrix that describes the transaction flows taking place within an economy during a given period of time (Fofana et al, 2015). The CGE model is implemented using the 2015 Mozambique SAM (Cruz et al, 2018). This SAM provides a detailed representation of the Mozambican economy and separates 55 activities and commodities. Labour is disaggregated by education attainment level, while household income and expenditures is disaggregated by per capita expenditure quintiles both for urban and rural areas.

#### *3.2 The microeconomic model*

The goals of halving poverty between 2015 and 2025 and ending hunger by 2025 are directly assessed using a microeconomic model. Poverty and hunger are measured at the individual or household level and use

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<sup>2</sup> Among others, Decaluwé et al. (2013) and Lofgren et al. (2002) propose standard archetypes of a single country CGE model.

micro level information, i.e. nationally representative survey data. A given level of poverty is associated with an income level and its distribution across the population. Thus, income inequality is an important determinant of poverty and hunger results. The microeconomic model captures changes in income distribution and inequality measures across the population.<sup>3</sup> Microeconomic models are designed to predict individuals' reactions to a policy shock when facing different economic and institutional environments or constraints. They are useful in integrating the heterogeneous behavior of economic agents and accounting for the aggregate costs and benefits of an intervention or shock (Bourguignon and Spadaro, 2006). There are multiple approaches to conducting a microsimulation under a CGE framework and the choice among these approaches depends on data availability, the research question and time constraints (Cockburn et al, 2012). The microeconomic model is a statistical economic model built to capture income distribution among the population. The changes in the probabilities associated with individual income levels induced by changes in the mean (per capita) income are assessed through a “generalized entropy” measure (Lee and Judge, 1996). Further details about key characteristics of the microeconomic models are available in Fofana et al. (2019).

#### **4. Prospects for Agricultural Development**

##### *4.1 Business as Usual Scenario*

The modelling framework developed is used to construct the BaU scenario. The BaU scenario is built upon recent macroeconomic and sectoral growth trends, using data from the National Institute of Statistics (INE) in Mozambique, the International Monetary Fund, the African Development Bank, the AUC, the United Nations Commission for Africa and the World Bank. Table 3 shows that the annual average GDP growth is expected to be 4.7% in the period 2020-2024. As shown in Table 4, the main source of this growth emanates from the industrial sector, excluding the manufacturing sector, whose growth is at an annual average growth rate of 8.3%. Gross national savings grow from a negative of 4.0% during 2015 to 2019 to 23.0% during 2020-2024.

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<sup>3</sup> The use of the growth-to-poverty elasticity parameter (Thurlow, Kiringai, and Gautam 2007) does not capture the changes in income inequality.

*Table 3 - Mozambique's Selected Economic Variables, Trend and Outlook 2011-2024 (%)*

	<b>2011-2015</b>	<b>2015-2019</b>	<b>2020-2024</b>
Gross Domestic Product, constant prices	7.2	4.3	6.6
Total investment	31.9	3.3	2.4
Gross national Savings	20.8	-4.0	23.0
Volume of Imports of goods and services	28.9	5.0	6.5
Volume of Exports of goods and services	18.9	7.3	12.5
General Government revenue	29.4	26.9	26.1
General Government total expenditure	34.9	32.4	30.8
Current Account Balance	-37.8	-37.1	-58.0

Source: World Economic Outlook (IMF, 2019).

Table 4 shows that Mozambique's total population is estimated to grow by approximately 3%. The urban population is estimated to increase proportionately more than the rural population, that is, 4.5% compared to 2.1% over the 2015-2018 period. The projected annual average growth rate of the agricultural share of Government capital expenditure reduces between the period of 2011-2014 and the period of 2015-2018 from 9.2% to 6.5% respectively. Under the BaU scenario, the model closely replicates the figures and trends provided in Tables 3 and 4.

*Table 4 - Mozambique's Selected Socioeconomic Variables, Trend 2011-2018 (%)*

	<b>2011-2014</b>	<b>2015-2018</b>
Population, total	3.0	2.9
Population, urban	4.6	4.5
Population, rural	2.2	2.1
Labour force, total	2.2	2.9
Unemployment rate, total	3.4	3.3
GDP growth rate, national	7.2	4.7
GDP growth rate, agriculture	2.9	3.3
GDP growth rate, industry	6.6	8.3
GDP growth rate, manufacturing	2.2	4.4
GDP growth rate, services	9.1	4.2
Government capital expenditure, ratio-to-gdp	0.10	0.04
Government capital expenditure, share of agriculture	9.2	6.5

Source: World Development Indicators (World Bank, 2019); \* African Statistical Yearbook (AfDB; UNECA and AUC, 2019); \*\* ReSAKSS Database (ReSAKSS, 2019).

- Progress towards CAADP/Malabo Commitments and Objectives

Table 5 reports the simulation results with respect to the Malabo goals, assuming continuation of the current trend of the economy, i.e. BaU scenario. The country makes some progress towards meeting the required agricultural sector funding, although at 6.5%, it remains below the required 10% CAADP/Malabo commitments goal (Table 5). The country is off-track with agricultural GDP growth of 2.9%. This is a growth rate that is indicative of little progress towards the CAADP/Malabo target of 6.0%. Agricultural performance is being hampered by lower productivity growth. As a result, Mozambique makes very little

progress in extreme poverty reduction that falls by only 10.2% and 2.7% against targets of 95% and 50% respectively. The intra-Africa trade growth is expected to increase only to 34.7% in 2025 against a target of 200%. Thus, the goal of tripling intra-African trade will not be met in Mozambique if the current economic trends prevail. In summary, Mozambique will make little progress in achieving the CAADP Malabo commitments and goals.

*Table 5 - Progress towards Selected CAADP/Malabo Commitments and Goals, BaU Scenario  
(Cumulative from 2014, %)*

		BaU, Average Annual Change	2015	2020	2025	CAADP /Malabo Target, 2015-2025
Agriculture Investment	Agriculture public expenditures share	6.5	6.5	6.5	6.5	10.0
	Agriculture public expenditures growth	5.3	5.3	36.1	75.9	>
	Private agriculture investment, growth	11.5	11.5	91.7	229.7	>
End Hunger	Agricultural total factor productivity growth	-0.5	-0.5	-2.7	-4.9	100.0
	Agricultural value added to agricultural land, growth	2.6	2.6	16.4	32.1	100.0
	Agricultural value added to agricultural labour, growth	0.0	0.0	-0.1	-0.1	100.0
	Total factor productivity, Domestic trade of agricultural and food products	0.0	0.0	0.2	0.3	50.0
	Total factor productivity, agroindustry	-0.1	-0.1	-0.9	-1.6	50.0
	Locally Produced Food, Ratio Total Food Consumption	0.0	0.0	-0.1	-0.1	>
	Share Poorest Quintile to Total Consumption Expenditure	-0.7	-0.7	-3.9	-7.1	>
	<b>Proportion of population below the international poverty line of \$1.90 a day PPP</b>	<b>-1.0</b>	<b>-1.0</b>	<b>-5.7</b>	<b>-10.2</b>	<b>-95.0</b>
Halving Poverty	Agricultural GDP growth	2.9	2.9	2.9	2.9	6.0
	Agricultural contribution to GDP growth	14.9	14.9	14.9	14.9	50.0
	<b>Proportion of population living below \$2.50/Day</b>	<b>-0.2</b>	<b>-0.2</b>	<b>-1.5</b>	<b>-2.7</b>	<b>-50.0</b>
Intra-African Trade	Intra-Africa trade of agricultural commodities, growth	2.7	2.7	17.7	34.7	200.0

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to the year stated. Values for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth” denote average annual shares. Values for “GDP Agriculture” refer to average annual growth rates. “BaU, Average Annual Change” denotes annual average growth rates for most indicators and annual shares for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth.”

Green indicates that the country is on track to meet the goal (> 90%); yellow indicates that much progress is made toward the goal (>50% and 90%); orange indicates that little progress is made toward the goal (>10% and 50%); red indicates that very little progress is made toward the goal (10% or less); grey indicates that data are not available to assess the progress towards the target. For directional goals, i.e. goals without a numeric target, the progress is assessed against the initial value.

- Progress towards the SDGs

Table 6 shows projected progress toward the SDG goals under the BaU. If it continues under the BaU path, the country will make good progress towards SDG 8 - sustainable economic growth. Indeed, with an unemployment rate of 0.5%, the country comfortably meets the SDG target of unemployment of less than 6.0%. Some progress is also made on the annual GDP growth rate of 4.3%, though this is still below the SDG target of 7.0%. The country makes little progress towards achieving SDG 2 of ending hunger and it will be off-track on SDG 1 and SDG 10. Mozambique will be off-track in terms of inequality reduction (SDG 10), with the share of the poorest quintile to total consumption expenditure falling by 9.5%. Furthermore, extreme poverty measured as the proportion of the population below US\$2.50 per day remains off-track. Thus, Mozambique will not fulfil the 2030 SDG targets if it continues on the BaU path.



Table 6 - Progress towards Selected SDGs, BaU Scenario (Cumulative from 2015, %)

			BAU, Average Annual Change	2016	2020	2025	2030	SDGs Target 2016- 2030
Halving poverty (Goal 1)	Eradicate extreme poverty	Proportion of population below the international poverty line of \$1.90 a day PPP	-1.0	-1.0	-4.8	-9.3	-13.6	-95.0
	Reduce at least by half the proportion of population living in poverty	Proportion of population living below \$2.50/Day	-0.2	-0.2	-1.2	-2.4	-3.6	-50.0
End hunger (Goal 2)	Double the agricultural productivity and incomes of small- scale food producers	Volume of agricultural production per labour	0.9	0.9	4.4	9.0	13.8	100.0
		Average income of food producers	3.6	3.6	19.1	41.9	69.0	100.0
Sustainable economic growth (SDG 8)	Sustain per capita economic growth	Annual growth rate of real GDP per capita	1.4	1.4	7.0	14.5	22.4	>
		Annual growth rate of real GDP	4.3	4.3	4.3	4.3	4.3	7.0
		Annual growth rate of real GDP per employed person	1.0	1.0	5.3	10.9	16.8	>
	Achieve full and productive employment and decent work	Average hourly earnings	5.0	5.0	27.3	62.1	106.5	>
		Unemployment rate, change	-11.8	2.9	1.8	0.9	0.5	<6
Inclusive and sustainable industrializ ation (SDG 9)	Promote inclusive and sustainable industrialization	Manufacturing value added as a proportion of GDP and per capita	1.9	1.9	9.7	20.3	31.9	100.0
		Manufacturing employment as a proportion of total employment	1.2	1.2	6.2	12.8	19.9	100.0
Reduce inequality (SDG 10)	Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	Share Poorest Quintile to Total Consumption Expenditure	-0.7	-0.7	-3.3	-6.4	-9.5	>
		Labour earning share of GDP	0.3	0.3	1.3	2.6	4.0	>

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to the year stated. Values for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth” denote average annual shares. Values for “GDP Agriculture” refer to average annual growth rates. Values for “Unemployment rate” are reported for the specific year, i.e. they are not cumulative. “Agricultural Share Public Investment” “BaU, Average Annual Change” denotes annual average growth rates for most indicators and annual shares for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth.”

Green indicates that the goal is met (> 90%); yellow indicates that much progress is made toward the goal (>50% and 90%); orange indicates that little progress is made toward the goal (>10% and 50%); red indicates that very little progress is made toward the goal (10% or less); grey indicates that data are not available to assess the progress towards the target. For directional goals, i.e. goals without numeric target, the progress is assessed against the initial value.

- Progress towards the Objectives of Agenda 2063

Table 7 shows progress towards the Agenda 2063 goals under BaU. Mozambique is on track to meet only the proposed unemployment rate and intra-Africa trade target levels. The annual growth rate of 4.3% compared to 7.0% shows some progress, as do the per capita growth rates. However, this is insufficient to help the country drive a substantial decline in the poverty headcount ratio and hunger eradication. These remain substantially off-track. Furthermore, the rural urban divide widens. A major part of the reason for this is that the country is off-track with respect to its projected agricultural productivity growth goal and target.

Table 7 - Progress towards Selected Objectives of Agenda 2063, BaU Scenario (Cumulative from 2013, %)

		BAU, Average Annual Change	2014	2020	2025	2030	2035	Agenda 2063 Target 2014- 2035
Poverty Reduction	Proportion of population below the international poverty line of \$1.90 a day PPP	-1.0	-1.0	-6.6	-11.0	-15.3	-19.3	-95.0
	Proportion of population living below \$2.50/Day	-0.2	-0.2	-1.7	-2.9	-4.1	-5.2	-95.0
Hunger Eradication	Food Import Dependency Ratio	0.3	0.3	1.8	3.2	4.5	5.9	-70.0
Inequality Reduction	Income Urban/Rural	-2.1	-2.1	-13.6	-22.1	-29.8	-36.7	50.0
Employment and Incomes	Unemployment rate	-11.8	2.9	1.4	0.7	0.4	0.2	6.0
	Per capita income	1.4	1.4	9.9	17.6	25.8	34.6	>
Inclusive Economic Growth	Annual GDP growth	4.3	4.3	4.3	4.3	4.3	4.3	7.0
Productivity Growth	Agricultural TFP	-0.5	-0.5	-3.1	-5.3	-7.5	-9.5	500.0
Intra-African Trade	Value of intra-Africa Trade	4.3	4.3	34.1	65.4	104.0	151.6	120.0

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to the year stated. Values for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth” denote average annual shares. Values for “GDP Agriculture” refer to average annual growth rates. Values for “Unemployment rate” are reported for the specific year, i.e. they are not cumulative. “BaU, Average Annual Change” denotes annual average growth rates for most indicators and annual shares for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth.”

Green indicates that the goal is met (> 90%); yellow indicates that much progress is made toward the goal (>50% and 90%); orange indicates that little progress is made toward the goal (>10% and 50%); red indicates that very little progress is made toward the goal (10% or less); grey indicates that data are not available to assess the progress towards the target. For directional goals, i.e. goals without numeric target, the progress is assessed against the initial value. 5: Progress towards Selected Objectives of Agenda 2063, BaU Scenario (Cumulative from 2015, %).

Since it is clear that the BaU growth strategy will miss most of the goals of the three agendas, the task is now to investigate other paths that might yield better results. The first question is to ascertain if, indeed, investment in agriculture, rather in industry or service sectors would be the best strategy to attain growth, create jobs and to reduce poverty. The results reveal that an agriculture focused growth strategy, financed by external funding, yields the best overall results. It is important though, to analyse how the agriculture led strategy would be practically financed, considering both external and internal sources of finances. Thus, the next simulations test which financing option yields the best results for the agriculture led growth. After gathering this information, the modeling shifts focus to the more detailed understanding of which agriculture sub-sectors and which agricultural value chain investment strategies would be the most effective and efficient to reach selected goals of each of the three commitments. From this information, milestones are devised that inform a different growth path than the BaU. Finally, these strategies are tested to see how they fare towards improving the results obtained under the BaU scenario.

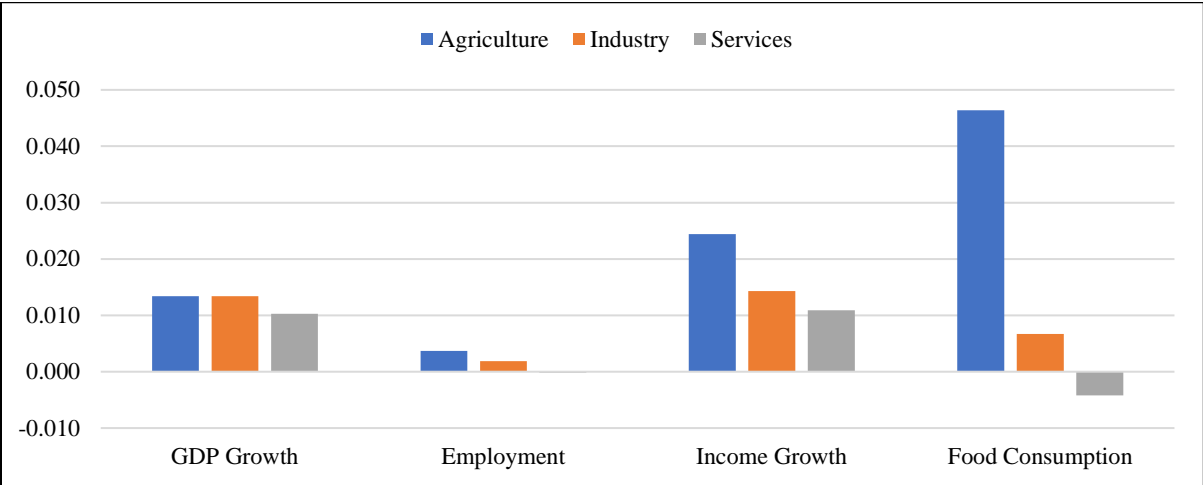
*4.2 Agriculture-led Growth Scenario*

*4.2.1 Investments Prioritization*

a) Inclusive Growth Investment Strategy

Figure 1 assesses the role of different sectors (agriculture, industry and services) under external funding in attaining the country’s economic growth, employment and poverty reduction goals. Public investment-led productivity increase in agriculture contributes more than industry and services to GDP growth, employment and income growth. Furthermore, the figure shows that agricultural contribution to growth is equivalent to industry contribution to growth.

*Figure 1- Effect of an increase of 1 percentage point allocation of public investment in agriculture, industry and services, percentage change compared to BaU*

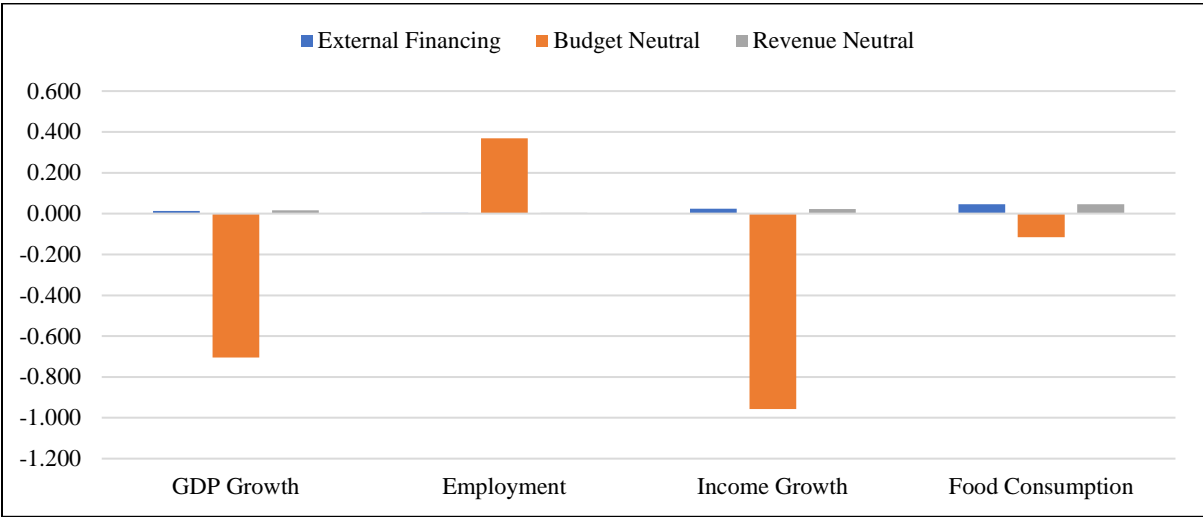


Source: Simulation Results. Note: Scenario implemented under external financing option.

Unlike in the section above, where investment in agriculture is compared to that in industry and services, based on external funding, the focus now shifts to a deeper understanding of agriculture led investments and financing options. Figure 2 compares different financing options for agricultural investments. The three options are: revenue neutral, budget neutral and external financing. *Revenue neutral* option assumes investment budget is constrained; thus an increase in investment in one sector, e.g. agriculture, requires a decrease in other sectors; this option is also referred as a *budget constraint* option. *Budget neutral* option assumes that increases in investment expenditures are funded through increased tax revenues; taxation on households' income and properties (direct tax) is selected for this option. *External financing* option assumes that increases in investment expenditures are funded externally, i.e. through international borrowing or development assistance.

Revenue neutral and external financing have largely positive but ultimately minuscule impacts. Budget neutral financing to agriculture brings about positive impacts, mainly on socioeconomic outcomes when compared to the BaU, but is not good for GDP growth, consumption expenditure and food expenditure growth in the national economy. Despite this, budget neutral financing has a positive impact for the rural areas, and therefore for poverty.

Figure 2 - Comparative effects of the 1 percentage point allocation of public investment by agricultural investment financing options, percentage change compared to BaU



Source: Simulation Results.

b) Agricultural Investments Prioritization

The focus now shifts to assessing effectiveness scores by agricultural sub-sectors, crops, livestock, forestry, and fisheries in Table 8. The effectiveness score measures the proportion of Malabo result areas advanced by a specific public investment increase. For instance, the crops sub-sector effectiveness score of 0.85 considering the Malabo results framework, indicates that a public investment-led productivity increase in

the subsector contributes to progress towards approximately 8 out of 10 Malabo targets. The analysis reported in Table 8 shows higher effectiveness scores for public investment-led productivity increases in crops in meeting the CAADP/Malabo goals; whereas for SDGs and Agenda 2063, it is forestry and fisheries that have the highest effectiveness.

*Table 8 - Effectiveness Score by Agricultural Sub-Sector, 1 percentage point increase in public investment*

	<b>Crops</b>	<b>Livestock</b>	<b>Forestry</b>	<b>Fishery</b>
CAADP/Malabo Goals	0.85	0.62	0.69	0.69
United Nations SDGs	0.78	0.78	0.89	0.89
Africa Agenda 2063	0.78	0.78	0.89	0.89

Source: Simulation Results. Note: Scenario implemented under external financing option.

Effectiveness scores by agricultural commodities are also assessed to identify priority agricultural commodities based on their contributions across CAADP/Malabo, SDGs and Agenda 2063. As shown in Table 9, commodities that rank the highest are sorghum, rice, pulses, oilseeds, cassava, other root crops, sugar, cotton, fruits, forestry and fisheries.

*Table 9 - Effectiveness Score by Agricultural Commodities, 1 percentage point increase in public investment*

<b>Industry</b>	<b>CAADP/Malabo</b>	<b>SDGs</b>	<b>Agenda 63</b>
Maize	0.64	0.46	0.78
<b>Sorghum</b>	<b>0.79</b>	<b>0.54</b>	<b>0.78</b>
<b>Rice</b>	<b>0.71</b>	<b>0.69</b>	<b>0.78</b>
Other Cereals	0.79	0.54	0.56
<b>Pulses</b>	<b>0.86</b>	<b>0.62</b>	<b>0.78</b>
Groundnut	0.64	0.46	0.78
<b>Oil Seeds</b>	<b>0.79</b>	<b>0.62</b>	<b>0.89</b>
<b>Cassava</b>	<b>0.79</b>	<b>0.62</b>	<b>0.78</b>
<b>Other Root</b>	<b>0.71</b>	<b>0.69</b>	<b>0.78</b>
Vegetables	0.64	0.46	0.78
<b>Sugar</b>	<b>0.79</b>	<b>0.77</b>	<b>0.78</b>
Tobacco	0.36	0.31	0.11
<b>Cotton</b>	<b>0.93</b>	<b>0.77</b>	<b>0.78</b>
<b>Fruit</b>	<b>0.71</b>	<b>0.69</b>	<b>0.67</b>
Coffee	0.50	0.31	0.44
Other Crops	0.71	0.54	0.44
Cattle	0.57	0.54	0.67
Poultry	0.64	0.62	0.78
Other Livestocks	0.64	0.62	0.78
<b>Forestry products</b>	<b>0.71</b>	<b>0.62</b>	<b>0.89</b>
<b>Fish</b>	<b>0.71</b>	<b>0.62</b>	<b>0.89</b>

Source: Simulation Results. Note: Scenario implemented under external financing option.

Table 10 presents the effectiveness scores across agricultural value chain considering the CAADP/Malabo, SDGs and Agenda 2063 results frameworks. The results show that investing in agricultural post-production industries is more likely to advance the goals and targets of the three agendas. Equally, agricultural productivity growth and reducing the cost of intra-Africa trade of agricultural commodities appear to be profitable investment areas for Mozambique.

*Table 10 - Effectiveness Score along the Agricultural Value Chain, 1 percentage point increase in public investment*

	<b>Investment areas</b>	<b>CAADP</b>	<b>SDGs</b>	<b>Agenda 63</b>
Upstream	Agricultural Productivity Growth	0.69	0.62	0.78
	Agricultural Input Subsidy	0.39	0.54	0.67
	Support to Private Investments in Agriculture	0.39	0.54	0.22
	Agricultural Production Price Subsidy	0.39	0.54	0.22
Midstream	Agroindustry Productivity Growth	0.77	0.77	0.67
	Support to Private Investments in Agroindustry	0.62	0.85	0.67
	Agricultural Domestic Trade Productivity Growth	0.77	0.23	0.11
	Support to Private Investments in Agricultural Domestic Trade	0.69	0.77	0.56
Downstream	Reduce Cost of Intra-Africa Trade of Agricultural Commodities	0.85	0.85	0.89
	Food Consumption Price Subsidy	0.39	0.62	0.33
	Unconditional Cash Transfers to Poor Households	0.23	0.46	0.11
	Food Expenditure Conditioned Cash Transfer to Poor Households	0.23	0.54	0.22

Source: Simulation Results. Note: Scenario implemented under external financing option.

#### *4.2.2 Milestones for Agriculture-Led Growth Scenario*

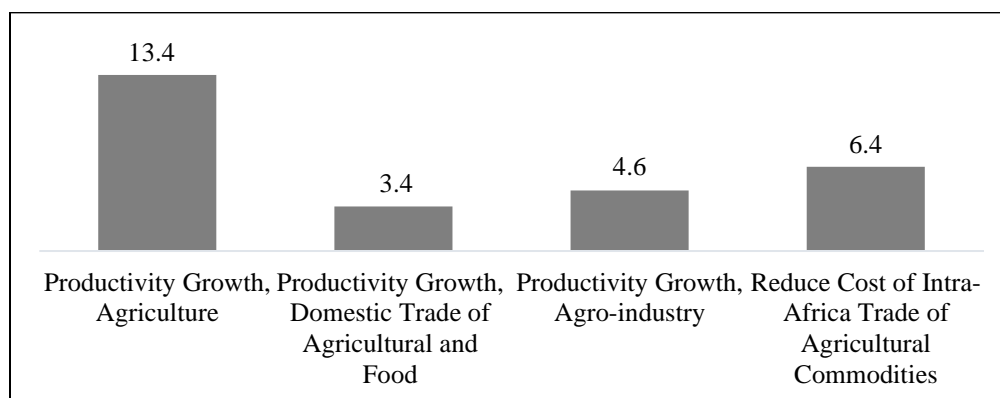
This section uses the prioritization outcome discussed above to build an agricultural-led growth scenario or the National Agricultural Investment Strategy (NAIS) scenario. After this, the milestones to advance towards the Malabo, SDGs and Agenda 2063 goals and targets are then defined. The milestones facilitate the tracking, monitoring and reporting on progress and they assist in the development of the National Agricultural Investment Plan (NAIP) logical framework.

Scaling the supply-side investments, i.e. towards agricultural productivity and production growth, on its own cannot be sustained unless it is complemented by increases in the demand-side investments, i.e. towards agroindustry and trading of agriculture commodities, both internal and external.

Figure 3 depicts an investment strategy to accelerate agricultural growth and progress towards the achievement of the Malabo, SDGs and Agenda 2063 goals. The strategy consists of investments in the agricultural sector by increasing productivity through focusing on the priority agricultural commodities highlighted in the previous section. The strategy includes investments for agriculture with a focus on

productivity growth in agricultural post-production industries, i.e. agroindustry and domestic trade of agricultural commodities and reducing the cost of intra-Africa trade of agricultural commodities.

*Figure 3 - Strategic Public Investment Areas to Accelerate Agricultural Growth, Percentage Point Increase Compared to the BaU Scenario*



Source: Simulation Results

Most of the required agricultural investments will have to come from public investments (Table 11). Thus, a substantial effort in public agricultural investment growth is needed, from 5.3% under BaU to 39.7% under NAIS. As a result, the overall public investment expenditure increases from 6.4% under BaU to 17.6% under NAIS. The share of public agricultural investments grows from 6.5% under BaU to 18.8% under NAIS. Private agricultural investment growth, including foreign private investment growth, will be much smaller in comparison to public agricultural investment given that their growth rate under the BaU was already relatively high.

*Table 11 - Agricultural Investments Growth, (% Average Annual)*

		<b>BaU</b>	<b>NAIS</b>
Public Investment	Public investment expenditures, growth	6.4	17.6
	Agricultural public investment expenditures, growth	5.3	39.7
	Agricultural public investment expenditures, share	6.5	18.8
Private Investment	Private investment growth, total	13.2	15.3
	Private investment growth, foreign	4.0	4.8
	Private agricultural investment growth	11.5	13.4

Source: Simulation Results.

Agricultural production growth rate needs to double from 3.0% under BaU to 6.1% under NAIS (Table 12). Agricultural production increase is driven by agricultural productivity growth which grows annually at 2.2% under NAIS compared to the declining trend (-0.5%) under BaU. Agricultural productivity growth is partially driven by an increase in input use, as the intensity of input use grows from 3.0% to 4.6% on average annually.

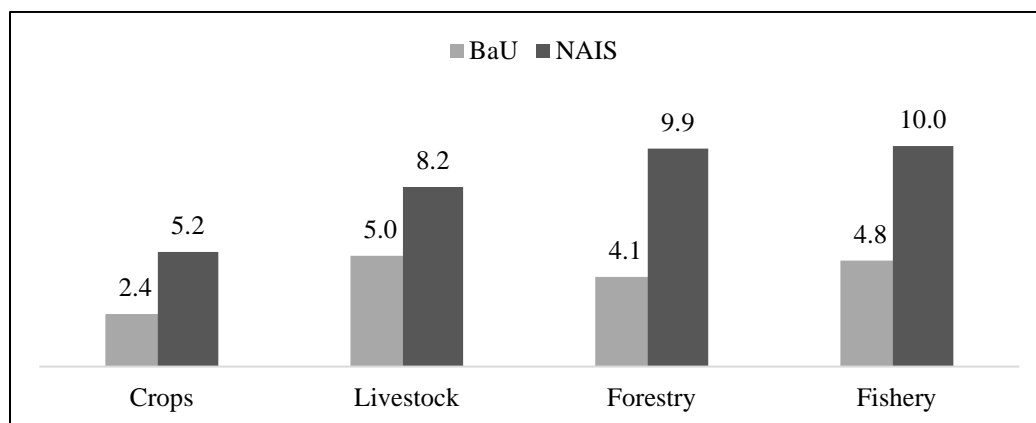
Table 12 - Agricultural Productivity and Production Growth, (% Annual Average)

	BaU	NAIS
Cost of agricultural inputs	0.6	0.6
Intensity of input use	3.0	4.6
Total factor productivity in agriculture	-0.5	2.2
Agricultural land use, growth	0.4	0.5
Agricultural labour-to-land, growth	2.6	2.9
Agricultural private capital-to-land, growth	7.6	8.1
Agricultural Production, growth	3.0	6.1

Source: Simulation Results

Figure 4 shows the required agricultural production growth by agricultural sub-sector. All sub-sectors require a substantial increase in their production levels. Crops and livestock production growth rates more than double under the NAIS scenario compared to the BaU scenario. Production grows fastest for fisheries, followed by forestry. The output growth rates required for the priority agricultural commodities are given in Figure 5.

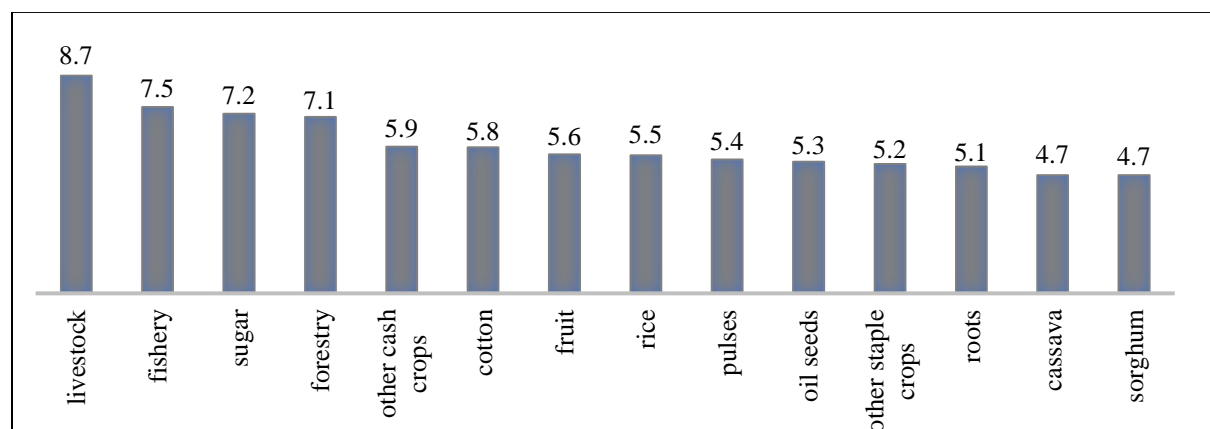
Figure 4 - Output Growth by Agricultural Sub-Sector, (% Annual Average)



Source: Simulation Results



Figure 5 - Output Growth by Agricultural Commodity under the NAIS Scenario, (% Annual Average)



Source: Simulation Results

The annual growth of agricultural exports by commodity is given in Table 13. Livestock, fisheries, and forestry will need to ramp up production with a large proportion devoted to exports. Exports towards non-African markets will increase faster than exports towards African markets.

Table 13 - Annual Average Growth of Agricultural Exports by Commodity, NAIS Scenario (%)

Commodity	Total	Intra-Africa	Extra-Africa
Pulses	7.3	5.1	7.9
Oil seeds	7.4	5.1	7.7
Roots	5.0	5.0	7.6
Other staple crops	6.3	4.7	7.0
Fruit	6.7	5.1	7.9
Other cash crops	5.2	3.9	5.4
Livestock	18.0	11.8	20.1
Forestry	11.1	11.0	18.7
Fishery	16.6	10.3	17.5

Source: Simulation Results

Table 14 presents the respective food products' consumer price and consumption expenditure milestones which contribute to achieving the poverty and hunger goals under the three agendas. While imported food price index is projected to increase compared to the general price index, the local food price index is projected to decline in real terms, i.e. compared to the general price index. The overall food price index is expected to fall in real terms. Income growth, as well as income growth per capita will need to rise from 4.3% to 6.0% and from 0.4% to 0.8% respectively from BaU to NAIS scenarios. As a consequence, overall consumption and food consumption are projected to increase substantially from the BaU scenario to the NAIS scenario. The increase is more pronounced in rural areas.

Table 14 - Change in Income, Prices and Consumption, (% Annual Average)

	BaU	NAIS
Consumer price index of food products	0.3	-0.9
Consumer price index of local food products	0.4	-1.2
Consumer price index of imported food products	0.5	0.7
Income growth	4.3	6.0
Population growth rate	2.9	2.9
Income growth per capita	0.4	0.8
Total Consumption Expenditure, National	4.3	6.0
Total Consumption Expenditure, Rural	2.8	5.5
Food Consumption Expenditure, National	3.1	5.3
Food Consumption Expenditure, Rural	2.4	5.0

Source: Simulation Results.

- NAIS Scenario: Progress towards CAADP/Malabo Commitments and Objectives

While the NAIS scenario is not sufficient to achieve all the CAADP/Malabo goals, it allows the country to progress toward meeting them with only one goal – poverty reduction – now remaining off track, (Table 15). With the NAIS scenario, the country would place itself in a strong position to achieve some of the goals and make substantial progress on many others. The government’s agricultural expenditure target of 10% is surpassed and this results in the agricultural GDP growth of 6% being met under this scenario. Increased public investments are expected to crowd-in private investments in agriculture, which increase substantially compared to the BaU scenario. Increased investments in domestic trade of agricultural commodities and agro-industry contributes to boost agricultural growth. While intra-Africa trade shows some signs of improvement, it is still falling short to meeting the CAADP/Malabo target. Although there are these improvements, still very little progress is made with ending hunger while, as mentioned, the target of poverty reduction is the only one that remains off-track.

- NAIS Scenario: Progress towards the SDGs

Table 16 shows that if Mozambique were to successfully implement the NAIS scenario as designed, the country would place itself in a strong position to achieve many of the SDGs and make substantial progress on others. Substantial progress is made to achieving goal 2 of ending hunger and goal 8 of sustainable economic growth. Some progress is made towards goals 1, 9 and 10. Although the poverty goal is not met, there is steady progress towards this goal.

- NAIS Scenario: Progress towards the Objectives of Agenda 2063

The NAIS scenario places Mozambique in a strong position to achieve many of the Agenda 2063 goals (Table 17). Crucially, the intra-African trade as well as the employment target are met while substantial progress is made on hunger eradication and inclusive growth targets. Unfortunately, the rural-urban divide together with poverty reduction show very little progress, though they are now moving in the right direction.

Table 15 - Progress towards Selected CAADP/Malabo Commitments and Goals, NAIS Scenario,  
(Cumulative from 2014, %)

		BaU, Average Annual Change	2015	2020	2025	CAADP / Malabo Target, 2015-2025
Agriculture Investment	Agriculture public expenditures share	18.8	18.8	18.8	18.8	10.0
	Agriculture public expenditures growth	39.7	39.7	644.9	3870.4	>
	Private agriculture investment, growth	13.4	13.4	112.4	297.8	>
End Hunger	Agricultural total factor productivity growth	2.2	2.2	13.6	26.4	100.0
	Agricultural value added to agricultural land, growth	5.8	5.8	40.3	85.9	100.0
	Agricultural value added to agricultural labour, growth	2.8	2.8	17.8	35.1	100.0
	Total factor productivity, Domestic trade of agricultural and food products	4.4	4.4	29.3	60.2	50.0
	Total factor productivity, agroindustry	3.4	3.4	22.4	44.9	50.0
	Locally Produced Food, Ratio Total Food Consumption	0.2	0.2	1.0	1.8	>
	Share Poorest Quintile to Total Consumption Expenditure	0.1	0.1	0.8	1.4	>
	<b>Proportion of population below the international poverty line of \$1.90 a day PPP</b>	-2.2	-2.2	-12.3	-21.4	-95.0
Halving Poverty	Agricultural GDP growth	6.3	6.3	6.3	6.3	6.0
	Agricultural contribution to GDP growth	25.4	25.4	25.4	25.4	50.0
	<b>Proportion of population living below \$2.50/Day</b>	-0.5	-0.5	-3.2	-5.8	-50.0
Intra-African Trade	Intra-Africa trade of agricultural commodities, growth	4.3	4.3	29.1	59.6	200.0

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to the year stated. Values for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth” denote average annual shares. Values for “GDP Agriculture” refer to average annual growth rates. “BaU, Average Annual Change” denotes annual average growth rates for most indicators and annual shares for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth.” Green indicates that the country is on track to meet the goal (> 90%); yellow indicates that much progress is made toward the goal (>50% and 90%); orange indicates that little progress is made toward the goal (>10% and 50%); red indicates that very little progress is made toward the goal (10% or less); grey indicates that data are not available to assess the progress towards the target. For directional goals, i.e. goals without a numeric target, the progress is assessed against the initial value.

Table 16- Progress towards Selected SDGs, NAIS Scenario (Cumulative from 2015, %)

			BaU, Average Annual Change	2016	2020	2025	2030	SDGs Target 2016- 2030
Halving poverty (Goal 1)	Eradicate extreme poverty	Proportion of population below the international poverty line of \$1.90 a day PPP	-2.2	-2.2	-10.4	-19.7	-28.0	-95.0
	Reduce at least by half the proportion of population living in poverty	Proportion of population living below \$2.50/Day	-0.5	-0.5	-2.7	-5.3	-7.9	-50.0
End hunger (Goal 2)	Double the agricultural productivity and incomes of small-scale food producers	Volume of agricultural production per labour	1.5	1.5	7.6	15.7	24.5	100.0
		Average income of food producers	4.9	4.9	27.2	61.7	105.6	100.0
Sustainable economic growth (SDG 8)	Sustain per capita economic growth	Annual growth rate of real GDP per capita	2.5	2.5	12.9	27.4	43.8	>
		Annual growth rate of real GDP	5.4	5.4	5.4	5.4	5.4	7.0
		Annual growth rate of real GDP per employed person	2.0	2.0	10.1	21.3	33.6	>
	Achieve full and productive employment and decent work	Average hourly earnings	6.0	6.0	33.9	79.3	140.2	>
		Unemployment rate, change	-22.9	2.5	0.9	0.2	0.1	<6
Inclusive and sustainable industrialization (SDG 9)	Promote inclusive and sustainable industrialization	Manufacturing value added as a proportion of GDP and per capita	2.6	2.6	13.5	28.7	46.1	100.0
		Manufacturing employment as a proportion of total employment	1.3	1.3	6.8	14.1	21.8	100.0
Reduce inequality (SDG 10)	Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	Share Poorest Quintile to Total Consumption Expenditure	0.1	0.1	0.6	1.3	1.9	>
		Labour earning share of GDP	0.3	0.3	1.6	3.3	5.0	>

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to the year stated. Values for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth” denote average annual shares. Values for “GDP Agriculture” refer to average annual growth rates. Values for “Unemployment rate” are reported for the specific year, i.e. they are not cumulative. “Agricultural Share Public Investment” “BaU, Average Annual Change” denotes annual average growth rates for most indicators and annual shares for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth.”

Green indicates that the goal is met (> 90%); yellow indicates that much progress is made toward the goal (>50% and 90%); orange indicates that little progress is made toward the goal (>10% and 50%); red indicates that very little progress is made toward the goal (10% or less); grey indicates that data are not available to assess the progress towards the target. For directional goals, i.e. goals without numeric target, the progress is assessed against the initial value.

Table 17- Progress towards Selected Objectives of Agenda 2063, NAIS Scenario (Cumulative from 2013, %)

		BaU, Average Annual Change	2014	2020	2025	2030	2035	Agenda 2063 Target 2014-2035
Poverty Reduction	Proportion of population below the international poverty line of \$1.25 a day PPP	-2.2	-2.2	-14.2	-23.1	-31.1	-38.3	-95.0
	Proportion of population living below \$2.50/Day	-0.5	-0.5	-3.8	-6.4	-8.9	-11.3	-95.0
Hunger Eradication	Food Import Dependency Ratio	-3.7	-3.7	-23.0	-36.2	-47.0	-56.1	-70.0
Inequality Reduction	Income Urban/Rural	-1.0	-1.0	-6.6	-11.1	-15.3	-19.3	50.0
Employment and Incomes	Unemployment rate	-22.9	2.5	0.5	0.1	0.0	0.0	<6
	Per capita income	2.5	2.5	18.5	33.7	51.0	70.4	>
Inclusive Economic Growth	Annual GDP growth	5.4	5.4	5.4	5.4	5.4	5.4	7.0
Productivity Growth	Agricultural TFP	2.2	2.2	16.1	29.1	43.6	59.7	500.0
Intra-African Trade	Value of intra-Africa Trade	5.5	5.5	45.6	90.4	149.0	225.7	120.0

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to the year stated. Values for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth” denote average annual shares. Values for “GDP Agriculture” refer to average annual growth rates. Values for “Unemployment rate” are reported for the specific year, i.e. they are not cumulative. “BaU, Average Annual Change” denotes annual average growth rates for most indicators and annual shares for “Agricultural Share Public Investment” and “Agriculture Contribution to GDP Growth.”

Green indicates that the goal is met (> 90%); yellow indicates that much progress is made toward the goal (>50% and 90%); orange indicates that little progress is made toward the goal (>10% and 50%); red indicates that very little progress is made toward the goal (10% or less); grey indicates that data are not available to assess the progress towards the target. For directional goals, i.e. goals without numeric target, the progress is assessed against the initial value.

## 5. Conclusion

The 2014 Malabo Declaration on Accelerated Growth and Transformation for Shared Prosperity and Improved Livelihoods upheld the original Maputo commitment of achieving a 6% annual agricultural growth rate and a 10% agricultural expenditure share. In addition to this agenda, Mozambique pledged to the Agenda 2063 as well as the SDGs, which are committed to accelerating economic growth as well as eradicating poverty and inequality, among several other goals. However, a key challenge to implementing these commitments is the fact that they involve a large number of obligations and goals.

To address the CAADP/Malabo, the SDGs and the Agenda 2063 goals, a Results Framework has been developed as a key tool for translating Mozambique's agricultural agenda into tangible outcomes. The Results Framework assists the tracking, monitoring and reporting on progress as well as facilitating mutual learning and accountability for Mozambique. The assessment of Mozambique's agricultural investments priorities uses an economy-wide general equilibrium model.

Under the BaU scenario, Mozambique will make little progress towards meeting the required agricultural sector funding under the CAADP/Malabo commitments. Because of this lack of substantive progress, Mozambique is off-track with agricultural GDP growth, intra-Africa trade, and reduction of extreme poverty. The results show that agricultural performance is being hampered by negative productivity increases. When considering the SDGs under BaU, Mozambique will make some good progress towards the sustainable economic growth, the unemployment rate and the annual GDP growth rate targets. There is also some mild progress towards achieving SDG 2 of ending hunger. However, the country is completely off-track on two goals namely, SDG 1 and SDG 10. Finally, under the BaU path, Mozambique is on track to meet only the proposed unemployment rate and inter-African Trade target levels under the Agenda 2063 goals. The annual growth rate and the per capita growth rates do not make sufficient progress to lead to a substantial decline in the poverty headcount ratio, hunger eradication and inequality between rural and urban populations. A major reason for this is that the country is off-track with respect to its projected agricultural productivity growth goal and target.

Given that the BaU growth strategy will miss most of the goals of these three commitments, the paper uses the simulation model to assess other strategies. First, the model tests which would be better, agriculture, industry or service driven growth, for the goals of the three commitments. The results show that public investment-led productivity increases in agriculture contribute more across all the indicators on the production and consumption side. Agriculture contributes more than industry and services to number of jobs created, food expenditure and consumption expenditure growth. In terms of GDP growth, industry is on par with agriculture in its contribution.

The next question thus becomes, “What is the best financing option for this agriculture led growth?” Looking at financing options, we test which of the three options, i.e. revenue neutral, budget neutral and external financing, leads to the best results for financing investments in agriculture. The results reveal that overall, budget constraint and external financing bring about positive impacts on socioeconomic outcomes when compared to the BaU.

The economywide model is used to assess and to identify priority agricultural commodities based on their contributions across CAADP/Malabo, SDGs and Agenda 2063. The analysis reveals that 11 commodities with the highest contribution are sorghum, rice, pulses, oilseeds, cassava, other root crops, sugar, cotton, fruits, forestry and fisheries.

The analysis also discusses milestones necessary to achieve the results found in the simulations. Such a path would represent the NAIP strategy for Mozambique. It is advised that these milestones, which are actionable results, be monitored to track progress towards achieving the CAADP/Malabo, SDGs and Agenda 2063 goals and targets. The results reveal that most of the agricultural investments required by Mozambique will have to come from the public sector and thus, require a substantial effort in agricultural public investment expenditure growth.

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