**AGRODEP Working Paper 0041**

**February 2020**

# African Commitments for Agricultural Development Goals and Milestones for Cote d'Ivoire

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**Acknowledgements**

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## Abstract

The main purpose of this study is to assess the contribution of agricultural investment to the achievement of Côte d'Ivoire's development objectives. More specifically, it aims to analyze the extent to which the implementation of the National Agricultural Investment Programme can contribute to the achievement of the objectives and targets of the Comprehensive Africa Agriculture Development Program (CAADP), the United Nations' Sustainable Development Goals (SDGs) and the African Union's Agenda 2063. The methodological used combines a computable general equilibrium (CGE) model and a microsimulation model to assess the impact of agricultural investment options on different outcomes related to the different agendas above. The simulation results indicate that the implementation of the NAIP would enable Côte d'Ivoire to make significant progress and achieve some of the CAADP, SDGs and the African union's 2063 Agenda's targets. Thus, the country could achieve investment targets by slightly exceeding the 10% share of public expenditure in total government expenditure and a significant increase in private investment in agriculture. This progress in terms of investment could result in an acceleration of agricultural growth so that Côte d'Ivoire's agricultural GDP would increase at a growth rate above the target of 6% per year. It would also make it possible to achieve several SDGs by 2030, as well as certain targets of the African Union's Agenda 2063. However, despite progress in terms of productivity in some segments of the agricultural value chain, the fight against poverty will remain a major challenge that the country will not be able to meet.

## Résumé

Cette étude vise à évaluer la contribution de l'investissement agricole dans l'atteinte des objectifs de développement de la Côte d'Ivoire. En particulier, elle analyse dans quelle mesure la mise en œuvre du Programme National d'Investissement Agricole (PNIA) peut aider à l'atteinte des objectifs et cibles du Programme détaillé de développement de l'Agriculture africaine (PDDAA), des Objectifs de développement durables (ODD) des Nations Unies et de ceux de l'Agenda 2063 de l'Union africaine. L'étude combine un modèle d'équilibre général calculable (EGC) et un modèle de microsimulation pour évaluer l'impact de différentes options d'investissement agricole sur les variables de résultats se rapportant aux agendas ci-dessus. Les résultats des simulations montrent que la mise en œuvre du PNIA permettrait à la Côte d'Ivoire de réaliser des progrès significatifs et d'atteindre certaines cibles du PDDAA, des ODD et de l'Agenda 2063 de l'Union africaine. Ainsi, le pays pourrait dépasser légèrement la cible de 10% des dépenses publiques totales à affecter au secteur agricole et accroître de manière significative l'investissement privé dans l'agriculture. Ces progrès se traduiraient par une accélération de la croissance agricole de sorte que la Côte d'Ivoire le PIB agricole pourrait dépasser le taux de croissance annuel de 6%. Par ailleurs, la mise en œuvre du PNIA permettrait à la Côte d'Ivoire d'atteindre plusieurs cibles des ODD en 2030, tout comme certains objectifs de l'Agenda 2063 de l'Union africaine. Cependant, malgré les progrès en termes de productivité sur certains segments de la chaîne de la valeur agricole, la lutte contre la pauvreté demeurera un défi majeur que le pays ne pourra pas relever.

1.  **Introduction**

Côte d'Ivoire, like many sub-Saharan African countries, has a coherent reference framework setting out the main guidelines for economic and social development through numerous development plans and Programs. Côte d'Ivoire's agricultural development interventions are all based on the National Agricultural Investment Program (NAIP), which is the reference document for the sector's development strategies. The NAIP is derived from the ECOWAS Agricultural Policy (ECOWAP), and the Comprehensive Africa Agriculture Development Program (CAADP). In doing so, Côte d'Ivoire, like all CAADP stakeholders, adopted the results framework from the Malabo Declaration. In addition to the CAADP commitments, Côte d'Ivoire has also subscribed to the African Union's Agenda 2063 and the United Nations Sustainable Development Goals (SDGs), which also aim to promote inclusive economic growth to achieve several economic and social development objectives, including, inter alia, reducing poverty and inequality, promoting food security, etc.

The implementation and monitoring of all these commitments are a real challenge due to the relatively large number of objectives and targets they aim to achieve. To address these, each of the agendas has a specific results framework. This study combines the results frameworks of the different agendas to analyze progress towards the objectives of CAADP (2025), the SDGs (2030) and the AU Agenda 2063 (2035). This exercise is conducted taking into account national development policies and strategies. These include the Côte d'Ivoire 2040 prospective study, the National Development Plan (NDP 2016-2020) and the National Agricultural Investment Program (NAIP II - 2017-2025). The CAADP has been defined around two types of objectives. The first type is organized around overarching objectives and targets related to (i) poverty reduction and hunger eradication; (ii) agricultural productivity and growth; and (iii) public expenditure and investment. The second type of objectives encompasses thematic objectives and targets related to (i) inclusive growth and development of agricultural value chains, (ii) intra-African trade in agricultural products and services, (iii) nutrition and food security, (iv) gender, (v) climate-resilient agriculture and (vi) mutual accountability.

The study's methodological approach uses several analytical tools to quantify the impacts of interventions in the agricultural sector on the CAADP's multiple objectives and Côte d'Ivoire's other international commitments. Thus, it combines a computable general equilibrium (CGE) model with a microsimulation model. The CGE model identifies priority sectors and branches of intervention and the impact of investments on key macroeconomic and sectoral indicators. The microsimulation model provides an understanding of the impact of investments on income distribution and poverty.

After the background (Section 2), the study presents the different development frameworks and policies and analyzes their coherence (Section 3). Section 4 presents the analytical framework used to assess the

potential impact of interventions in the agricultural sector. Section 5 presents and discusses the results of the evaluation and Section 6 presents the conclusion.

## 2. **Background**

With a population of almost 26 million, Côte d'Ivoire has a population growth rate of about 2.7 percent per year. Its economy has experienced a real dynamism in recent years, after a long period of crisis. Indeed, with an average annual GDP growth rate of more than 8 percent over the 2012-2017 period, the Ivorian economy is one of the most dynamic in recent years in Africa. It is the largest economy in the West African Economic and Monetary Union (WAEMU). The Ivorian economy accounts for more than 40 percent of WAEMU's GDP and is the third largest economy of the Economic Community of West African States (ECOWAS) after Nigeria and Ghana. This performance is due, among other things, to the many comparative advantages in the primary sector (20 percent of GDP) with endowments in natural resources, making it the world's leading producer of cocoa (nearly 40 percent of the market) and cashew nuts (nearly 22 percent of world production in 2017).

Table 1 shows the evolution of some indicators between 2003 and 2016. This time frame is divided into two main periods: the 2003-2007 period, which we will consider as the reference period, and 2010-2016 which is the implementation period of the first national agricultural investment program (NAIP). This period is called the CAADP period. Between these two periods, we highlight the year 2008, which corresponds to the international economic crisis, and the year 2009, which we consider to be a post-crisis year (or period). The growth rate of general government agricultural expenditure increased remarkably from -1.6 to 12.2 percent between the reference period and the CAADP period, respectively. The share of public agricultural expenditure in total expenditure rose from 2.6 to 4.2 percent, an increase of 1.6 percentage points before and after the financial crisis. There was also a 2.4 percent increase in public agricultural expenditure in relation to agricultural value-added. Similarly, there was an increase in agricultural value-added per agricultural worker and per hectare of arable land of 517.3 and 56.9 percent respectively between the 2010-2016 period and the reference period.

Among the main crops identified in Table 1, only paddy rice shows an increase in yield. The growth rate of agricultural value-added recorded (4.0 percent) results from rice cultivation but it falls short of the 6 percent target set by CAADP in the Malabo Declaration. The growth rate of agricultural value-added per capita increased by 8.2 percent, which is almost twice the rate of the growth in GDP per capita. Due to this elevated growth rate, the agricultural sector has been one of the main sources of GDP growth. In addition, the number of jobs created per year increased by over 50 thousand between the two periods. However, the average employment rate did not follow and instead fell by 6.7 percent. The country's strong economic growth has contributed to a decline in the poverty rate, which fell from 48.9 percent in 2008 to 46.3 percent

in 2015 according to household living standards survey data conducted by the National Institute of Statistics.

*Table 1. The status of Côte d'Ivoire's agricultural production, investment, growth, and poverty during the CAADP and CAADP with Malabo Declaration periods*

| Metrics | Source | Reference Period | Economic crisis period | Post-crisis period | CAADP overlapping with CAADP/Malabo period | Change between period (averages 2003-2007 vs 2010-2016) | |
|---|---|---|---|---|---|---|---|
| | | Average 2003-2007 | 2008 | 2009 | Average 2010-2016 | Value | Unit |
| Government agriculture expenditure growth rate (percent)* | ReSAKSS, 2017 | -1.55 | 4.2 | 20.13 | 12.20 | 13.75 | pp |
| Government agriculture expenditure (percent of total government expenditure) | ReSAKSS, 2017 | 2.6 | 2.3 | 2.7 | 4.2 | 1.6 | pp |
| Government agriculture expenditure (percent of agriculture value added) | ReSAKSS, 2017 | 2.1 | 2.1 | 2.6 | 4.4 | 2.4 | pp |
| Agriculture value added per agricultural worker (constant 2005 USD) | ReSAKSS, 2017 | 1924.6 | 1971 | 1908 | 2441.9 | 517.3 | percent |
| Agriculture value added per hectare of arable land (constant 2005 USD) | ReSAKSS, 2017 | 264.8 | 260 | 251 | 321.7 | 56.9 | percent |
| Yield for selected crops (Tons/Ha) | | | | | | | |
| *Cocoa* | FAO, 2017 | 0.62 | 0.6 | 0.56 | 0.53 | -0.08 | percent |
| *Coffee* | FAO, 2017 | 0.27 | 0.27 | 0.23 | 0.16 | -0.11 | percent |
| *Rubber* | FAO, 2017 | 1.65 | 1.69 | 1.47 | 1.61 | -0.03 | percent |
| *Rice, paddy* | FAO, 2017 | 1.91 | 1.85 | 1.82 | 2.51 | 0.6 | percent |
| Growth rate of output for selected commodities (percent)* | | | | | | | |
| *Cocoa* | FAO, 2017 | -2.33 | 12.40 | -11.52 | 5.86 | 8.19 | pp |
| *Coffee* | FAO, 2017 | 5.10 | 1.33 | -17.43 | 2.95 | -2.15 | pp |
| *Hevea* | FAO, 2017 | 10.93 | 7.67 | 3.21 | 17.82 | 6.89 | pp |
| *Rice, paddy* | FAO, 2017 | -2.09 | 12.15 | 1.14 | 14.25 | 16.34 | pp |
| Agriculture production index (2004-2006=100) | FAO, 2017 | 98.84 | 106.18 | 100.2 | 120.61 | 21.77 | pp |
| Agriculture, value added (constant 2010 US$, billion) | ReSAKSS, 2017 | 6233 | 5357 | 5171 | 6628.7 | 395.7 | percent |

| Metrics | Source | Reference Period | Economic crisis period | Post-crisis period | CAADP overlapping with CAADP/Malabo period | Change between period (averages 2003-2007 vs 2010-2016) | |
|---|---|---|---|---|---|---|---|
| | | Average 2003-2007 | 2008 | 2009 | Average 2010-2016 | Value | Unit |
| Growth rate of agricultural value added (constant 2010 US$)* | ReSAKSS, 2017 | 0 | -14.1 | -3.5 | 3.96 | 3.96 | pp |
| Growth rate of agricultural value added per capita (constant 2010 US$)* | ReSAKSS, 2017 | -4.34 | 6.1 | -3.2 | 3.89 | 8.23 | pp |
| Growth rate of GDP per capita (constant 2010 US$)* | ReSAKSS, 2017 | -0.37 | 0.44 | 1.0 | 4.10 | 4.47 | pp |
| GDP per capita (constant 2010 US$) | ReSAKSS, 2017 | 1215.4 | 1212 | 1224 | 1329 | 113.6 | percent |
| GNI per capita, PPP (constant 2010 $) | The World Bank, 2017 | 0 | 1162.50 | 1170.94 | 1283.30 | 1283.30 | percent |
| Gini coefficient | ReSAKSS, 2017 | 33.8 | 43 | 32 | 32 | -1.8 | pp |
| Number of jobs created per annum* | The World Bank, 2017 | 72573.06 | 98060.49 | 106837.34 | 127051.12 | 54478.06 | percent |
| Employment rate (percent of population) | The World Bank, 2017 | 10.41 | 8.7 | 9.0 | 3.74 | -6.66 | pp |
| Poverty headcount ratio, rural (percent of population) | INS (2015) | .49* | 62.5** | - | .56.8*** | .5.7 | pp |
| Poverty headcount ratio, national (percent of rural population) | INS (2015) | 38.4* | .48.9** | | .46.3*** | -2.6 | pp |
| Poverty headcount ratio, international poverty, $1.90/day (percent of the population) | The World Bank, 2017 | | 29.1 | | 28.2 | | pp |

Note: For poverty headcount ration (national and rural), estimation of National Institute of Statistics; * for 2002; ** for 2008 and *** for 2015
pp: percentage points

3. **Policy Coherence and Agricultural Development Goals**

In Côte d'Ivoire, as in most African countries, agricultural development policies and strategies operate in an environment where several documents co-exist that may not necessarily be coherent. In the specific case of Côte d'Ivoire, the joint agricultural sector review carried out an inventory of agricultural sector development policies and strategies and showed that there may be some inconsistency between them (Côte d'Ivoire, 2015). This section presents the main policy and strategy documents included and provides an analysis of their coherence. The analysis of coherence is done by trying to find links between the objectives and/or strategic axes of the different policies and strategies and agendas.

The long-term vision of Côte d'Ivoire was reflected in the fourth National Prospective Study of the country called Côte d'Ivoire 2040 (ENP-CI 2040). It envisages Côte d'Ivoire as "an industrial power, united in its cultural, democratic and open to the world diversity" by the year 2040. To achieve this ambitious vision by 2040, Côte d'Ivoire 2040 is supposed to be the reference document for all plans and programs to be developed. To operationalize this vision, Côte d'Ivoire has adopted a shorter-term planning process through the National Development Plans, the latest of which is the 2016-2020 National Development Plan (NDP 2016-2020), the reference document for all national development strategies. The aim of the NDP 2016-2020 is to set up a solid industrialization process by focusing on improving the transformation rate of agricultural raw materials and diversifying the industrial productive sector. Also, poverty reduction and a better policy for redistributing growth benefits are presented as a pillar of this new vision. The strategy for the structural transformation of the economy will be based on the competitiveness of the economy and the transformation of commodities and exports. By the end of the implementation period of the NDP, GDP per capita is expected to have doubled, the well-being of the population to have improved, food self-sufficiency strengthened and access to drinking water and electricity facilitated and expanded. To achieve these ambitions, the investment rate would have to increase from 18.7 percent of GDP in 2015 to 23.9 percent of GDP in 2020. At the same time, the private sector's contribution to investment, including Public-Private Partnerships (PPPs), is expected to reach 70 percent in 2020. In this process, although structural transformation and industrialization are considered essential, agriculture is expected to continue to play a central role.

The Côte d'Ivoire NAIP is based on the West African Regional Agricultural Policy (ECOWAP), which itself stems from the CAADP. The NAIP is based on a planning process strictly aligned with the NDP. In addition, it constitutes the reference document for all policies and strategies in the agricultural sector and incorporates the objectives and targets of CAADP. The NAIP 2017-2025 has three strategic objectives: (i) the development of value-added of agro-sylvo-pastoral and fisheries, (ii) strengthening agro-sylvo-pastoral and fisheries production systems that respect the environment, (iii) inclusive growth, guaranteeing rural

development and the well-being of the population. These strategic objectives have been translated into six investment programs for the period 2017-2025: Program 1: Productivity and sustainable development of agro-sylvo-pastoral and fisheries production, Program 2: Improving value-added and market performance, Program 3: Sustainable management of environmental resources and climate resilience, Program 4: Improvement of the living conditions of the actors, and promotion of the agro-sylvo-pastoral and fisheries sector, Program 5: Expanding access to finance and private investment channels, Program 6: Strengthening the institutional framework, sector governance and business environment. The Second NAIP serves as the framework for programming public and private investments in the sector for the next eight years in order to stimulate sectoral growth, reduce poverty by half, and to reach zero hunger by 2025.

*Table 2 Summary of countrywide and agriculture sector specific policies for Côte d'Ivoire*

| Policy | Description | Timeframe |
|---|---|---|
| VISION CI 2040 | To make Côte d'Ivoire, an industrialized country, united in its cultural diversity, democratic and open to the world | 2016-2040 |
| NDP | National Development Plans (NDP): It is Medium-term planning as the reference document for sectoral and global policies and strategies | 2012-2015 2016-2020 |
| NAIP | National Agricultural Investment Program (NAIP): aligned with the NDP, it is the reference document for all development policies and strategies in the agricultural sector | 2010-2015 |

Eleven years after the 2003 Maputo Declaration, African Heads of State and Government adopted a new declaration renewing the Comprehensive Africa Agriculture Development Program (CAADP), which was designed as part of the New Partnership for Africa's Development (NEPAD). This is the Malabo Declaration of June 2014. This declaration aims to promote accelerated agricultural growth and transformation for shared prosperity and improved livelihoods in Africa. Thus, the revised CAADP framework aims to sustainably transform the African agricultural sector, create wealth, ensure food and nutrition security and contribute to inclusive economic growth. The Malabo Declaration contains seven priority areas or commitments that countries must address: retain the principles and values of the CAADP process; increase investment finance in agriculture; eradicate hunger in Africa by 2025 by accelerating agricultural growth by at least doubling current levels of agricultural productivity; halve poverty by 2025, through inclusive agricultural growth and transformation; stimulate intra-African trade in agricultural products and services by tripling intra-African trade in agricultural products; strengthen the resilience of livelihoods and production systems to climate variability and other shocks, and ensure mutual accountability for actions and results. In the implementation of actions aimed at agricultural development, social protection initiatives for vulnerable social groups are expected to be taken into account. Similarly, given the high prevalence of poverty in rural areas in general and among farmers in particular, the process of agricultural growth and transformation must be inclusive. To do this, it must contribute at least 50 percent

to growth. With the increase in public spending to a minimum of 10 percent of total government spending and the strengthening of public-private partnerships, CAADP aims to achieve at least a 6 percent growth in agricultural GDP. To foster job creation, especially for young people, the country must specifically target small family farms and the development of agricultural value chains. In addition, the implementation of CAADP should help to expand intra-African trade, which will be facilitated by the establishment of the continental free trade area.

The Sustainable Development Goals (SDGs), were initiated by the United Nations. They constitute a global call to eradicate poverty, protect the earth and promote shared peace and prosperity around the world. There are 17 SDGs, which provide the way forward to achieve a better and more sustainable future for all. They constitute a set of interconnected objectives with targets to be achieved by 2030. In this study, we assess the contribution of agricultural development to the achievement of five of the 17 SDGs. The choice of the SDGs that were taken into account in this evaluation was dictated by the ability of the analysis tools to support them adequately and rigorously. Thus the analysis focused on: (i) end poverty in all its forms everywhere (SDG 1), (ii) end hunger, achieve food security and improved nutrition and promote sustainable agriculture (SDG 2); (iii) promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (SDG 8), (iv) Inclusive and sustainable industrialization (SDG 9) and (v) reduce inequality within and among countries (SGD 10).

In order to implement the pan-African vision of an "integrated, prosperous and peaceful Africa, led by its own citizens and representing a dynamic force on the international scene" (OAU, 2013), a fifty-year continental agenda has been developed following stakeholder consultation. Agenda 2063 will be the responsibility of the Planning and Coordination Agency of the New Partnership for Africa's Development (NEPAD Agency), which will ensure its implementation. This vision will focus on achieving 7 concrete objectives, namely a prosperous Africa based on inclusive growth and sustainable development; an integrated continent, politically united, based on the ideals of pan-Africanism and the vision of Africa's renaissance; an Africa where good governance, democracy, respect for human rights, justice and the rule of law prevail; a peaceful and secure Africa; an Africa with an identity, a common heritage, shared values and a strong cultural ethic; an Africa where development is people-centered, including the potential of women and youth; an Africa, as a strong, united and influential actor and partner in the world. In addition to bringing together Africa's aspirations for the future, Agenda 2063 identifies key programs that can boost Africa's economic growth and development. This development is not possible without the agricultural sector and it is in this perspective that the agricultural component is addressed in the first aspiration that aims to modernize agriculture for greater production and productivity. The Agenda 2063 results framework is organized into aspirations. Each aspiration includes some goals which subdivided into priority areas. In this study, the assessment is focused on five priority areas, namely: (i) poverty, inequality, and hunger, (ii)

incomes, jobs, and decent work, (iii) sustainable and inclusive economic growth, and (iv) agricultural productivity and production.

Table 3 below summarizes the coherence among the three agendas and Cote d'Ivoire's sector specific and county goals. This mapping facilitates the discussion of the results framework in the sections to follow.

*Table 3 Mapping of Côte d'Ivoire's plans, CAADP, Africa Agenda 2063 and SDGs goals*

| VISION CI 2040 | NDP | NAIP | CAADP | AGENDA 2063 | SDGs |
|---|---|---|---|---|---|
| Pillar 1: Côte d'Ivoire, an industrial power | Axis 1: Strengthening the quality of institutions and governance | Program 6: Strengthening the institutional framework, sector governance and business environment. | **Cross-cutting** | Goal 9: Continental Financial and Monetary Institutions are established and functional; Goal 10: World Class Infrastructure crisscrosses Africa. Goal 12: Capable institutions and transformative leadership in place | SDG 16: Guarantee Peace, Justice, and Strong Institutions SDG 17: Build Partnerships for the Goals |
| | Axis 2: Accelerating the development of human capital and social well-being to increase the employability of the population and the level of skills. | Program 4: Improvement of the living conditions of the actors, and promotion of the agro-sylvo-pastoral and fisheries sector | Pillar 2: Improving rural infrastructure and trade capacity to facilitate market access | Goal 4:Transformed Economies Goal 5: Modern Agriculture for increased productivity and production | SDG 2: Zero hunger SDG 8: Decent work and economic growth SDG 9: Increase Industry, Innovation, and Infrastructure |
| | Axis 3: Accelerating the structural transformation of the economy through industrialization | Program 1: Productivity and sustainable development of agro-sylvo-pastoral and fisheries production | Pillar 1: Increase the area under cultivation and served by reliable water control systems in a sustainable manner | Goal 5: Modern Agriculture for increased productivity and production Goal 7: Environmentally sustainable and climate resilient economies and communities | SDG 9: Increase Industry, Innovation, and Infrastructure SDG 13: Climate action SDG 14: Life below water SDG 15: Life on land |
| | | | Pillar 4: Improving agricultural research, technology diffusion and adoption | Goal 2; Well Educated Citizens and Skills revolution underpinned by Science, Technology, and Innovation Goal 10: World Class Infrastructure crisscrosses Africa. | SDG 4: Quality of education SDG 9: Increase Industry, Innovation, and Infrastructure |
| | | Program 2: Improving value-added and market performance | Pillar 2: Improving rural infrastructure and trade capacity to facilitate market access | Goal: 1, 3, 4, 5 Goal 4: Transformed Economies | SDG 1: Eliminate Poverty SDG 2: Erase Hunger |

| VISION CI 2040 | NDP | NAIP | CAADP | AGENDA 2063 | SDGs |
|---|---|---|---|---|---|
| | | | Pillar 3: Increase food supplies, reduce hunger, improve responses to food emergencies | Goal 10: World Class Infrastructure crisscrosses Africa. | SDG 3: Establish Good Health and Well-Being SDG 8: Create Decent Work and Economic Growth SDG 9: Increase Industry, Innovation, and Infrastructure |
| | | Program 5: Expanding access to finance and private investment channels | **Cross-cutting** | Goal 10: World Class Infrastructure crisscrosses Africa. Goal 20: Africa takes full responsibility for financing her development | SDG 9: Industry, innovation, and infrastructure |
| | Axis 4: Development of infrastructure on the national territory and preservation of the environment | Program 3: Sustainable management of environmental resources and climate resilience | Pillar 4: Improving agricultural research, technology diffusion and adoption | Goal 2; Well Educated Citizens and Skills revolution underpinned by Science, Technology, and Innovation Goal 7: Environmentally sustainable and climate resilient economies and communities Goal 10: World Class Infrastructure crisscrosses Africa. | SDG 4: Quality of education SDG 9: Increase Industry, Innovation, and Infrastructure |
| Pillar 4: Côte d'Ivoire, open to the world | Axis 5: Strengthening regional integration and international cooperation | Program 2: Improving value-added and market performance | Pillar 2: Improving rural infrastructure and trade capacity to facilitate market access | Goal 4: Transformed Economies Goal 5: Modern Agriculture for increased productivity and production Goal 10: World Class Infrastructure crisscrosses Africa. | SDG 8: Decent work and economic growth SDG 9: Increase Industry, Innovation, and Infrastructure |

The comparison of the strategic axes and objectives of Côte d'Ivoire's long-term vision and the various development policies and strategies shows a certain coherence. It appears that the axes of the 2016-2020 NDP can be linked to at least two pillars of the Côte d'Ivoire 2040 vision. These are Pillar 1 and Pillar 4. These pillars support axes 1 to 5 of the NDP, which itself serves as the basis for the 2017-2025 NAIP. The vision and other national documents are consistent with the continental agricultural sector wide commitments and goals as set out in the CAADP Malabo, SDGs and Agenda 2063 commitments and goals. Each of the commitments has goals, some similar, others different. These targets are used in assessing whether the country would be able to attain the goals set out in the different commitments.

4. **Prospects for Agricultural Development**

The methodological approach used in this study is based on a modelling exercise that combines two analytical tools. These tools consist of a macroeconomic model and a microeconomic analysis model. The macroeconomic model used is a computable general equilibrium model that considers all institutional agents and economic sectors of Côte d'Ivoire's economy. It is an application of the model by Fofana et al (2019) that makes it possible to take into account growth and investment objectives and targets. With a relatively standard approach on certain aspects, it specifies the behavior of several economic agents. Thus, consumers maximize their well-being given the prices on the market for goods and services and their income constraints. Producers maximize their profit given the prices of the goods and services, and the factors of production and taking into account the available technology. On the other hand, the government remains passive in the model. Its role is to redistribute economic wealth through the collection of taxes (direct and indirect), transfers to households and firms and the supply of public services. In line with the assumption of a small open economy, we assume that international import and export prices are exogenous.

This computable general equilibrium model is articulated with a microeconomic model, which is a mathematical optimization model designed to capture the probability changes associated with individual income levels. It uses the concept of entropy as discussed by Golan (2006) and applied by Lee and Judge (1996) to generate the transient probability parameters of a Markov process or Markov chain. This approach has two advantages. First, by setting the objectives of poverty reduction and hunger eradication, we can determine the targets for total consumption expenditure and food consumption required to achieve the Malabo goals. Second, by using the consumption results provided by the computable general equilibrium model, the model links investment options to poverty and hunger reduction outcomes. Further details on the characteristics of the micro and macro-economic models are available in Fofana et al (2019).

The computable general equilibrium model is calibrated using a social accounting matrix (SAM) of the Ivorian economy based on the 2015 national accounting data. The SAM is a square matrix that describes the transaction flows taking place within Cote d'Ivoire economy during 2015. It has 125 accounts, including

52 activity accounts and as many revenue accounts. To better understand the specific impact of interventions in the agricultural sector, it has been broken down into 19 branches and 19 agricultural products, thus highlighting the key agricultural branches of the Ivorian economy. The rest of the world has also been subdivided into two trading blocs, Africa and the rest of the world. The microsimulation model uses data from the 2015 Household Standard of Living Survey (ENV 2015) conducted by the National Statistical Institute. The ENV data are nationally representative. With a total of 33 strata, a sample ranging from 276 to 1,188 households was drawn in each stratum. This led to a total representative sample of 12,900 households throughout Côte d'Ivoire. The ENV presents the poverty profile and evolution of various poverty indicators in the country. The measurement of poverty is determined relative to household expenditures. Poverty in 2015 is defined as consumption expenditure lower than 737 Francs CFA per day or about 269 005 CFA per year. The threshold for extreme poverty is used to calculate food poverty measured as the proportion of the population spending less than 335 CFA per day. The microeconomic data from the survey are combined with household final consumption expenditure data from simulations using the computable general equilibrium model to make poverty projections over the study period.

On the basis of the trends observed in the main macroeconomic and sectoral variables of the Ivorian economy in recent years, the analytical instruments developed in the study are used to construct the reference scenario. Trends in macroeconomic and sectoral variables were calculated from FIM data (MFI, 2019), the world development indicators database (World Bank, 2019). These data have been supplemented by those of ReSAKSS (2019). Table 4 shows the average annual change in some macroeconomic variables between 2011 and 2014. and the expected change over the period 2015-2024.

For the simulation period corresponding to that of the CAADP 2015-2025, the Ivorian economy is assumed to follow, all other things being equal, the performance observed between 2011 and 2014 (Tables 4 and 5).

*Table 4: Cote d'Ivoire's selected economic variables, trends and outlook 2011-2024*

| Subject Descriptor | Units | 2011-2014 | 2015-2024 |
|---|---|---|---|
| Gross domestic product, constant prices | Percent change | 7.3 | 7.3 |
| Total investment | Per cent of GDP | 22.9 | 22.9 |
| Gross national savings | Per cent of GDP | 20.4 | 20.4 |
| The volume of imports of goods and services | Per cent change | 9.6 | 9.6 |
| The volume of exports of goods and services | Per cent change | 5.8 | 5.8 |
| Current account balance | Percent of GDP | -2.4 | -2.4 |

Source: World Economic Outlook (IMF, 2019)

Over the period 2011 - 2014, the economic growth rate was above 7 percent per year. This economic dynamic is driven by a level of investment that will remain around 23 percent of GDP with a savings rate of about 20.4 percent of GDP. Over the same period, Imports of goods and services increased by 9.6 percent

and exports by 5.8 percent. This economic performance made it possible to maintain the current account deficit of the balance of payments at around -2.4 percent of GDP. The very strong economic growth is partly due to the catching-up of the economy following the end of the serious post-election crisis of 2010-2011. Notwithstanding, the country subsequently continued to record significant economic performance with growth rates above 7 percent.

*Table 5: Cote d'Ivoire's selected socioeconomic variables, trends 2013-2018*

| Subject Descriptor | 2013-2014 | 2015-2018 |
|---|---|---|
| Households and NPISHs Final consumption expenditure (annual  percent growth) | 7.2 | 9.1 |
| Agriculture, forestry, and fishing, value added (annual  percent growth) | 10.2 | 6.4 |
| Industry (including construction), value added (annual  percent growth) | 16.7 | 6.3 |
| Manufacturing, value added (annual  percent growth) | 8.3 | 6.3 |
| Services, value added (annual  percent growth) | 6.4 | 3.1 |
| Labor force (annual  percentgrowth) | 2.0 | 2.4 |
| Employment (Annual  percentgrowth) | 3.9 | 2.7 |
| Population growth (annual  percent) | 2.5 | 2.5 |
| Rural population growth (annual  percent) | 1.7 | 1.7 |
| Urban population growth (annual  percent) | 3.4 | 3.4 |
| Unemployment, total ( percent of total labor force) (modeled ILO estimate) | 4.0 | 2.7 |
| Government agriculture expenditure ( percent share)** | 4.7 | 3.8 |
| Capital expenditure( percentGDP)* | 5.9 | 6.7 |
| Capital expenditure ( percent annual growth)* | 29.1 | 13.1 |

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

The strong growth of the Ivorian economy in recent years has resulted in an increase in household consumption expenditure, which grew by more than 7 percent in 2013-2014. This increase, which began after the 2010-2011 post-election crisis, explains the decline in the poverty rate observed between the 2008 and 20015 household standard of living surveys.

At the sectoral level, the agriculture, industry and services sectors recorded strong growth. With a population growth rate of 2.5 percent per year, down sharply from the 1998 general population and housing census, which put it at 3.3 percent per year, Ivorian agriculture is likely to face a labor constraint. Indeed, the growth rate of the rural population is about 1.7 percent per year compared to 3.4 percent for the urban population. This is indicative of the acceleration of urbanization in Côte d'Ivoire, where the urban population is on the way to overtaking the rural population. This dynamic also indicates the challenges for Côte d'Ivoire to establish more productive agriculture to meet a food demand that will grow under the impact of urbanization in a context of scarcity of agricultural labor.

## 5. **Results**

The simulation results under the BaU scenario are compared with CAADP targets in Table 6. It appears that under this hypothesis, Côte d'Ivoire would achieve an agricultural growth rate higher than the 6 percent target set in the Malabo Declaration. Similarly, private investment would increase and progress could be made in most Malabo indicators. However, progress would generally remain below CAADP targets. In other words, neither the poverty reduction objectives nor the nutrition and food security targets would be achieved. Similarly, despite the increase in intra-African trade in agricultural and food products, Côte d'Ivoire will fall well below the target of tripling intra-continental trade.

*Table 6: Progress towards selected CAADP goals, BaU Scenario (percent cumulative 2015-25)*

| Goal | Result | Metric | BaU Progress | CAADP Target |
|---|---|---|---|---|
| Increase in Agriculture Investment | Increase in Agricultural Public Investment | Public Agricultural Investment, Share of Total Public Investment | 3.8 | **10.0** |
| | Increase Agricultural Private Investment | Private Agricultural Investment | 49.6 | > |
| End Hunger | Increase Agricultural Productivity | Total Factor Productivity Agriculture | 25.9 | **100.0** |
| | | Agricultural Labor Productivity | 57.8 | **100.0** |
| | Increase Agricultural Post-Production Productivity | Total Factor Productivity, Domestic Trade | 32.0 | **50.0** |
| | | Total Factor Productivity, Food Industries | 43.8 | **50.0** |
| | Increase Consumption of Locally Produced Food | Consumption Locally Produced Food, Ratio Total Food Consumption | 0.7 | > |
| | Reduction of Extreme Income Poverty | Poverty Headcount Index, Food poverty line, Change ( percent) | -35.7 | **-95.0** |
| Halve Poverty | Accelerate Agricultural Growth | Agricultural GDP, Annual Growth | 6.4 | **6.0** |
| | Achieve Agriculture-led Poverty Reduction | Agricultural contribution to GDP Growth | 20.2 | **50.0** |
| | Reduction of Income Poverty | Poverty Headcount Index, National poverty line | -24.3 | **-50.0** |
| Boost Intra-African Agricultural Trade | Increase Intra-Africa Agricultural Trade | Intra-Africa Imports and Exports of Agricultural and Food Commodities | 67.2 | **200.0** |

Source: Simulation Results.
Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to 2025. Values for "Agricultural Share Public Investment" and "Agriculture Contribution to GDP Growth" denote average annual shares. Values for "Agricultural GDP, Annual" refer to average annual growth rates.
Green indicates that the goal is met (> 90 percent); yellow indicates that much progress is made toward the goal (>50 percent and 90 percent); orange indicates that little progress is made toward the goal (>10 percent and 50 percent); red indicates that very little progress is made toward the goal (10 percent 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.

With regard to the United Nations' sustainable development goals, Côte d'Ivoire could achieve some of them, with significant progress on others (see Table 7).

*Table 7: Progress towards Selected SDGs, BaU Scenario (percent cumulative 2015-30)*

| Goals | Result | Metric | BaU Progress | SDGs Target |
|---|---|---|---|---|
| Halving poverty (Goal 1) | Eradicate extreme poverty | Proportion of population below the international poverty line of $1.90 a day PPP | -40.4 | **-95.0** |
| | Reduce at least by half the proportion of the population living in poverty | The proportion of the population living below the national poverty line | -31.6 | **-50.0** |
| End hunger (Goal 2) | Double the agricultural productivity and incomes of small-scale food producers | The volume of agricultural production per worker | 66.9 | **100.0** |
| | | The average income of food producers | 70.3 | **100.0** |
| Sustainable economic growth (SDG 8) | Sustain per capita economic growth | The annual growth rate of real GDP per capita | 91.0 | **>** |
| | | The annual growth rate of real GDP | 7.1 | **7.0** |
| | | The annual growth rate of real GDP per employed person | 82.4 | **>** |
| | Achieve full and productive employment and decent work | Average hourly earnings | 171.1 | **>** |
| | | Unemployment rate, change | 0.0 | **<6** |
| Inclusive and sustainable industrialization (SDG 9) | Promote inclusive and sustainable industrialization | Manufacturing value added as a proportion of GDP and per capita | 16.4 | **100.0** |
| | | Manufacturing employment as a proportion of total employment | -9.6 | **100.0** |
| Reduce inequality (SDG 10) | Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality | Labor earning share of GDP | 13.1 | **>** |

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to 2030. Values for "GDP, Annual Growth" refers to average annual growth rates. Values for "Unemployment rate" are reported for the specific year, i.e. they are not cumulative. Green indicates that the goal is met (> 90 percent); yellow indicates that much progress is made toward the goal (>50 percent and 90 percent); orange indicates that little progress is made toward the goal (>10 percent and 50 percent); red indicates that very little progress is made toward the goal (10 percent 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.

In fact, according to the results of the BaU scenario, the country could achieve SDG 8 on sustainable economic growth and SDG 10 on reducing inequalities. The achievement of SDG 8 could be achieved through the achievement of a real GDP growth rate above 7 percent, high performance of worker productivity, which sees GDP per person employed improving sharply, leading to a sharp increase in the hourly wage rate. The increase in productivity of labor would naturally translate into an increase in the share of labor in GDP, which would explain the achievement of the SDG 8. Côte d'Ivoire would certainly make progress in reducing poverty and hunger but this progress will not be sufficient to meet the targets set by the UN by 2030. In addition, the country will be well below the targets for the conduct of inclusive and sustainable industrialization.

Table 8 presents the results under the assumption of continuity with regard to the objectives of the African Union's Agenda 2063.

*Table 8: Progress towards selected goals of Agenda 2063, BaU Scenario (percent cumulative 2015-2035)*

| Goal | Result | Metric | BaU Progress | Agenda 2063 Target |
|------|--------|--------|--------------|--------------------|
| Poverty, inequality, and hunger | Poverty Reduction | The proportion of population below the international poverty line of $1.90 a day PPP | -53.2 | **-95.0** |
| | | The proportion of the population living below the national poverty line | -42.8 | **-95.0** |
| | Hunger Eradication | Food Import Dependency Ratio | -10.8 | **-70.0** |
| | Inequality Reduction | Rural-to-Urban Income Ratio | 20.3 | **50.0** |
| Incomes, jobs and decent work | Employment and Incomes | Unemployment Rate | 0.0 | **6.0** |
| | | Per Capita Income Growth | 158.4 | **>** |
| Sustainable and inclusive economic growth | Inclusive Economic Growth | GDP, Annual Growth | 7.1 | **7.0** |
| | Intra-African Trade | Value of intra-Africa Trade | 58.5 | **500.0** |
| Agricultural productivity and production | Productivity Growth | Agricultural TFP | 312.2 | **120.0** |

Source: Simulation Results
Note: Unless otherwise noted, values shown are cumulative changes from 2015 to 2035. Values for "GDP, Annual Growth" refers to average annual growth rates. Values for "Unemployment rate" are reported for the specific year, i.e. they are not cumulative.
Green indicates that the goal is met (> 90 percent); yellow indicates that much progress is made toward the goal (>50 percent and 90 percent); orange indicates that little progress is made toward the goal (>10 percent and 50 percent); red indicates that very little progress is made toward the goal (10 percent 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.

In terms of the performance of its economy, Côte d'Ivoire, by 2035, could achieve two of the four objectives of Agenda 2063 covered in this analysis. These are the objectives of income, employment, and decent work and agricultural productivity and production. In fact, the continuation of the trends observed in the Ivorian economy, all other things being equal, would result in a decline in unemployment so that the unemployment rate would be below the target of 6 percent. Similarly, per capita income could increase significantly. With regard to the agricultural productivity and production objective, Côte d'Ivoire could achieve performance well above the target set by the African Union in the context of Agenda 2063. However, despite progress in several indicators, the country could not achieve the goals of eradicating poverty and hunger and reducing inequality.
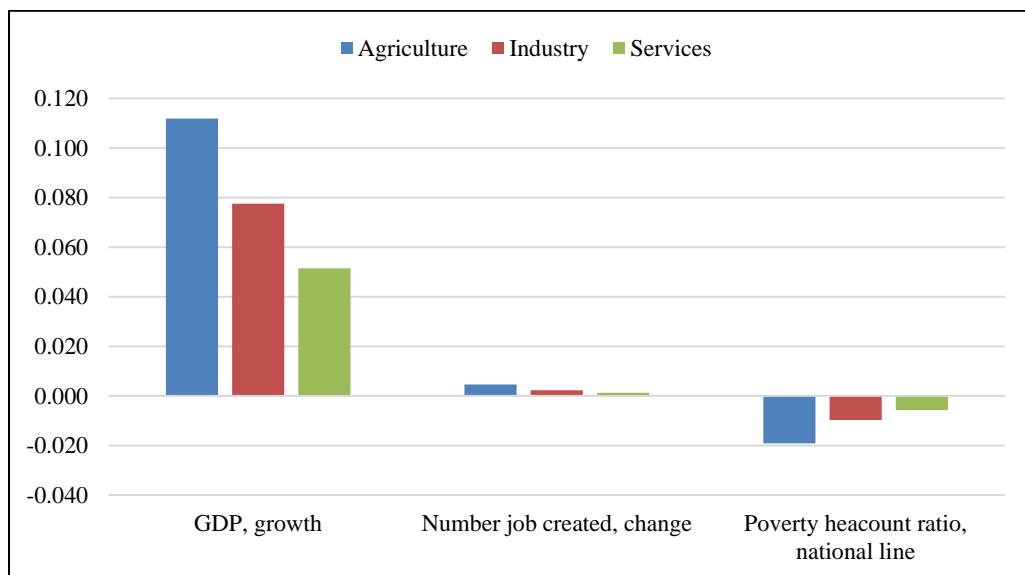
The previous analysis shows that continuation with business, as usual, would not allow Côte d'Ivoire to achieve some of the CAADP's development objectives, the SDGs and the Agenda 2063. The country would make progress on a number of objectives in these agendas but would not be on track to achieve most of

them. Therefore, in the next sections, we look at options for accelerating growth and transforming agriculture to achieve the objectives set by the three agendas.

The quest for accelerated growth and transformation of agriculture advocated by the Malabo Declaration requires, among other, public financing efforts to improve competitiveness and the achievement of the sector's development objectives. In this context, it is important to ensure the judicious allocation of investments, including their distribution among the different sectors of the economy and along the agricultural value chain. In addition, in the context of scarce resources, an appropriate strategy for financing the required public investments is needed. The sections below address these issues.

The results of our simulations show that increasing public investment produces more benefits than the reference scenario, regardless of the destination sector for this additional investment. However, these results indicate that increasing public investment in the agricultural sector by 1 percent seems more effective than increasing it in the industrial or service sectors. In fact, this option seems to have a greater impact both in terms of GDP growth and in terms of job creation and poverty reduction. It follows from this observation that, in the Ivorian context, an agriculture-led growth strategy may be relevant, given the effect of the sectoral allocation of public investment.

*Figure 1: Growth and poverty effects of a 1 percentage point increase in public investment by economic sector, percentage point change from baseline*
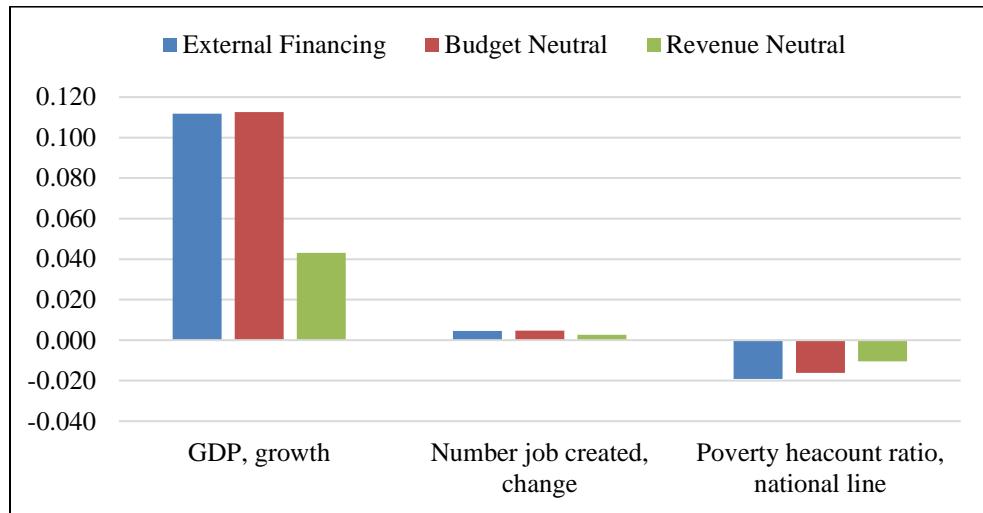


Source: Simulation results.
Note: Under external financing option.

We now turn to an analysis of the impact of the financing options for increasing public investment in agriculture. Three options for financing agricultural investments are considered. Two are domestic financing options. These are the "expenditure neutrality" and the "balanced budget" approaches. The

"expenditure neutrality" approach consists of financing the increase in public agricultural investment through the decline in public investment in industry and services. However, the overall level of total public investment remains variable. The "balanced budget" option would require that additional public agricultural investments be financed by an increase in the investment budget through direct or indirect taxation. The option of this analysis focuses on direct taxation, i.e. increasing the tax on household income and wealth. The third financing option is external financing. In other words, the resources needed to finance the additional investments come from outside while non-agricultural investments remain unchanged compared to the reference scenario. The impact of the different options on economic growth, job creation, and poverty is presented in Figure 2.

*Figure 2: Growth and poverty effects of a 1 percentage point increase in public investment by financing option, percentage point change from baseline*
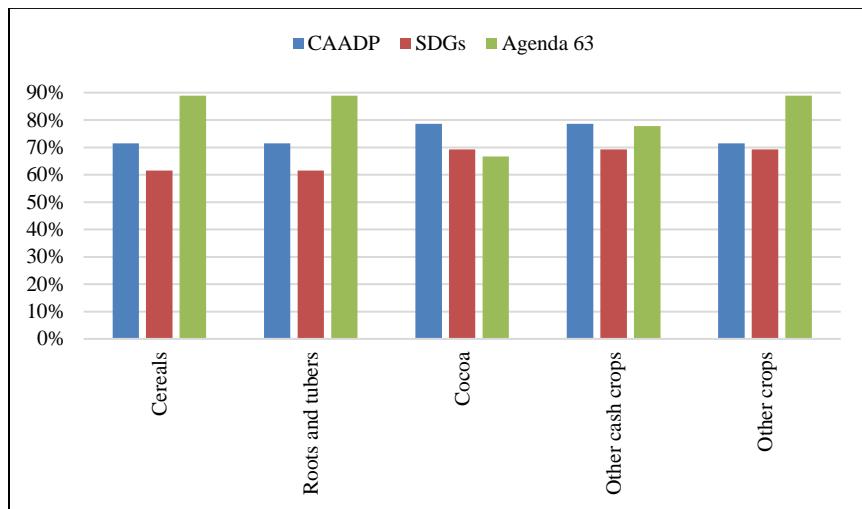


Source: Simulation Results

The results indicate that all three options have a positive impact on economic growth, job creation and poverty reduction. However, it appears that in terms of growth and job creation, external financing and budget neutrality seem to have equivalent impacts while in terms of poverty reduction, the effect of external financing is relatively greater.

The effectiveness of interventions for the three Agendas under analysis depends on the sub-sectoral focus, which will be analyzed below. The agricultural sector has been divided into five sub-sectors: cereals, roots and tubers, cocoa, other agricultural speculations and the rest of agriculture. For each sub-sector, we have calculated an efficiency score, the results of which are summarized in Figure 3.

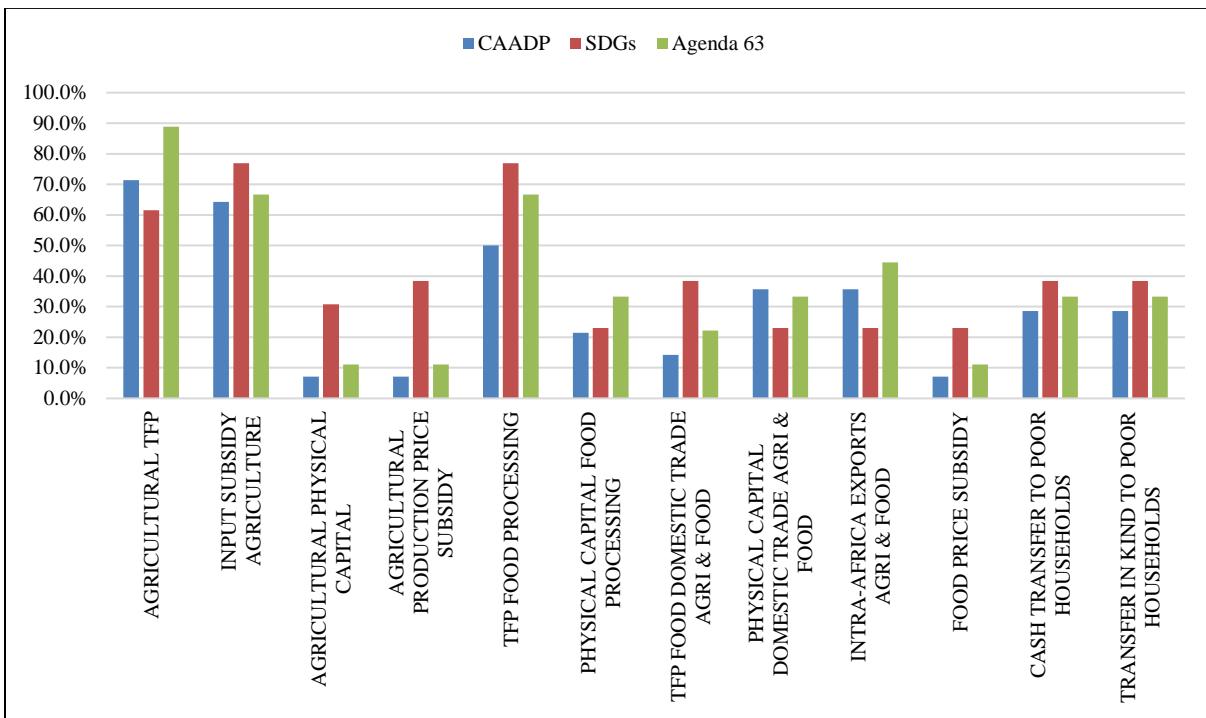*Figure 3: Public investment effectiveness score by agricultural sub-sector*

Intervention strategies along the agricultural value chain can be classified into the following three categories. First, upstream interventions or supply strategies aim to boost the production and supply of agricultural products through increasing agricultural productivity, improving technical efficiency and access to inputs through subsidies and improving agricultural production infrastructure and equipment. Second, mid-stream interventions aim to improve post-production agricultural infrastructure and equipment in order to reduce post-production losses and facilitate the trade of agricultural products. Third, downstream interventions use instruments to increase demand for agricultural and food products. These include reducing the costs of intra-African trade, subsidizing consumer food prices and providing cash and in-kind transfers to poor households. The results of the simulations of these different interventions along the value chain are presented in Figure 4, which shows the effectiveness score of the interventions at different levels of the agricultural value chain.

*Figure 4: Public investment effectiveness score along the agricultural value chain*



Source: Simulation results.
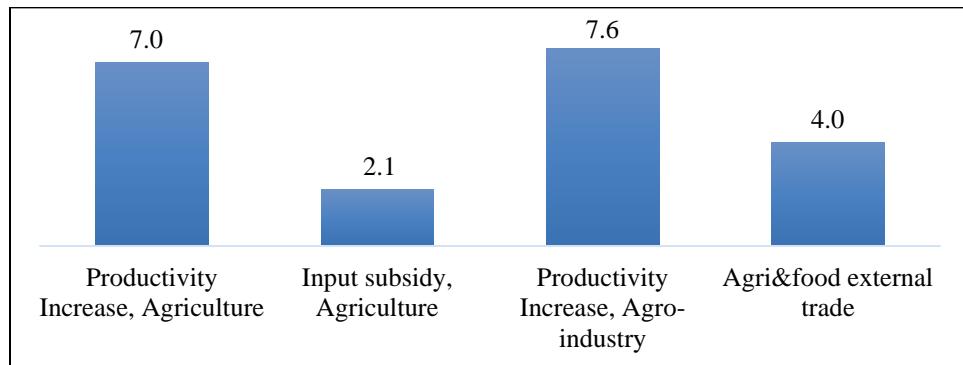Note: Under External Financing Option.

It thus appears that where Agenda 2063 is considered, upstream interventions (improving productivity and improving access to inputs through subsidies) seem to be the most effective. However, interventions on the other segments should not be ruled out. In fact, productivity improvements in the processing of agricultural and food products (intermediate level of the agricultural value chain), and to a lesser extent, downstream interventions (reduction of intra-African trade costs, cash transfers and transfers in kind to poor households) can have significant levels of efficiency.

To achieve the objective of accelerated agricultural growth, scaling up the supply side investments cannot be sustained without increasing the demand side, including the mid-stream investments, i.e., agroindustry and internal trading of agricultural commodities. This section identifies the main segments for investment and the proportion of additional resources for each to contribute to the achievement of CAADP, SDGs and Agenda 2063 objectives (Figure 5). It then analyses the effect of interventions on a few key outcome variables.

The results of the simulations indicate that Côte d'Ivoire should intervene in several segments of the agricultural value chain. In particular, for interventions upstream of the value chain, the focus should be on improving agricultural productivity and subsidizing inputs to facilitate access. At the intermediate level, an

increase in the allocation of resources to efforts to improve the performance of the agro-industry will be necessary. Downstream of the chain, trade in agricultural and agri-food products should be facilitated.
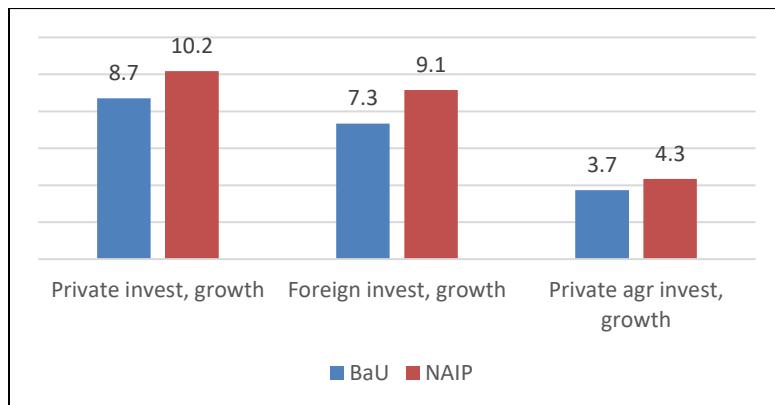
*Figure 5: Public agricultural investment priority areas, percentage point public investment increase compared to BaU*



Source: Simulation results

Public investment efforts in and for the agricultural sector should make the sector more competitive and therefore more attractive to domestic and foreign private investment (Figure 6). The analysis of the results shows that public investment efforts in the agricultural sector will result in an increase in private investment, particularly foreign investment. Similarly, agricultural investment is boosted so that its growth rate increases significantly faster than the rate observed in the reference scenario.

*Figure 6: Percent increase in private investment, annual average*



Source: Simulation Results

Increased investment would reduce agricultural input costs, increase total factor productivity and increase the sector's output growth (Table 9).

*Table 9: Agricultural productivity and production growth, average annual growth (percent)*

|  | BaU | NAIP |
|---|---|---|
| **Cost of agricultural inputs** | -0.1 | -1.9 |
| **Agricultural total factor productivity** | 2.1 | 4.8 |
| **Agricultural Production** | 6.0 | 9.8 |

Source: Simulation Results

The increase in agricultural production will touch all sub-sectors and particularly in the cereals, roots and tubers and cocoa sub-sectors (Table 10).

*Table 10: Percent Change in Production, Exports, and Imports for Selected Agricultural Commodities, NAIS Scenario, Annual Average*
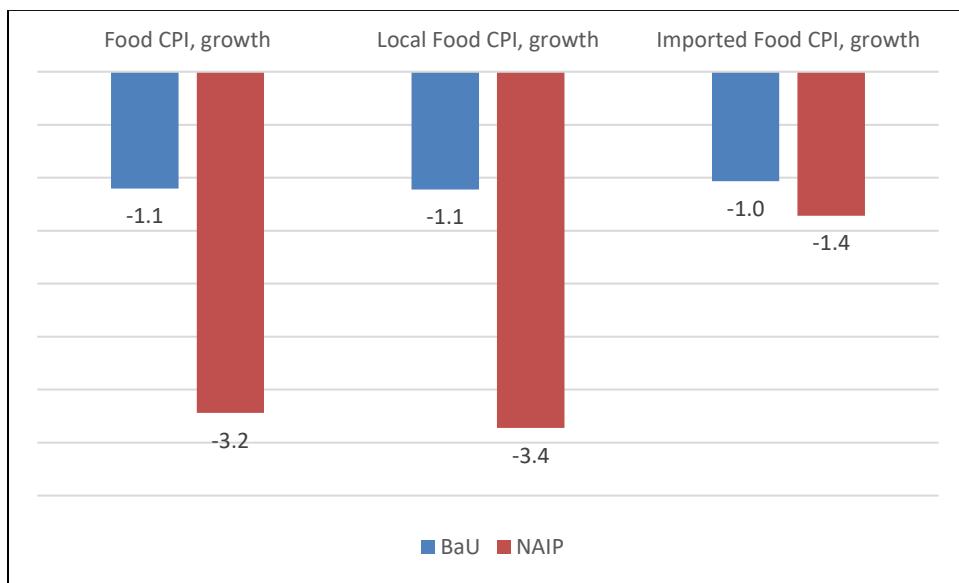
| Commodity | Production growth | Export growth | | | Import growth | | |
|---|---|---|---|---|---|---|---|
| | | Total | Africa | RoW | Total | Africa | RoW |
| Cereals | 12.2 | 15.5 | 15.4 | 27.0 | -4.8 | 4.0 | -4.9 |
| Roots and tubers | 12.5 | 19.3 | 15.0 | 25.8 | -1.2 | 6.2 | -3.1 |
| Cocoa | 12.5 | 10.9 | 9.5 | 10.9 | 0.0 | 0.0 | 0.0 |

Source: Simulation results.
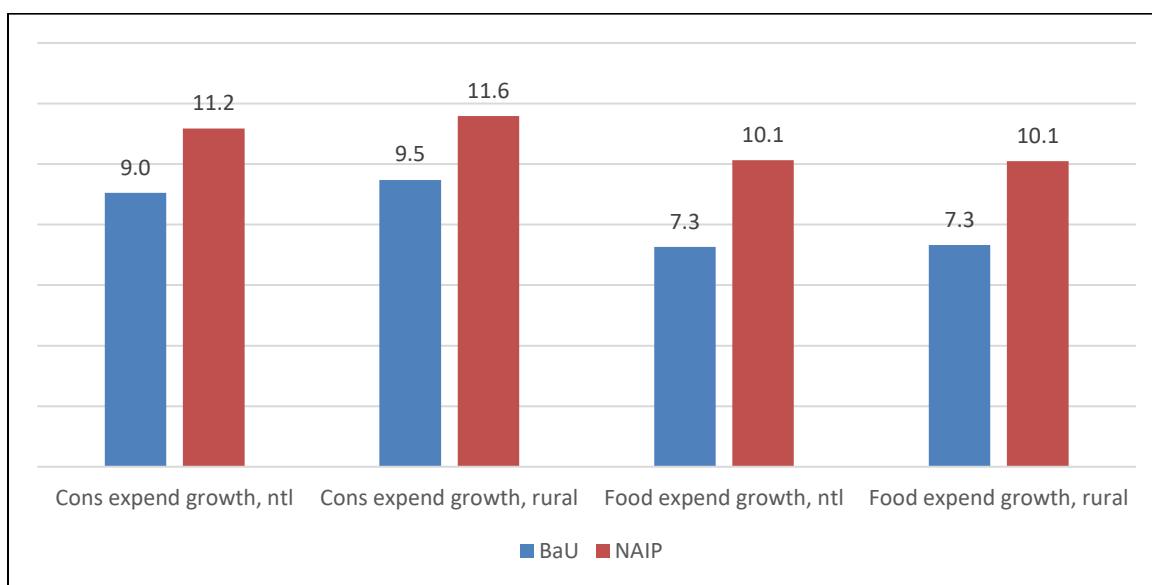Note: RoW: Rest of World.

The performance under the increased investment in agriculture scenario will result in an increase in total exports. The increase in exports would occur both for exports to the rest of Africa and for exports to the rest of the world. On the import side, increased production would result in lower total imports of cereals and roots and tubers, with no imports of cocoa. This result could be explained by the improvement in the competitiveness of domestic production due to higher productivity and lower input costs. The decline in total imports is driven by the decline in imports from non-African countries. Investment efforts in and for agriculture and increased production result in increased food availability, which puts downward pressure on food prices (Figure 7)

*Figure 7: Change in food prices, annual average (percent)*

Thus, the growth rate of the consumer price index for food products is falling sharply, a very significant decline for local food products. This situation leads to an increase in the purchasing power of consumers who, as a result, could increase their total consumer spending both nationally and in rural areas where the effect is stronger (Figure 8).

*Figure 8: Increase in income and food consumption expenditure, annual average (percent)*

An important result is that the implementation of the NAIP is expected to lead to higher growth in rural household consumption expenditure than that recorded at the national level. This should ultimately reduce inequalities between rural and urban areas in terms of consumption and well-being.

This section presents the results that would result from the implementation of the NAIP as presented in the scenario above. The results induced by this implementation of the NAIP are linked to the targets of the three agendas that were the subject of this evaluation. Thus, we compare the results with the CAADP, SDGs and Agenda 2063 targets respectively. Table 11 compares the NAIP's results and progress towards some selected CAADP Goals.

*Table 11: Progress towards selected CAADP goals, NAIP Scenario (Percent Cumulative 2015-2025)*

| Goal | Result | Metric | BaU Progress | NAIP Progress | CAADP Target |
|---|---|---|---|---|---|
| Increase in Agriculture Investment | Increase in Agricultural Public Investment | Public Agricultural Investment, Share of Total Public Investment | 3.8 | 10.8 | **10.0** |
| | Increase Agricultural Private Investment | Private Agricultural Investment | 49.6 | 59.5 | **>** |
| End Hunger | Increase Agricultural Productivity | Total Factor Productivity Agriculture | 25.9 | 67.2 | **100.0** |
| | | Agricultural Labor Productivity | 57.8 | 115.4 | **100.0** |
| | Increase Agricultural Post-Production Productivity | Total Factor Productivity, Domestic Trade | 32.0 | 34.5 | **50.0** |
| | | Total Factor Productivity, Food Industries | 43.8 | 241.4 | **50.0** |
| | Increase Consumption of Locally Produced Food | Consumption Locally Produced Food, Ratio Total Food Consumption | 0.7 | 4.4 | **>** |
| | Reduction Extreme Income Poverty | Poverty Headcount Index, Food poverty line, Change ( percent) | -35.7 | -38.1 | **-95.0** |
| Halve Poverty | Accelerate Agricultural Growth | Agricultural GDP, Annual Growth | 6.4 | 9.5 | **6.0** |
| | Achieve Agriculture-led Poverty Reduction | Agricultural contribution to GDP Growth | 20.2 | 23.4 | **50.0** |
| | Reduction Income Poverty | Poverty Headcount Index, National poverty line | -24.3 | -27.1 | **-50.0** |
| Boost Intra-African Agricultural Trade | Increase Intra-Africa Agricultural Trade | Intra-Africa Imports and Exports of Agricultural and Food Commodities | 67.2 | 170.9 | **200.0** |

Source: Simulation Results.

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to 2025. Values for "Agricultural Share Public Investment" and "Agriculture Contribution to GDP Growth" denote average annual shares. Values for "Agricultural GDP, Annual" refer to average annual growth rates.

Green indicates that the goal is met (> 90 percent); yellow indicates that much progress is made toward the goal (>50 percent and 90 percent); orange indicates that little progress is made toward the goal (>10 percent and 50 percent); red indicates that very little progress is made toward the goal (10 percent 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.

The implementation of the NAIP would enable Côte d'Ivoire to make significant progress and achieve some of the CAADP targets. Thus, the country could achieve investment targets by slightly exceeding the 10 percent share of public expenditure in total government expenditure and a significant increase in private investment in agriculture. This progress in terms of investment could result in an acceleration of agricultural growth so that Côte d'Ivoire's agricultural GDP would increase at a growth rate above the target of 6 percent per year. However, despite progress in terms of productivity in some segments of the agricultural value chain, the country could not achieve the objectives of poverty reduction and hunger eradication. Similarly, although the volume of agricultural and agri-food trade with the rest of Africa will be below the 200 percent increase target set by the Malabo Declaration. With regard to the SDGs, the implementation of the NAIP would enable Côte d'Ivoire to achieve some of them. In particular, the resulting progress would make it possible to achieve SDG 2 on the elimination of hunger and SDG 8 on sustainable economic growth. With a growth rate above the target of 7 percent, a sharp increase in the hourly wage rate and an agricultural GDP per worker that could double by 2030, Côte d'Ivoire can double the average income of food producers. Moreover, SDG 10 will also be achieved through the increase in the share of labor income in GDP, which implies that workers' incomes could increase more quickly than those of other production factors.

*Table 12: Progress towards selected SDGs, NAIP scenario (percent cumulative 2015-30)*

| Goals | Result | Metric | BaU Progress | NAIP Progress | SDGs Target |
|---|---|---|---|---|---|
| Halving poverty (Goal 1) | Eradicate extreme poverty | Proportion of population below the international poverty line of $1.90 a day PPP | -40.4 | -43.5 | **-95.0** |
| | Reduce at least by half the proportion of the population living in poverty | The proportion of the population living below the national poverty line | -31.6 | -35.0 | **-50.0** |
| End hunger (Goal 2) | Double the agricultural productivity and incomes of small-scale food producers | The volume of agricultural production per labor | 66.9 | 107.7 | **100.0** |
| | | The average income of food producers | 70.3 | 102.9 | **100.0** |
| Sustainable economic growth (SDG 8) | Sustain per capita economic growth | The annual growth rate of real GDP per capita | 91.0 | 150.4 | **>** |
| | | The annual growth rate of real GDP | 7.1 | 9.0 | **7.0** |
| | | The annual growth rate of real GDP per employed person | 82.4 | 137.4 | **>** |
| | Achieve full and productive employment and decent work | Average hourly earnings | 171.1 | 246.7 | **>** |
| | | Unemployment rate, change | 0.0 | 0.0 | **<6** |
| Inclusive and sustainable industrialization (SDG 9) | Promote inclusive and sustainable industrialization | Manufacturing value added as a proportion of GDP and per capita | 16.4 | 79.0 | **100.0** |
| | | Manufacturing employment as a proportion of total employment | -9.6 | -16.9 | **100.0** |
| Reduce inequality (SDG 10) | Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality | Labour earning share of GDP | 13.1 | 16.8 | **>** |

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative growth rates from 2015 to 2030. Values for "GDP, Annual Growth" refers to average annual growth rates. Values for "Unemployment rate" are reported for the specific year, i.e. they are not cumulative.

Green indicates that the goal is met (> 90 percent); yellow indicates that much progress is made toward the goal (>50 percent and 90 percent); orange indicates that little progress is made toward the goal (>10 percent and 50 percent); red indicates that very little progress is made toward the goal (10 percent 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.

However, the goal of halving poverty and eradicating extreme poverty cannot be achieved with the NAIP despite progress made under this scenario.

Table 13 presents the results of the implementation of the NAIP and progress towards Agenda 2063. Results indicate that with the NAIP, Côte d'Ivoire could reach the Agenda 2063 targets in the area of agricultural productivity and production by 2035. Similarly, the objective of employment and decent work will be within the country's reach as the agricultural investment would significantly reduce unemployment. This

result could be accompanied by a very strong growth rate in per capita income. However, despite progress in reducing poverty and inequality, the country will fall short of the targets of Agenda 2063.

*Table 13: Progress towards selected objectives of Agenda 2063, NAIP scenario (percent cumulative 2015-2035)*

| Goal | Result | Metric | BaU Progress | NAIP Progress | Agenda 2063 Target |
|---|---|---|---|---|---|
| Poverty, inequality, and hunger | Poverty Reduction | The proportion of population below the international poverty line of $1.90 a day PPP | -53.2 | -56.7 | **-95.0** |
| | | Proportion of population living below the national poverty line | -42.8 | -46.9 | **-95.0** |
| | Hunger Eradication | Food Import Dependency Ratio | -10.8 | -53.6 | **-70.0** |
| | Inequality Reduction | Rural-to-Urban Income Ratio | 20.3 | 28.6 | **50.0** |
| Incomes, jobs and decent work | Employment and Incomes | Unemployment Rate | 0.0 | 0.0 | **6.0** |
| | | Per Capita Income Growth | 158.4 | 284.4 | **>** |
| Sustainable and inclusive economic growth | Inclusive Economic Growth | GDP, Annual Growth | 7.1 | 9.0 | **7.0** |
| | Intra-African Trade | Value of intra-Africa Trade | 58.5 | 179.6 | **500.0** |
| Agricultural productivity and production | Productivity Growth | Agricultural TFP | 312.2 | 504.4 | **120.0** |

Source: Simulation Results

Note: Unless otherwise noted, values shown are cumulative changes from 2015 to 2035. Values for "GDP, Annual Growth" refers to average annual growth rates. Values for "Unemployment rate" are reported for the specific year, i.e. they are not cumulative.

Green indicates that the goal is met (> 90 percent); yellow indicates that much progress is made toward the goal (>50 percent and 90 percent); orange indicates that little progress is made toward the goal (>10 percent and 50 percent); red indicates that very little progress is made toward the goal (10 percent 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.

## 6. **Conclusions**

Following the implementation of the National Agricultural Investment Program (NAIP, 2010-2015) resulting from the Maputo Declaration in 2003, Côte d'Ivoire endorsed the CAADP principles and commitments as set out in the Malabo Declaration. The latter, by taking up the Maputo objectives for the promotion of strong and inclusive agricultural growth, aims for a minimum growth rate of 6 percent with a strong political commitment from the government. This commitment will result in an increase in the budget allocated to the agricultural sector with a minimum of 10 percent of total government expenditure to be spent on the sector. In addition to this commitment, Côte d'Ivoire has subscribed to various international agendas, including the United Nations' SDGs and the African Union's Agenda 2063. These different

agendas have a common basis: the promotion of sustainable and inclusive economic growth, the reduction of poverty and inequality and the eradication of hunger. Considering a large number of obligations arising from these commitments and the multiple objectives and targets pursued, the implementation, monitoring, and evaluation of the various policies remain major challenges for Côte d'Ivoire. With a results framework for 2025, 2030 and 2035 corresponding respectively to CAADP, SDG and Agenda 2063, this study developed a computable general equilibrium model combined with a microsimulation model to measure Côte d'Ivoire's progress for these different agendas.

Under the continuation of business as usual assumption, the simulation results indicate that Côte d'Ivoire may be able to achieve CAADP's 6 percent agricultural growth target. This performance would mainly come from the increase in private investment in and for agriculture. On the other hand, the country will be well below the target of 10 percent of agricultural expenditure in total government expenditure. Similarly, very little progress will be made to enable Côte d'Ivoire to achieve the objectives of poverty reduction, hunger eradication and increased intra-African trade in agricultural and agro-food products and services. With regard to the SDGs, the results show that the dynamics of the Ivorian economy under the reference scenario would enable it to achieve the objectives related to SDG 8 on sustainable economic growth and SDG 10 on reducing inequalities. However, overall progress remains weak towards meeting the other targets, including halving poverty and eliminating hunger by 2030. Similarly, Côte d'Ivoire will not be able to achieve the objective of sustainable and inclusive industrial development. The results are similar for Agenda 2063. Apart from the objectives relating to income and the creation of decent jobs and those relating to agricultural productivity and production, the country will not be able to achieve the quantitative targets included in this analysis. Despite economic growth that will be above 7 percent per year, the objectives related to poverty and hunger eradication, inequality reduction and the target for intra-African trade are out of reach with the baseline scenario.

To accelerate economic growth and achieve the various targets resulting from the international commitments to which Côte d'Ivoire has subscribed, our study has shown that investing in agriculture is the best way forward. To this end, a substantial increase in public agricultural spending must be granted in order to improve the share of agricultural spending in total government spending and reach the Malabo target of 10 percent. This increase will improve the attractiveness of the agricultural sector and encourage private investment in the sector.

The results generated by the simulations indicate that efforts in terms of interventions in and for the agricultural sector should target the downstream segments of the agricultural value chain as well as the intermediate and upstream segments. Thus, the country must implement measures to improve supply (productivity, access to inputs), improve productivity in the processing of agricultural products, remove domestic marketing constraints, promote intra-African trade and strengthen the purchasing power of the

poorest populations through transfers in kind and cash. Similarly, interventions should target cereal chains, roots, and tubers such as the cocoa sub-sector and other cash crops.

Implementation of the NAIP targeting sub-sectors and combining different interventions along the agricultural value chain should result in increased investment. This performance would enable Côte d'Ivoire to meet the CAADP targets of 10 percent of public spending for agricultural growth above the 6 percent set in the Malabo Declaration. However, despite the increase in household final consumption, Côte d'Ivoire will not be able to halve poverty by 2025 or eradicate extreme poverty. Similarly, the increase in agricultural trade between Côte d'Ivoire and the rest of Africa will be insufficient to triple intra-African trade. By 2030, Côte d'Ivoire could reach some of the SDGs This is particularly the case for the target on the elimination of hunger (SDG 8) and SDG 10 on sustainable growth and the reduction of inequalities respectively. However, as is the case in the African Union's CAADP and Agenda 2063, poverty reduction or eradication and intra-African trade targets seem to be out of reach.

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