Ministry of Agriculture and Food Security

MOZAMBIQUE NATIONAL AGRICULTURAL INVESTMENT PLAN (PNISA):

ASSESSMENT

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ACRONYMS AND ABBREVIATIONS

AgRED	Donor Working Group for Agriculture and Rural Development
CAADP	Comprehensive Africa Agriculture Development Program
CCSA	Comité de Coordenação do Sector Agrário (Agricultural Sector Coordinating Committee)
CEPAGRI	Centro de Promoção de Agricultura (Center for the Promotion of Commercial Agriculture)
CTA	Confederação das Associações Económicas
DUAT	land use right
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
ha	hectare
IIAM	Instituto de Investigação Agrária de Moçambique
JSR	Joint Sector Review
kg	kilogram
M&E	Monitoring and Evaluation
MAFAP	Monitoring African Food and Agricultural Policies
MT	Metric Tons
MZM	Mozambican Metical
NAIP	National Agricultural Investment Plan
NEPAD	New Partnership for Africa's Development
NGO	Nongovernmental Organization
NPCA	NEPAD Planning and Coordinating Agency
ORAM	Organização Rural de Ajuda Mútua (Rural Organization for Mutual Support)
PAEI	Política Agrária e Estratégia de Implementação (Agricultural Policy and Implementation Strategy)

PARPA	Plano de Acção para Redução da Pobreza Absoluta (Action Plan for the Reduction of Absolute Poverty)
PEDSA	Plano Estratégico de Desenvolvimento do Sector Agrário (Strategic Plan for Agricultural Sector Development)
PNISA	Programa Nacional de Investimentodo Sector Agrário (National Agricultural Investment Plan)
PQG	Plano Quinquenal do Governo (Five-Year Program of Government)
ReSAKKS–SA	Regional Strategic Analysis Knowledge Support System for Southern Africa
TIA	Trabalho de Inquérito Agrícola (Rural Household Income Surveys)
UEM	Universidade Eduardo Mondlane (Eduardo Mondlane University)
UNAC	UniãoNacional dos Camponeses(National Farmers' Union)

EXECUTIVE SUMMARY

INTRODUCTION

i. The National Agricultural Investment Plan (NAIP), referred to in Mozambique as *Plano de Investimento no Sector Agrário* (PNISA, 2013 - 2017), is a national program which aims to operationalize *Plano Estratégico para o Desenvolvimento do Sector Agrário* (PEDSA: 2010 – 2020); also, PNISA is inspired by and aligned with three framework documents/programs: Mozambique's Five-Year Government Plan, referred to as *Plano Quinquenal do Governo* (PQG) – starting in 2010-2014, and now 2015-2019); PEDSA; and the Comprehensive Africa Agriculture Development Program (CAADP).

ii. Emerging NAIP Cross-Country Lessons. In support of a strategic approach to the assessment of PNISA, the team synthesized 7 African cross-country NAIP-derived lessons which are considered to be more pertinent for enhancing Mozambique's PNISA. These lessons also provide useful guidelines to enable Mozambique to better achieve the MALABO commitments (7 core areas) applied to the Mozambican context. These 7 continental-wide lessons highlight the importance of:

Lesson 1: Strong operational alignment of the NAIP with relevant policy and strategy frameworks;

Lesson 2: Robust institutional and multi-stakeholder coordination arrangements and mechanisms, to be functional within and outside the agricultural sector, and at various levels (central and local governments)

Lesson 3: Effective formulation and utilization of the medium and annual planning and implementation of the budgetary cycle, together with relevant supporting processes and tools;

Lesson 4: Ensuring financing mechanisms are appropriately sequenced and utilized, and to be driven by the strategic result areas, supporting programs and strategically prioritized interventions;

Lesson 5: Active engagement of an inclusive and strengthened private sector throughout the planning and implementation cycle;

Lesson 6: Integrated decentralization arrangements/mechanisms, utilizing the annual work plan and budgetary cycle of participating local government entities;

Lesson 7: Improved and operational monitoring and evaluation (M&E) system, to be proactively utilized as a key tool for enhancing evidenced-based decision-making, ensuring mutual accountability, making timely enhancements and generating strategic results.

iii. Objectives, Scope and Methodological Aspects. The overall objective is to conduct an assessment of PNISA's performance in terms of identifying key achievements, gaps, lessons learned, and strategic recommendations to achieve more fully and effectively its objectives and key targets. The evaluation exercise focuses on addressing two main aspects:

- Performance: main achievements/results and key gaps and challenges to meet its objectives and strategic targets, including relevant strategic targets outlined under PEDSA, PNISA and the MALABO Declaration; and
- Recommendations and Road-Map: recommendations will be framed in terms of a road-map for supporting the achievement and mutual accountability of PNISA's strategic objectives and more realistic and updated targets.

iv. The scope of the assessment. The PNISA assessment covered PNISA's 5 results areas (equivalent to components in the PNISA document), 3 cross-cutting themes and 21 supporting programs. The time period for the assessment is from 2013 to 2016, and also covering 2017 subject to availability of data.

v. Methodological Approach. The assessment is guided by the following methodological features:

- Utilization of best practice evaluation criteria, namely: lessons learned, relevance, effectiveness, efficiency, results, and sustainability.;
- Mixed methods approach, involving both qualitative and quantitative aspects;
- Reconstructing PNISA's theory of change (ToC) and a results framework (RF) to provide a robust "lens" and tools to balance a backward and forwarding looking approach to assessing and deriving a constructive roadmap for enhancing PNISA's performance and strategic results;
- Utilization of available data/information, and
- Consultations with multiple stakeholders at the national and provincial levels. These consultations brought diverse stakeholders from: Maputo City and four selected provinces (Niassa,Zambézia, Tete and Gaza), from which included interviews with a total of about 80 diverse stakeholders involved in the agricultural sector; and
- Application of relevant lessons from other NAIPs in Africa and from the PNISA experience.

STRATEGIC CONCLUSIONS

vi. Based on the above approach, this assessment has highlighted 7 strategic conclusions. These conclusions focus on key design features and the performance of "core drivers" toward achieving PNISA's overall objectives and strategic targets, especially at the impact and outcome levels.

1) PNISA's Mixed Design Aspects: In general, PNISA was well designed, although strategic requirements and implementation experience also highlight key challenges which were not addressed adequately in the design stage, and also neglected during subsequent implementation. In summary:

PNISA's positive design aspects include:

- Addresses most of the relevant agricultural sector issues and thematic areas;
- Is aligned generally with PQG and CAADP framework and processes;
-
- Estimated required financial resources for each result area, program and subprogram;
- Promoted the active engagement of key stakeholders during the design stage (e.g., Government entities at both central and provincial levels, private sector, development partners, NGOs, academia) during the design phase.

PNISA's challenging aspects include neglect/inadequate:

- Operational strategy and plan for expanding the vital role of the private sector; also, PNISA did not include clear operational roles and targets involving private sector;
- Operational content on some key sub-programs, such as international trade under the market access result area;
- Establishment of indicators and their respective targets for some of the key programs (eg: Market access, institutional strengthening);
- Operationalized M&E system, supported by clear and adequate accountability systems;
- Strategy and mechanisms for mobilizing the required financial resources to close the large financing gap (85%, which has persisted until this date);
- Formulation of different funding and implementation scenarios (high, medium and low), taking into account the possible and actual available funds.

2) Emerging Sound Policy and Institutional Environment and PNISA's Limited Role: During the PNISA implementation period, there were several key agricultural policies and strategies which were formulated, approved and at various stages of implementation, although some of them need to be further deepened and operationalized to generate the required and sustained benefits. Thus far, PNISA has played a relatively minor role in helping to further operationalize these key policy and institutional initiatives, due to three main types of constraints --- funding, technical capacities, and coordination.

3) Variable Achievement of PNISA's Impact, Outcome and Output Results. After nearly five years of implementation, tangible results at impact and outcome levels which can be attributed clearly to PNISA, are still

in their early stages. The assessment report highlights the main achievements and key gaps according to PDO level, the 5 result areas and the 3 cross-cutting themes in terms of "core" indicators, or those which comprise the drivers in achieving PNISA's objectives. The following section highlights some examples of these variable results.

(a) There is a significant shortfall in achieving the ambitious agricultural growth rate target (actual rate of about 3.5% per year vs. the target of 7 % per year);

(b) Other key targets show mixed performance: nutritional, poverty reduction, private sector role and investment levels, and crop yields of key food crops (cereals and beans) have lagged behind; yields for some crops (e.g., tomato, Irish potato, sugarcane) are very promising, but at early stages of increases; expanded rural roads, although not adequately prioritized according to agricultural potential; establishment of service centers, although with unclear results and with a need to ensure sustainability.

(c) A shortfall in the target allocation of agricultural public expenditures as a share of total public expenditures -- 6 to 7% approved allocations vs. 10% target allocations;

(d) Some other tangible key results, albeit mixed, are in the incipient stages, including:

- Improved agricultural varieties, although exhibiting relatively low farmer adoption rates (e.g, 10% vs. an ambitious target of 100%);
- Expanded access to land ownership and security by smallholders, while also needing expanded results;
- Fisheries expansion and diversification, while also in initial stages; there is introduction and promotion of aquaculture as a viable farm level enterprise, also at an incipient stage; expanded use of motorized boats for off-shore fishing;
- Expanded irrigation works, although there was a significant shortfall in meeting the targets (e.g., 20,000 ha vs. a target of 50,000 ha), and need for greater attention on operational and maintenance (O&M); and
- Limited value chain development initiatives.

4) PNISA's Major Financing Shortfalls: The most notable finding of the assessment is that the required financing was not mobilized and released to implement the envisioned PNISA programs. During the period 2013-2016, there are 4 financing indicators which reveal different dimensions of the financing challenges: (a) the actual expenditures were only 15% of the required funding; (b) the approved budget was only 26% of the required funding; and (c) the actual expenditures were only 57% of the approved budget; (d) disbursed budget (releases from the Ministry of Economy and Finance) also was only 57% of the approved budget (the %s are coincidental). Moreover, during the implementation period, MASA did not adjust downwards the envisioned and ambitious targets, at the Program Development Objectives (PDO) level, and for each of the 21 programs. Therefore, it is not surprising that there are significant shortfalls in meeting many of the PNISA targets, while also recognizing that some of the targets are on track (e.g., yields for some crops; generation of improved crop varieties);

5) Limited and incipient role of the VITAL inclusive private sector and Promising Potential in Value Chain Development (VCD) initiatives: There is increasing recognition of the VITAL role of promoting an inclusive and broad-based private sector role to contribute to CAADP's broader vision of agricultural transformation. The role of the private sector in Mozambique is at an incipient stage, and needs to be promoted through a combination of policy, institutional and investment interventions. There are some emerging promising experiences involving private sector-driven value chain development (VCD) for commodities for which Mozambique can become competitive (e.g, MITADER has launched a major program of VCD, and prepared numerous business plans for financing). MASA is generating some emerging success stories of VCDs (e.g., sugarcane; tobacco; cotton; soybean; poultry); however, these initiatives need to be scaled up, especially to ensure inclusion of smallholders.

6) PNISA's Limited Effective Coordination. While there is consensus on the urgency of significantly strengthening coordination (within MASA and especially with other Ministries/stakeholders, such as MITADER, and through the CCSA), thus far there is little evidence of tangible progress. Hence, there is an urgent need for strengthening appropriate coordination mechanisms/processes; for example, there is a need to build on existing coordination mechanisms, such as fully activating and supporting the CCSA).

7) Core Drivers for Agricultural Transformation are at Early Stage of Activation: The theory of change developed for the PNISA assessment provides a roadmap for helping to prioritize the main types and mix of prioritized interventions, involving policies, institutional reforms and investments, especially by an expanded and strengthened private sector. Available evidence from PNISA implementation seems to validate the soundness of the proposed roadmap. However, this assessment shows that there are some strategic programs which comprise key drivers and which need further strengthening and adequate funding to ensure they generate the potential results which will contribute toward agricultural transformation.

CORE RECOMMENDATIONS AND SUPPORTING ROADMAP

vii. The identified gaps/shortcomings ---technical, capacity, financial, and coordination aspects ---in achieving PNISA's strategic objectives and targets highlights the need for Government, led by MASA, in close collaboration with key stakeholders, to:

- enhance the strategic content and/or targets of the 21 programs;
- intensify implementation, with tangible results;
- improve significantly the effectiveness of coordination, at various levels; and
- strengthen and operationalize a sector-wide M&E system, which will support more efficient, effective and timely decision-making.

viii. Accordingly, the report identifies 32 "core" recommendations which emerge from PNISA's implementation experience and assessment, and which are assessed in terms of the identified theory of change, results framework, and key lessons from other NAIPs and from PNISA. The effective implementation of these core recommendations (and their supporting actions) during the extended period of PNISA (through 2019), supported by the proposed operational roadmap (see Annex 2), would generate two benefits: significantly enhanced results of PNISA; and pave the way for a sound design and smooth launching and effective implementation of a proposed PNISA Phase 2 (2020 - 2024). These core recommendations are s follows (with further detains on the specific actions outlined in Chapter 4 and Annex 6):

A) By Overall and Program Development Level (6 core recommendations)

O.1: Extend PNISA through 2019;
O.2: Update Agricultural Growth Rate;
O.3: Update realistic nutritional targets (for stunting and wasting of children);
O.4: Prepare/implement Private Sector Strategy and Road-map;
O.5: Enhance PNISA Structure; and
O.6: Disseminate and Utilize Relevant Sector Analyses/Evidence.

B) By Result Areas (RAs) and Cross-Cutting Themes (RA) (26 core recommendations)

RA1: Increased production and productivity (7 core recommendations)
1.1: Enhance Crop Programs
1.2: Increase Fish Inputs:
1.3: Improve Livestock infrastructure, inputs and service markets
1.4: Enhance Agricultural Research Actions
1.5: Strengthen Agricultural Extension Program
1.6: Improve Irrigation Program coverage and impacts
1.7 Strengthen agricultural mechanization

RA 2: Expanded Access to Markets (3 core recommendations)
2.1: Strengthen Post-harvest management
2.2: Expand Rural Roads Program
2.3: Strengthen data systems to support enhanced evidenced-based policy formulation.

RA 3: Enhanced Food and Nutrition Security(1 core recommendation)
3.1: Enhance Multi-Sectoral nutritional coordination

RA 4: Improved Natural Resources Management (2 core recommendations)
4.1: Improve land security
4.2: Promote Sustainable use of natural resources

RA 5: Strengthened Institutional Development (4 core recommendations)
5.1: Institutional Reform Program
- Enhance Coordination Arrangements/Mechanisms:
- Enhanced & Sustainable Incentives

5.2: Institutional Strengthening Program
- Strengthen key staff for enhanced evidenced-based capacities and decisions:
- Strengthen CCSA role and effectiveness

6.0: Crosscutting Themes (9 core recommendations)
6.1 Decentralization: (2 core actions)
- Socialize PNISA at Provincial/District levels, and encourage increased level and quality of expenditures for prioritized interventions
- Provide technical support to Provinces in their budgetary cycle

6.2: Monitoring and Evaluation System (1 core recommendation)
- Enhance operational Agricultural Sector M&E System

6.3 Financing and Budgetary Aspects (6 core recommendations)
- Enhance MASA's Budget Structure
- Enhance quality of agriculture public expenditures (based on enhanced prioritization criteria and improved efficiencies in execution)
- Improve DP expenditure funding support
- Close PNISA's Funding Gap, by increasing the level of expenditures
- Update Costs, Financing Plan and Targets of PNISA
- Provide technical & financial support to provinces

ix. Finally, this assessment outlines the key elements of a roadmap (see Table 13) for the formulation of a new PEDSA Phase 2 (say, 2020 – 2030) and a PNISA Phase 2(2020 – 2024). It is proposed that these two inter-related tasks be carried out in parallel to carrying out the enhanced implementation/completion of the on-going PNISA. This approach would help ensure a seamless transition to sound and timely launching of PNISA Phase 2, building on the positive results and momentum of PNISA Phase 1 and guided by PEDSA II.

1 INTRODUCTION AND BACKGROUND

1.1 Overview

The National Agricultural Investment Plan (NAIP), referred to in Mozambique as *Plano de Investimento no Sector Agrário* (PNISA, 2013 - 2017), is a national program which aims to operationalize *Plano Estratégico para o Desenvolvimento do Sector Agrário* (PEDSA: 2010 – 2020); also, PNISA is inspired by and aligned with three framework documents/programs: Mozambique's Five-Year Government Plan, referred to as *Plano Quinquenal do Governo* (PQG) – starting in 2010-2014, and now 2015-2019); PEDSA; and the Comprehensive Africa Agriculture Development Program (CAADP). CAADP was launched in Maputo, Mozambique in July 2003. Under CAADP, the African heads of state pledged to allocate at least 10% of the government budget to agricultural sector accompanied with 6% annual agricultural production growth in order to boost food security and rural development in Africa.

In order to achieve CAADP targets, the Government of Mozambique through the Ministry of Agriculture and Food Security (MASA) started a consultation process which involved Mozambican agricultural stakeholders including, the private sector, civil society, development partners, and research and training institutions for the development of the Strategic Plan for Agricultural Sector Development (referred to as *PEDSA*). This consultation process, supported by various background analytical studies, resulted in the development of the PEDSA, which was officially approved in May 2011.

The PEDSA was developed to cover a period of 10 years (2011-2020), and it is comprised of 4 pillars, namely:(i) agricultural production, productivity and competitiveness; (ii) infrastructure and services for an increase in access to agricultural markets and investment in agricultural sector; (iii) sustainable and integral use of natural resources such as land, water, forestry and wildlife; and (iv) agricultural institutions improvement. These pillars are in line with the CAADP pillars.

Seven months after the approval of PEDSA, on December 9th 2011, the CAADP Compact for Mozambique was signed by government and non-government agricultural sector stakeholders. The Compact explicitly states that CAADP will be implemented in Mozambique through the PEDSA and defines the priority focus areas of intervention for agricultural development in the country.

Following the signing of the CAADP country Compact, the National CAADP Team was tasked to lead the development of PNISA. From the leadership of CAADP Team, PNISA was prepared following a participatory methodology through five distinct stages: (i) constitution of Technical Team (TT) responsible for the production of PNISA document in January 2012. (ii) Provision of technical assistance by FAO to guide Technical Team in the production of PNISA document, (iii) national consultation for the development of the master document of PNISA (iv) formulation of proposals for sub-sector investment plans by identified working groups including key stakeholders, and (v) plenary sessions for presenting and discussing the proposal of PNISA document. After the five distinct stages, the Technical Team (TT) held a public consultation session attended by government institutions, private sector, international agencies and non-governmental and civil society organizations.

The contributions collected in public session were subsequently analyzed by TT before they were incorporated into the final document. Additionally, PNISA was submitted to independent Technical Peer Reviewers comprised of NEPAD experts and comments from the reviewers were analyzed and incorporated in the document. The final PNISA document was approved by the Council of Ministers in December 2012.

Following the approval of PNISA, and in line with the CAADP compact, a high-level business meeting chaired by the President of Republic of Mozambique, Armando Emilio Guebuza, was held in April 2013. The event also served as PNISA's official launch and the government and donors agreed to mobilize resources for the achievement of PNISA's objectives. Specially, PNISA specifies 21 programs grouped under five components (or result areas [1]), namely (i) agricultural production and productivity; (ii) access to markets; (iii) food and

[1] The original PEDSA document referred to "pillars", while the PNISA document referred to "components". This evaluation refers to "result areas" to emphasize that PNISA should be results oriented.

nutritional security; (iv) natural resources; and (v) institutional reform and strengthening. The required financial resources under PNISA during the period of 2013 to 2017 were estimated for each program and totalizing 112 billion MZN.

1.2 Lessons Learned from Other Sub Sahara African Countries

This section highlights the most relevant lessons learned from the design and implementation of other country-level NAIPs. These lessons and perspectives were taken into account in order to help focus the approach and analyses for this PNISA assessment exercise.

The Coordination Unit of the New Planning and Coordination Agency (NPCA) of the New Partnership for Africa's Development (NEPAD) arranged to carry out a series of assessments of country-level National Agricultural Investment Plans (NAIPs) in several African countries.[2] One of the main sections of these assessments involved deriving lessons learned, which are being used to underpin updated action plans/roadmaps for enhancing strategic results, for both on-going and follow-up phases of each country-level NAIP. The section below provides a summary of the main lessons derived for each of the countries covered: Burundi; Malawi; Tanzania; and Togo.

While the lessons learned are specific to each of the countries covered, many of these lessons are applicable, with some contextualization, to most African countries which are implementing an on going and/or formulating a follow-up phase of the NAIP. Given the design and implementation experience of Mozambique's PNISA, many of the lessons provide relevant insights/guidelines for enhancing the implementation and generation of tangible and sustainable results of the on-going PNISA.

The following section synthesizes the following 7 cross-country NAIP-related lessons which are considered to be more pertinent for Mozambique's PNISA; these lessons need to be applied to PNISA to enable enabling Mozambique to better achieve the Malabo commitments (7 core areas).

Lesson 1: Strong Operational Alignment with Relevant Policy and Strategy Frameworks: The sustainable success of NAIPs hinges on the Government's strengthened commitment to a sound and coherent political, economic and financial "environment", to be supported by a comprehensive, coherent and updated agricultural sector strategic plan and (with an appropriate definition of the "sector" [3]). It should be supported by prioritized agricultural public investments, together with complementary sound and updated policies and investments in other strategic and growth-inducing public sector investments (e.g., infrastructure, such as roads, electrification, storage) and broad-based private sector investments. Accordingly, it is vital to ensure strong and continuous alignment of the agricultural sector strategy and with the national strategic plan and the 7 core areas of the Malabo Declaration, and to use periodic assessments as an opportunity to strengthen NAIPs' strategic and operational alignment;

Lesson 2: Robust Coordination Arrangements and Mechanisms: One of the key lessons from the assessments of NAIPs is that achieving key strategic objectives for the agricultural sector hinges on active engagement of stakeholders/entities which are outside the direct control of the Ministry of Agriculture (or equivalent). Accordingly, it is vital to ensure Ministries of Agriculture establishes and strengthens appropriate and operational coordination arrangements and mechanisms at various levels, especially involving "core" central ministries (i.e., Finance/Planning, Industry and Trade), Provinces/Districts (e.g., Provincial and District Development Officers, others), and private sector (e.g., relevant chamber(s) of commerce). There are good practices in numerous African countries in utilizing and strengthening agricultural sector working group (ASWG), supported by sub-working groups organized according to strategic themes which are drivers of agricultural growth (e.g., key commodities/value chains; private sector; agricultural technology; inputs;

[2] Assessment of NAIP and Development of Guidelines for Country Self-Assessment Processes in Burundi, Malawi, Tanzania and Togo, prepared by NEPAD (November, 2015). Further details are provided in the country-specific assessments (also, dated 2015). Based on available information, most (or all) of these lessons continue to be relevant.

[3] For a useful and generally agreed guideline for the agricultural sector, see: AU Guidance Note: On Tracking and Measuring the Levels and Quality of Government Expenditure for Agriculture (CAADP/NEPAD, 2015).

financing). To help ensure broad-based ownership, it will be important to distribute the leadership responsibilities among diverse stakeholders (e.g., and to co-chair arrangements).

Lesson 3: Effective Utilization of the Medium and Annual Planning/Budgetary Cycle and Supporting Tools: To complement the above two lessons, it is imperative that the Ministry of Agriculture and the Provinces/Districts strengthen and utilize effectively the annual and medium term planning and budgetary cycle and processes to ensure sound and coordinated level and prioritized composition of agricultural public expenditures (based on explicit and sound prioritization criteria) and from other key supporting sectors (especially road infrastructure). Key tools which need to be enhanced and effectively utilized for the planning and prioritization of key interventions is a sound Results Framework (RF) for PNISA, whereby each "result area" and supporting strategic outcome and output indicators would provide the same structure and indicators for: (a) a results-oriented budget proposal; and (b) an improved monitoring and evaluation system (see below also). Accordingly, these tools would to be utilized to sharpen the content and prioritization of the annual budgetary planning processes and proposals, coupled with the active engagement of key stakeholders during the entire cycle, which would be enabled by the strengthened coordination arrangements (reference to lesson 2). Given the context of decentralization, it is important that the Ministry of Agriculture at the central level provide the sectoral RF as a guide for each of the Provinces and Districts to derive their own version of the RF to guide their budgetary planning cycle. In that manner, there will be stronger alignment and coherence, at various levels;

Lesson 4: Ensure Financing Mechanisms Are Appropriately Sequenced and Utilized. In several countries, including Mozambique, there was excessive importance placed in establishing a financing mechanism (e.g., "basket funding") which became the dominant focus of discussions, rather than ensuring the Ministry of Agriculture focused first and on a continuous basis on a sound agricultural strategy and prioritized agricultural sector expenditure program, to be supported by appropriate financing mechanisms (e.g., basket fund). In practice, this misplaced focus by the Ministry of Agriculture and DPs have resulted in inadvertent perverse effects. Accordingly, Ministry of Agriculture need to ensure utmost attention to ensuring and reaching consensus with key stakeholders on an updated expenditure plan, and to utilizing financing mechanisms as a support mechanism to achieve the expenditure objectives (in line with the enhanced RF and M&E system).

Lesson 5: Active Engagement of Inclusive Private Sector throughout the Cycle: Country experiences provide strong evidence that the primary driver of inclusive agricultural sector growth, including the achievement of an ambitious agricultural sector growth target of at least 6% growth per annum (or even above 3% per annum) will depend primarily on expanding the active role of the private sector in all phases of the expenditure cycle. In recent years, many countries (including Mozambique) have been increased engagement by the private sector in the NAIPs, but mostly in the planning phase, and there has been negligible engagement in the implementation and monitoring and evaluation phases. The strengthened coordination mechanisms (e.g., ASWG and sub-working groups) also need to be operational during all phases of the cycle to ensure active and sustained engagement of the private sector, also at various levels (central and provincial/district levels). In this manner, there is a need to be close attention to identifying key bottlenecks faced by the private sector (say, taking a value-chain approach, which means active listening of the private sector stakeholders to ensure public expenditure are complementary and help catalyze increase and inclusive private sector investments);

Lesson 6: Integrated Decentralization Arrangements/Mechanisms: Similar to Mozambique, most African countries are actively promoting political/administrative/expenditure decentralization, and most countries, are facing diverse challenges.. It is important to ensure that Ministry of Agriculture give explicit attention to ensuring adequate "socialization" of the NAIP at the Provincial/District levels (say, via the annual budgetary cycle and M&E system), and work out and integrate an appropriate decentralization strategy/roadmap for the further operationalization of the NAIP at these decentralized levels – again, using the budgetary cycle as the core driver of the roadmap. There has been a tendency to embark on decentralization in one phase, rather than follow a phased approach to ensure effective decentralization. NAIPs may wish to consider a phase approach to a more effective operational and intensive approach to decentralization with respect to the agricultural sector, while recognizing that current decentralization covers all 11 Provinces;

Lesson 7: Improved and Operational M&E System: A common weakness among all NAIPs, including the PNISA, is a deficient M&E system. Accordingly, it will be vital for the Ministry of Agriculture to intensify its efforts to strengthen significantly the M&E system for its NAIP (which also supports the requirements of its

strategic frameworks), and to ensure a strong alignment of the M&E system with the enhanced RF,, with a focus on the most strategic indicators at the impact, outcome and output levels. Some of the specific elements of good practice M&E system include the following features: (a) strong alignment with a sound RF, and the use of "SMART" indicators, at the 3 levels; (b) a roadmap to improve the generation, reliability and timeliness of data sources and systems of the most relevant indicators at the 3 levels (impact, outcome and outputs), including the use of existing surveys, special survey data, taking into account their costs; the indicators should include appropriate indicators involving the private sector investments and role; (c) clear roles and responsibilities in the management and implementation of the M&E system, at both central and provincial levels (which in turn is linked to the implementation of the decentralization strategies); (d) identifying strategic programs/subprograms which comprise core drivers and ensuring periodic in-depth and independent evaluation studies (e.g., inputs, especially where there are subsidies; agricultural technology, and the technology/extension linkages; periodic assessment of the agricultural strategy); (e) ensuring the M&E system is effectively utilized, with periodic feedback from key decision-makers, to also provide basis for improvements on a periodic basis; and (f) ensuring appropriate learning-related activities with a strong capacity building orientation, at central and decentralized levels.

2 OBJECTIVES, SCOPE AND METHODOLOGICAL APPROACH

2.1 Objectives

The overall objective is to conduct a mid-term evaluation (MTE) of PNISA's performance in terms of identifying key achievements, gaps, lessons learned, and strategic recommendations to achieve more fully and effectively its objectives and key targets. The evaluation exercise focuses on addressing two main aspects:

- Performance: main achievements/results and key gaps and challenges to meet its objectives and strategic targets, including relevant key targets outlined under the MALABO Declaration; and
- Recommendations and Road Map: Recommendations will be framed in terms of a road map for supporting the achievement of PNISA's strategic objectives and more realistic and updated targets.

2.2 Scope

The assessment covered the following aspects:

- Overall objectives/targets as outlined in the PNISA program document;
- Content: 5 result areas and 21 programs, with a focus on assessing "key drivers" of inclusive agricultural growth and "transformation";
- Time-period: 2013 to 2016, with a forward-looking approach to the proposed remaining period of PNISA up to 2020 in order to coincide with the timeframe of the on-going Plan Quinquenal de Governo (PQG, 2015-2020) and PEDSA (2010-2020);
- Based on utilizing available information and analyses, given limited timeframe and resources to carry out the assessment, and utilizing mix-methods approach;
- National and Provincial level analyses, including an assessment of the performance of PNISA in 4 "Provinces. The agreed criteria for the selection of the Provinces are those which exhibit the following features:
    - diversity of corridors/regions in terms of agro-ecological potential, with geographical spread and diversity (e.g., north, central and south);
    - diversity of performance in PNISA implementation;
    - commitment of key counterparts to collaborate in exercise
- Accordingly, the evaluation team agreed with MASA/DPCI authorities that the following Provinces would be included for an in-depth assessment and to use the findings as inputs for the overall PNISA review. This assessment was based on readily available information, together with a questionnaire administered to about 80diverse stakeholders in the following provinces: including Maputo city for the national perspective and four province (Niassa in Northern region, Zambezia and Tete in Central region and Gaza in Southern region).

2.3 Methodological Approach

The assessment was guided by the following methodological features:

2.3.1 Evaluation criteria.

International good practices for carrying out evaluations of programs/projects recommends assessing 6 key dimensions/criteria, as follows:

(i) Relevance: to Government's main policies, strategies and policies, and to addressing key sector constraints;
(ii) Efficiency: the extent to which available resources have been used efficiently to achieve the objectives/targets;
(iii) Effectiveness: the extent to which the main objectives/targets have been achieved;
(iv) Results: the extent to which key impacts, outcomes and outputs have been generated as a result of PNISA's interventions, while recognizing the challenges of "attribution";
(v) Sustainability: the extent to which the generated results will be sustained over time;
(vi) Major lessons: the specific lessons which have been generated as a result of implementing PNISA, and which can be useful for enhancing PNISA's on-going performance and also other sector-level projects.

2.3.2 Methods, Theory of Change and Results Framework

The mixed methods approach utilized involved applying a mix of quantitative and qualitative methods. One of the key tools utilized involved reconstructing and using a theory of change (ToC)[4] and a Results Framework (RF) to assess PNISA's performance and to guide priority recommendations. This ToC is underpinned by a results chain to help focus the assessment exercise on the more strategic elements and indicators/targets which is envisioned to "drive" agricultural transformation in Mozambique. This RF is comprised of 4 overall impact level indicators, 5 strategic result areas (or components), and supported by "strategic" indicators, involving a mix of outcomes and outputs (see Annex 1). There are 3 sources of the indicators shown in the RF: from the PNISA document; from the MALABO Declaration (used for the biennial report), and from the team's experience/ judgment. [5]

Figure 1 illustrates the ToC which was contextualized for PNISA. This ToC aims to help focus PNISA's retrospective assessment and its forward-looking recommendations. The ToC also serves as a "bridge" between a comprehensive diagnosis of Mozambique's agricultural sector and the RF.[6] Accordingly, the RF analyses focuses on strategically selected impact, outcome and output indicators, including "core indicators"/CI (about 30). It is suggested that MASA accord higher priority to ensuring its improved M&E system focuses on promoting and tracking these CIs. Also, these CIs will help focus priority actions and results, given limited financial and human capacity resources at central (MASA, others) and provincial/district levels.

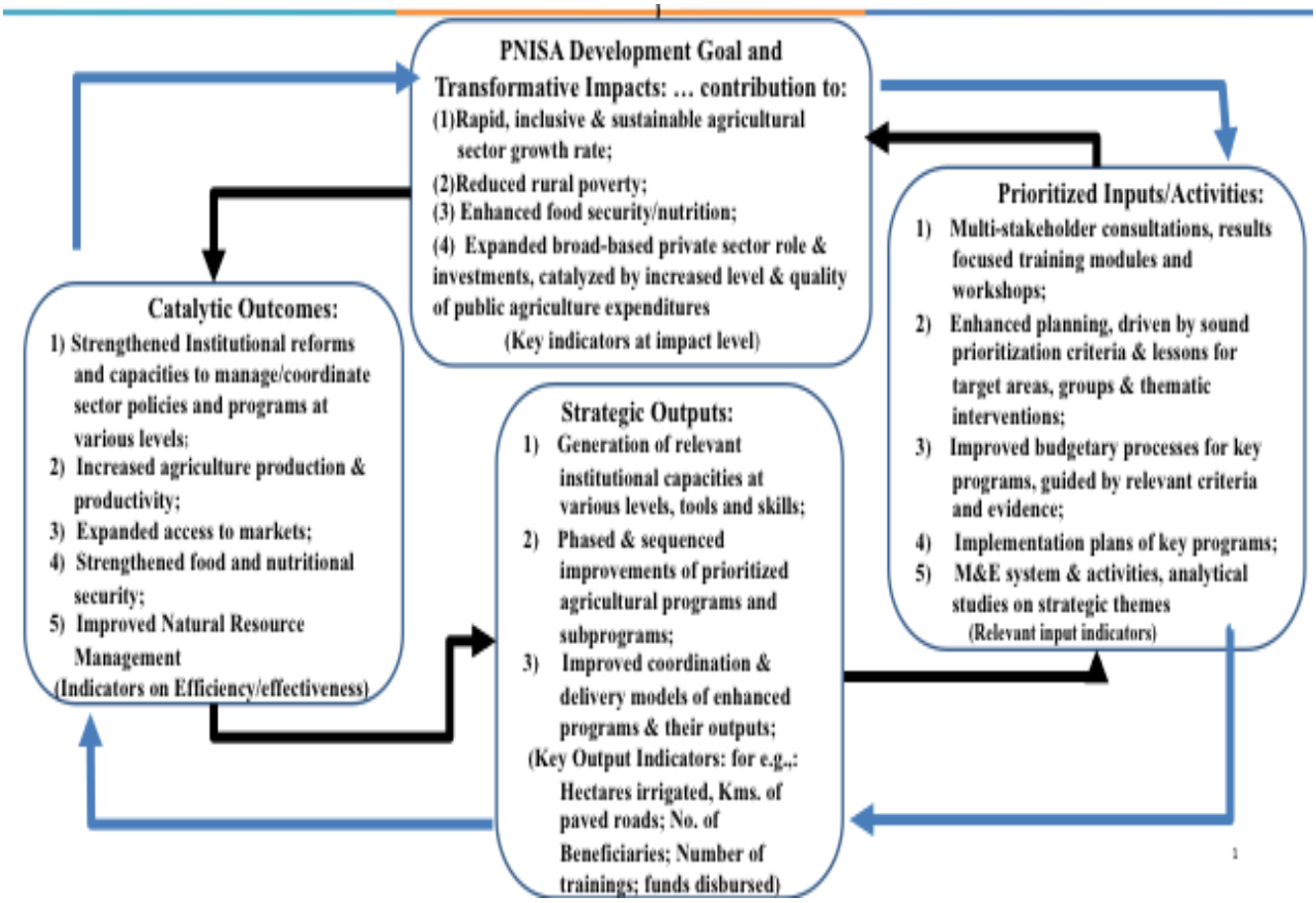
[4] Good international practice has highlighted the importance of programs/projects defining explicitly a "theory of change", which will provide a conceptual framework/roadmap for identifying the main strategic interventions which will generate the desired results (or changes) at the impact, outcome and outputs levels, and their interlinkages (or results chain). Accordingly, a sound ToC provides the basis for constructing a sound results framework.

[5]The MALABO Declaration biennial report for Mozambique (draft July, 2016) presents about 43 indicators for which each participating CAADP country is supposed to track and report on. Some of the more strategic MALABO Declaration indicators meet the selection criteria for this assessment, and therefore, were included in the RF for PNISA.

[6] For example, there are 3 recent agricultural sector studies which provide a sound diagnosis of the main challenges facing Mozambique's agricultural sector, and also include identification of some of the key drivers identified in the ToC and the supporting RF: (i) Promoting Inclusive Agriculture Growth in Mozambique: Sector Performance and Policy Priorities (World Bank, April 2017); (ii) Institutions and Investments in Agriculture: Tracking Implementation of the NAIP for the Agriculture Sector in Mozambique (World Bank, April, 2017); (iii) Joint Sector Review: Strengthening Mutual Accountability and Preparing for the Malabo Biennial Review through Joint Sector Review (prepared for MASA, June, 2017).

For each PNISA program and each indicator included in the RF, the evaluation team reconstructed and compared the target and the estimated actual values, based on available information. The target values were taken mainly from the PNISA document and Economic and Social Plan Balance Report referred to *Relatório do Balanço do Plano Económico e Social* (PES). The actual values were collected from different relevant analytical/evidenced-based studies and reports, and/or computed from data from different databases such as IAI (*Inquérito Agrícola Integrado*) and SIMA (*Sistema de Mercados Agrícolas*). Using the reconstructed RF, the assessment team analyzed the performance/results of PNISA by comparing the proposed results derived from the PNISA planning document (2013) with the actual results (for each year: 2013-2016), and identified the main reason(s) for the gaps/discrepancies. This assessment was also supported by inputs from relevant and reliable sources of information, including: analytical/evidenced-based studies and reports as well as feedback and views from diverse stakeholders, including those interviewed in the four Provinces cited above. The results from the Provincial visits/consultations and from the RF analyses were used as inputs for assessing each PNISA result area (5) and its respective programs (totaling 21), as follows: (i) proposed objectives/key targets; (ii) main achievements; (iii) emerging gaps and challenges; and (iv) priority recommendations. Different rates (good represented by green color, satisfactory by yellow color, and not satisfactory by red color) were assigned for the main indicators using the Ministry of Economy and Finance rating system as follows: (a) Green color (good): Realization of 75%-100%, (b) Yellow color (satisfactory): Realization of 50%-74%, and Red color (not satisfactory): Realization of 0%-49%.

Figure 1: Results Framework for Assessment of PNISA: Theory of Change and Supporting Results Chain



2.3.3 Stakeholder Consultations

The feedback and views from different stakeholders were guided by 7 questions which aim to capture the six key assessment dimensions -see above criteria (and see Annex 2). The questionnaires were administered in person by members of the PNISA assessment team. Each interview took about one hour, and was applied to approximately 79 strategically selected multi-stakeholders/actors located in Maputo and the 4 selected Provinces. These stakeholders are familiar with and directly engaged in the agricultural sector, and many of them were involved directly in PNISA's design and/or implementation aspects. These strategic stakeholders represented the following groups: Government (national level and provincial levels); development partners (from AG-RED); academia; civil society; and private sector. Their responses reflect their comparative and partial knowledge of selected strategic objectives and programs/subprograms/activities of PNISA, and hence, this information has been integrated with other information compiled and analyzed during the assessment exercise. Descriptive statistics of the ratings provided by each stakeholder were computed for each question, and the associated rationale/evidence and interpretation of responses also were summarized. The summary responses for the stakeholders interviewed in Maputo and the overall findings for each of the 4 provinces are presented in Annex 3.

3 MAIN FINDINGS

The main results-focused findings are presented according to each of PNISA's 5 results areas (RAs) and their respective programs (totalizingng 21), together with key crosscutting themes (3). This assessment is structured according to the following common aspects: (i) objectives/targets; (ii) status/achievements; (iii) identified gaps and challenges; and (iv) priority recommendations.

3.1 Program Development Objectives

Program Development Objectives (PDOs) refer to the most relevant crosscutting outcome and impact indicators. This section provides an overview of the Program Development Objectives (PDOs), their targets, current achievements and closes with strategic recommendations.

(i) Program Development Objectives (PDO): The PNISA aims to contribute to the main PEDSA objective of enhanced food security and nutrition, increased income and profitability of agricultural producers, and the rapid, competitive and sustainable increases in market-oriented agricultural production. PNISA set out to support the following specific objectives:

(a) accelerate the production of staple and nutritious food products;
(b) increase income for producers;
(c) ensure expanded access and secure tenure of the necessary natural resources;
(d) provide enhanced specialized services geared towards the development of the value chain; and
(e) boost the development of the areas of greatest agricultural and commercial potential (in line with comparative advantage)

(ii) Key Targets, Status/Achievements and Gaps/Challenges:

The key impact indicators and their targets and status by the end of 2017 are summarized below.

(a) Agricultural Growth Rate

Target: Sustain an average growth rate of 7% per year for the next 10 years (PNISA). The MALABO agricultural growth rate target is at least 6% from 2015 to 2025.

Status/Trends/Gaps/Reasons: Over the period 2013-2016, real agriculture gross domestic product (GDP) experienced a steady upward trend, increasing from 95.3 billion MZN in 2013 to 104.6 billion MZN in 2016 with an annual average of 100.2 billion MZN (see Figure 2 below).[7] During the same period, real agricultural GDP grew on average at 3.1% per year. This growth was driven mainly by livestock sector which grew at 5.6% per year, compared with annual growth rates of 2.9% for the crops sector and 3.6% for the fishery sector. Despite the steady upward trend in real agriculture GDP, real per capita agriculture GDP remained basically stagnant at 12.5 thousand MZN over the period 2013-2016. There were significant and consistent shortfalls in achieving the ambitious agricultural growth rate of 7% per year. Major reasons include significant underfunding of PNISA from both public and development partners sources coupled with PNISA's limited scope in mobilizing funds, promoting and achieving an expanded private sector role in the agriculture sector.

[7] Agriculture consists of crops, silviculture, livestock, and fishery.

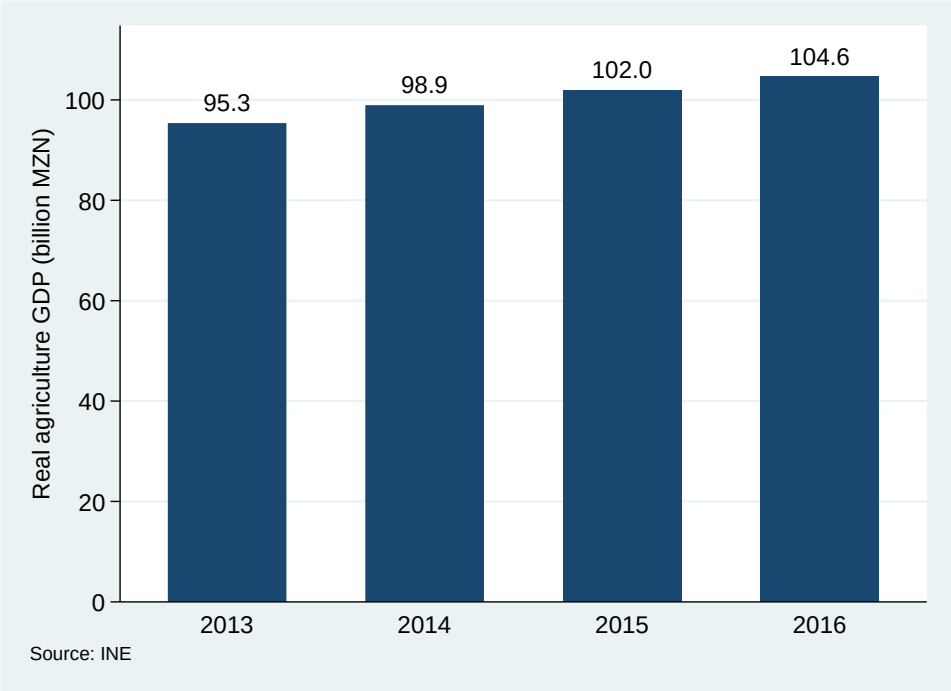


Figure 2 Trend in agriculture GDP

(iii) Priority Recommendations (CR refers to "core" recommendation[8])

a) (CR) MASA to update targeted agricultural growth rates for 2018, 2019, and 2020, based on trends over past 5 years, realistic assumptions, and available studies. This implies a downward revision of the ambitious target of 7% per year;
b) MASA to build on/utilize the available agricultural sector model for Mozambique as a tool for more rigorous and realistic sector planning, and the support for the formulation of PNISA II. Re-assess and derive sources of agricultural growth rate with possible scenarios (low, medium, and high). The modeling work will provide the basis for further updating of the agricultural growth rate targets. MASA would need to seek/secure appropriate technical assistance (TA), and include a "twinning" arrangement with a local university, to help ensure sustainability of the modeling work, and also provide a training vehicle for future MASA staff;
c) (CR) MASA to formulate and implement an action plan to mobilize adequate funding for PNISA, for FY18 and FY19, while recognizing the challenges of increasing funds for FY18);
d) (CR) MASA to sharpen and apply consistently its operational prioritization criteria to enhance budgetary planning and allocations. MASA's current prioritization criteria have emphasized the following 4 programs: (a) agricultural extension; (b) agricultural research; (c) irrigation; and (d) control of crop plagues and livestock diseases. While these are generally sound programs, it would be useful to sharpen and complement them with the following 3 criteria to help prioritize limited funding:

[8] "Core" recommendations (CR) are identified to help establish priorities among the recommendations, and which contribute to the key drivers of transformation. It is also important to address the other recommendations, but in a phased manner.

- Programs/interventions which comprise "core drivers of agricultural transformation", and are strongly aligned with and contribute to strategic targets of the PQG and PEDSA (e.g., agricultural growth, poverty reduction, catalyzing inclusive private sector role and investments, especially smallholder and small enterprise-led value chain development);
- Programs which benefit large numbers of beneficiaries, with special focus on smallholders;
- Programs which demonstrate attractive financial returns to smallholders and economic viability, especially with respect to lumpy investments (e.g., irrigation, rural roads, technology development and dissemination),

e) (CR) MASA to structure its budget according to PNISA's 5 components (result areas) and 21 programs, preferably starting with the finalization of the budget submission for FY 2018. It is recognized there is a limited window in the budgetary cycle for FY 2018 to make this adjustment; if not possible before the FY18 budget is finalized, then MASA should endeavor to make the structural adjustments during the mid-year budgetary review for FY18, and hopefully for the FY19 budgetary cycle.

(b) Poverty Level

Target: Reduce poverty level by at the least 50% from 2015 to 2025 (MALABO and not specified by PNISA);

Status/Trends/Gaps/Reasons: Figure 3 plots trends in poverty headcount incidence. This figure shows that poverty decreased from 54.7% in 2008/2009 to 49.2% in 2014/2015. This decline reflects a larger reduction in urban poverty with modest decrease in rural poverty (9% versus 4%). This modest decrease also reflects the relatively low agricultural sector growth rate trends as discussed earlier. Despite the observed reduction in poverty at national level from 2009 to 2015, notable differences across regions exist: Poverty increased by 13% in Northern Mozambique, while it decreased by 12% in Central Mozambique and by 21% in Southern Mozambique. Northern and Central Mozambique are the regions with higher agricultural potential compared to Southern Mozambique as discussed later. Observed trends suggest that promising sources of agricultural growth and rural poverty reduction include scaling up improved technologies and contract farming. However, PNISA limited funding (level and composition) has limited its potential role and contributions to helping poverty reduction. Some of the main PNISA poverty reduction interventions have included rural roads, and technology development and dissemination.

Priority Recommendations:

a) MASA to ensure that the proposed agricultural sector growth modeling work also include explicitly assessment of rural poverty reduction strategies and interventions. Ensure improvement to data collection systems and frequency on household incomes;
b) Given that MASA is collecting household income information (TIA and IAI) during some rounds, there is a need for MASA to improve data reliability, analyses, and utilization of these potentially useful data to better track rural household incomes and rural poverty trends and to help prioritize interventions;
c) (CR) Given various recent evidence-based studies for Mozambique's agricultural sector have not been widely disseminated and fully utilized (see references in footnote 5), MASA, in collaboration with and support by the AGRED, to develop and carry out an action plan for their wide dissemination, discussion and utilization to support policy and budgetary cycle. These follow-up actions would contribute to enhanced implementation of PNISA and its results, at a very low cost.

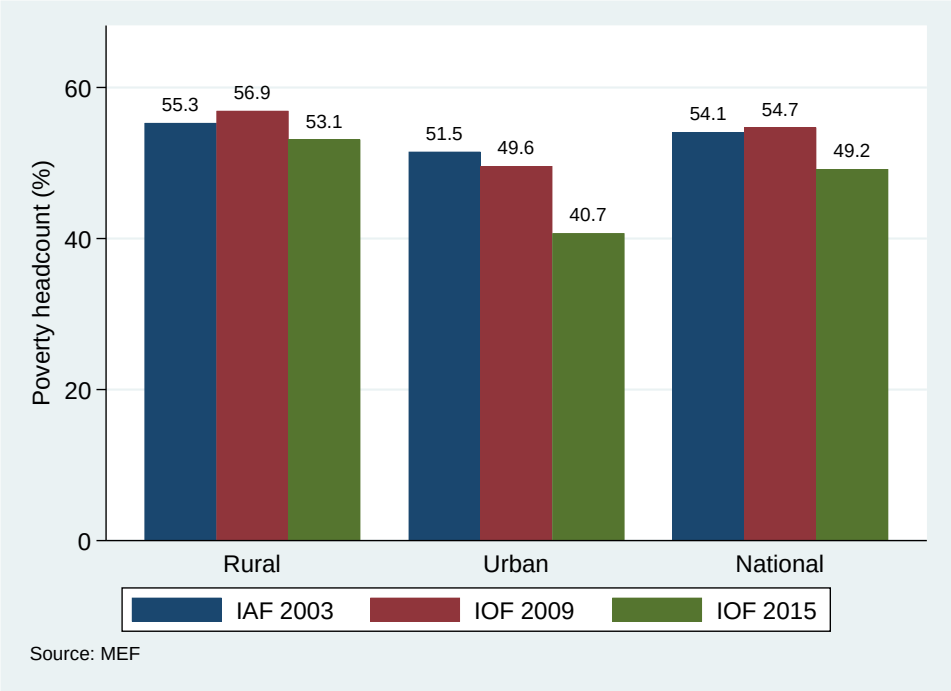


Figure 3 Trends in poverty headcount incidence

(c) Prevalence of stunting and wasting among under-five children

Targets:

- Reduce stunting from 44% in 2008 to 30% in 2015 and 20% in 2020. Targets for intermediate years were not defined;
- Reduce wasting to 5% or less by the year 2025 (MALABO and not specified by PNISA). Targets for intermediate years were not defined.

Status/Trends/Gaps/Reasons: (for both nutritional targets) Figure 4 displays trends in stunting and wasting for under-five children. This figure shows that stunting slightly increased from 45.7% in 2009 to 47.9% in 2013 and then it modestly declined to 43.6% in 2015. Between 2013 and 2015, decline in stunting was higher in urban than rural areas (from 43.7% to 35.4% for urban areas versus from 49.7% to 46.5% for rural areas). This could also be a reflection of low agricultural productivity over the period. Figure 4 also illustrates that wasting increased from 8.0% in 2009 to 11.3% in 2013 and then dropping to 4.9% in 2015. Contrary to the case of stunting, wasting dropped by about 6.0% in both urban and rural areas. However, the incidence of wasting is higher in rural than urban areas. Stunting and wasting prevalence are considerably higher in Northern and Central Mozambique than in Southern Mozambique for any given year. For instance, in 2015, stunting (wasting) was 50.9% (6.9%) in the Northern region and 44.7% (4.6%) in the Central region, compared with 27.0% (2.1%) in the Southern region. PNISA target for stunting of 30% in 2015 was not achieved; while the MALABO target for wasting of 5.0% or lower was met. Progress was made towards achieving the target for the short-term indicator (wasting), but significant shortfall in achieving target for the long-term indicator (stunting). This reflects the complex underlying causes and multisectorial interventions required to address issues related to food and nutritional security. Stakeholder consultations (Central and provincial levels) revealed SETSAN's constraints and limited provincial and district level engagement in addressing nutritional issues. PNISA,

through SETSAN, has stated and provide support for and collaboration with Multisectorial Action Plan for Reduction of Chronic Malnutrition in Mozambique 2011-2020 (PAMRDC);

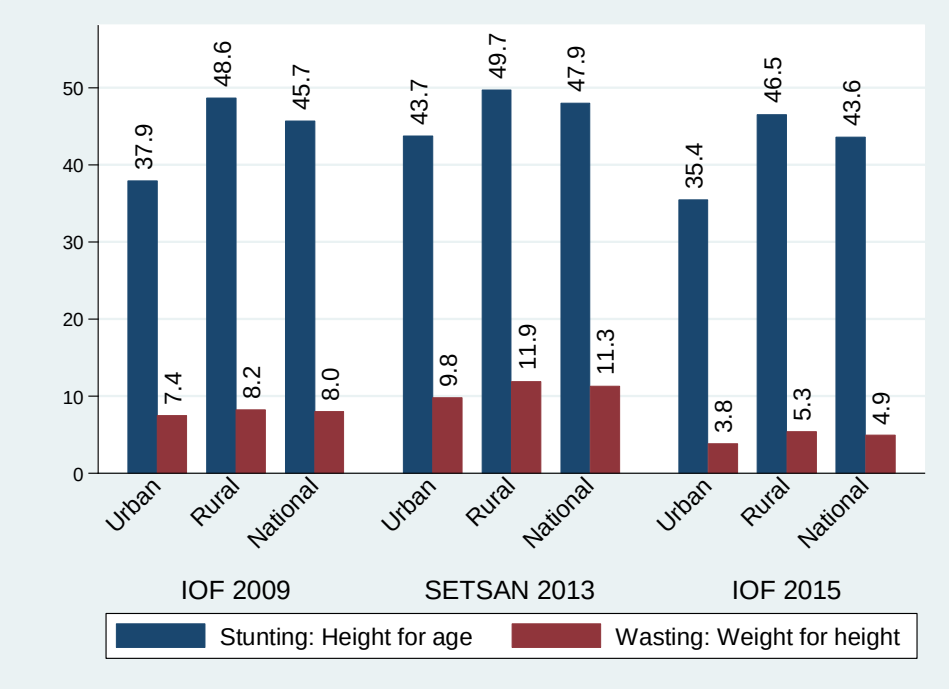


Figure 4 Trends in stunting and wasting

Priority Recommendations (for both nutritional targets):

a) (CR) MASA to re-assess the realism of PNISA's ambitious targets on stunting based on trends and the complexity of addressing the food and nutritional security and associated stunting challenges, while setting specific targets based on improved yearly monitoring;
b) As part of on-going updating National Food Security and Nutrition Strategy, MASA to conduct an assessment of SETSAN's constraints and derive/update appropriate food security and nutrition strategies and targeting nutrition-sensitive interventions (geographical and HHs), and promote stronger institutional collaborations;
c) Conduct MTR of PAMRDC and derive and implement relevant updated and prioritized action plan, including stronger coordination processes;

(CR) Ensure adequate funding from PNISA to support implementation of relevant prioritized food security and nutrition interventions (FY 2018, 2019, and 2020)

(d) Private sector investment in agricultural sector (domestic & foreign)

Domestic:

(i) Targets: Ensure that government investment leverages increased domestic private investment in agriculture sector by 2025; the increased quantity/ratio was not specified.

(ii) Status/Trends/Gaps/Reasons:

- PNISA did not devote explicit strategy and interventions to stimulate directly inclusive private sector development;

- The indicator was not defined under PNISA and targets were not defined under MALABO. Absence of data systems to generate this important indicator limits its assessment.
- Promising private sector investment includes numerous key commodities (e.g. sugarcane, banana, poultry, rice, maize processing, etc.);

(iii) Priority Recommendations:

a) Establish realistic targets for this indicator taking into account the existing trends and resources;
b) Collect data for analyses and utilization of information on the level private sector investment in agricultural sector

Foreign Investment:

(i) Targets: Ensure that government investment leverages increased a foreign private direct investment in agriculture sector by 2025; the quantity/ratio was not specified.

(ii) Status/Trends/Gaps/Reasons:

- The indicator was not defined under PNISA and targets were not defined under MALABO. Absence of data systems to generate this important indicator;
- Promising foreign private direct investment was not specified;
- While some initiatives to promote private sector investment are being promoted (e.g. reduction of import tax, extension of 10% IRPC for another 10 years, bona fide water rates for irrigation, no payment of VAT for locally produced commodities, subsidized rates for electricity and diesel), they are at incipient stage;
- Absence of comprehensive and operational strategy for expanding private sector development of and engagement in Mozambique's agriculture sector.

(iii) Priority Recommendations (applies for both domestic and foreign investments, with some adjustments):

a) (CR) Carry out comprehensive and operational strategy for expanding private sector development of and engagement in Mozambique's agriculture sector (to cover both domestic and foreign direct investment). This is to be based on agreed ToR, mobilization of funding and acting engagement by private sector stakeholders; ToR should give special attention to addressing enabling environment (e.g. reduced bureaucracy to benefit from bona fide diesel and electricity rates, access to land ownership and enhanced security) for private sector investment. Based on operational strategy, there is a need for PNISA to provide adequate and prioritized funding based on explicit criteria.
b) (CR) With the abolishment of CEPAGRI, there is a need for MASA to work out appropriate institutional roles and arrangements for spearheading expanded and inclusive domestic and foreign private sector development to help drive agricultural transformation (including youth and gender), with a focus on promoting competitive and private sector-driven VCD.
c) (CR) MASA, in collaboration with MIC and other entities, to creating an enabling environment (e.g. reduced bureaucracy to benefit from bona fide diesel and electricity rates, expanded access to land ownership and security, expanded access to finance, etc.) for expanded private sector investment (domestic and foreign).
d) (CR) MASA, in close collaboration with MIC, to establish appropriate and reliable data collection system of private sector investment, analyses, and utilization of these potentially useful data to track and promote more effectively inclusive and expanded private sector investments (domestic and foreign) in the agriculture sector. PNISA to provide adequate funding for improved data system;

Table 1 below summarizes evaluation results for core indicators at the PDO level.

Table 1 Assessment of PNISA PDO level indicators

PDO Indicators	Targets	Results	Rating
PDO Indicator 1 (MALABO): Annual agricultural sector growth rate (**CORE INDICATOR**)	Average growth rate of 7% per year for the next 10 years (PNISA). Growth rate of at least 6% from 2015 to 2025 (MALABO).	1. Average agriculture growth rate for the period was 3.1% per year. Significant and consistent shortfalls in achieving the ambitious target. 2. Major reasons include significant underfunding of PNISA (public and development partners) coupled with PNISA's limited scope in mobilizing funds, promoting and achieving an expanded private sector role.	
PDO Indicator 2 (MALABO): Reduction rate of poverty headcount ratio (CORE INDICATOR)	Reduce poverty level by at the least 50% at national poverty line, from the year 2015 to the year 2025 (MALABO and not specified by PNISA)	Modest reduction in poverty (54.7% in 2009 to 49.2% in 2015) and it is more in rural areas (53.1) compared to urban areas (40.7%). This reflects a larger reduction in urban poverty with modest decrease in rural poverty (9% versus 3%), coupled with relatively low agricultural sector growth rate trends. Promising sources of agricultural growth and rural poverty reduction include scaling up improved technologies and contract farming. However, PNISA limited funding (level and composition) has limited its potential role.	
PDO Indicator 3: Food and Nutritional Security (MALABO)			
a) Prevalence of stunting (% of under-five children) (CORE INDICATOR)	Reduce from 44% in 2008 to 30% in 2015 and 20% in 2020.	Very unlikely to be met based on modest increase from 45.7% in 2009 (IOF) to 43.1% in 2013 (SETSAN) and modest decrease to 43.1% in 2015 (IOF)	
b) Prevalence of wasting (under five children) (CORE INDICATOR)	Bring down wasting to 5% or less by the year 2025 (MALABO and not specified by PNISA).	Achieved: 8% in 2009 (IOF), 7.0 % in 2013 (SETSAN) and 4.5% in 2015 (IOF)	
PDO Indicator 4: Private sector investment in agricultural sector (MALABO)			
a) Domestic: Ratio of private sector investment to government investment in agriculture (CORE INDICATOR)	Ensure that government investment leverage at least X times domestic private investment in agriculture sector by 2025	PNISA did not devote explicit operational strategy and interventions to stimulate directly inclusive private sector development and engagement Targets were not defined under PNISA and MALABO. Absence of data systems to generate this important indicator. The data shown in the current draft of BR is misleading Promising private sector investment includes numerous key commodities (e.g. sugarcane, banana, poultry, rice, maize processing, etc.); while some initiatives to promote private sector investment are being promoted (e.g. reduction of import tax, extension of 10% IRPC for another 10 years, bona fide water rates for irrigation, no payment of VAT for locally produced commodities, subsidized rates for electricity and diesel), they are at incipient stage.	
b) Foreign: Ratio of foreign private direct investment to government investment in agriculture (CORE INDICATOR)	Ensure that government investment leverage at least Y times foreign private direct investment in agriculture sector by 2025	Targets were not defined under neither PNISA nor MALABO.	

3.2 PNISA Structure

Based on the above overall framework for PNISA, its design focused on formulating five components (or "result areas"), strategic "thematic areas" and 21 supporting programs (see Table 2).

Table 2 Structure of PNISA

Component/Result Area	Program
1. Agricultural Production and Productivity (8 programs)	Food Crop (1); Cash Crop (2);Fishery (3); Livestock (4) Agricultural Research (5); Agricultural Extension (6); Agricultural Irrigation (7); and Agricultural Mechanization (8)
2. Access to Market (5 programs)	Postharvest Management and Marketing (9); Financial Services (10); Agribusiness Development (11); Rural Roads (12); and Information Systems and Agricultural Statistics (13)
3. Food Nutritional Security (2 programs)	Multisectorial Monitoring and Coordination (14); and Improved Access to and Use of High Nutritional Value Food (15)
4. Natural Resources Management (4 programs)	Land for Agricultural Purpose (16); Forestry and Wildlife (17); Institutional Development of the DNTF (18); and Mapping and Remote Sensing (19)
5. Institutional Reform and Strengthening (2 programs)	Institutional Reform (20) and Institutional Strengthening (21)
Cross-cutting issues: Gender, environment, other sector policies, on-going plans, decentralization	There are not stand-alone hence has no budget of their own. They are fully integrated into the 5 components and corresponding 21 programs.

The assessment of PNISA has generated the following findings and recommendations to enhance the strategic relevance of PNISA's programmatic structure, including stronger alignment with the PQG, PEDSA and key elements/indicators of the MALABO Declaration:

- MASA to broaden Result Area 2, from "Expanded Market Access", to "Expanded and Inclusive Value Chain Development, Market Access and Agriculture Trade": The rationale is that achieving the agricultural transformation objectives of PNISA will require a more comprehensive and expanded focus on further developing inclusive and private sector-driven and competitive value chain development, together with explicit strategies/actions for expanded agricultural trade (both domestic and international);
- (CR) MASA to rename Program 11 ("Agribusiness Development Program" to "Competitive Value Chain Development and Agricultural Trade Program". This expanded program (and its sub-programs) will need to be driven by an inclusive and strengthened private sector, involving small and medium-scale enterprises/entrepreneurs, to promote private sector-driven value chain (going beyond primary commodity processing/markets), and more explicit attention to ensuring a sound policy and institutional environment for expanding competitive agricultural trade (both domestic and exports); and
- (CR) The decentralization theme is cross-cutting, and integrated in relevant results areas/components of PNISA. However, with the Government's more recent increased attention on expanding decentralization of budget and services, it would be timely for MASA to include more explicit attention to further operationalizing and strengthening decentralization (with staffing and funding) of key agricultural services (e.g., agriculture extension; veterinary services;

agricultural statistics, especially regarding price information monitoring; monitoring and evaluation).

3.3 Results Area 1: Increased Production and Productivity

At the onset of PNISA in 2013, production and productivity of agricultural sector were low as the country depended on imports to fulfill its needs in the majority of food stuff. Additionally, as the country economy depends heavily in agricultural sector, productivity improvements in cereals, root and tubers, livestock, and high-value export crops could have significant effects on poverty reduction and economic growth. Therefore, there was a need to develop sustainable production systems capable of doubling output. In order to improve agricultural productivity, the PNISA document established the Production and Productivity Result Area (or Component) composed of 8 programs, namely: (i) Food Crops; (ii) Cash Crops; (iii) Fisheries and Aquaculture; (iv) Livestock; (v) Agricultural Research; (vi) Agricultural Extension; (vii) Agricultural Irrigation; and (viii) Mechanization Support. The sections below assess the progress made in each program against the established targets and identify key challenges and lessons as well as recommendations to sustain and improve the performance of the programs. Before assessing the performance of each program, Table 3 below presents the summary of the assessment of the PNISA strategic objectives under the production and productivity result area by comparing the stipulated targets values of the established indicators with the actual results and draws recommendations for improving and sustaining the performance of the evaluated result area.

3.3.1 Food Crop Program

(i) Objectives and Targets:

The objective of this program is to increase the production and productivity of food crops. For maize, the target was to increase yield to 1.8 MT/ha using technological packages 1 (PT1), which means the use of improved seeds and to 2.5 metric tons (MT) per hectare (ha) using technology package 2 (PT2), which reflects the use of improved seeds as well as fertilizers. The target for rice was 1.6 MT/haMT/ha under technological packages 1 (PT1), 2.0 MT/ha using technological package 2 (PT2) and 2.7 MT/ha using technological package 3 (PT3) which uses simultaneously improved seeds, fertilizer and irrigation. For wheat, the target was to increase productivity to 1.5 MT/ha and 1.8 MT/ha, using PT1 and PT2, respectively. For beans the target was to increase yield to 0.85 MT/ha. The PNISA established yield target was 18.0 MT/ha and 20.0 MT/ha using PT3 for Irish potato and tomato, respectively.

(ii) Main Achievements:

Figures 1 and 2 present the trends of the food crops. There is slightly an increase trend for maize and rice yields. However the realized yields fall well below the established targets: 1.1 MT/ha for maize against the established target of 1.8 MT/ha under PT1 and 2.5 MT/ha under PT2; and 1.2 MT/ha for rice, compared to the established target of 1.6 MT/ha under PT1 and 2.0 MT/ha under PT2. There is no clear trend for beans and the average yield is 0.6 MT/ha against the stipulated target of 0.8 MT/ha. The wheat yields remained at 1.1 MT/ha during the analyzed period, which is lower than the stipulated target of 1.5 MT/ha under PT1 and 1.8 MT/ha under PT2. However, Irish potato and tomato exhibits an upward trend and the yields of these two crops in 2017 are higher than the established target. The use of improved inputs (seed, fertilizer and irrigation) is the main drive for the good performance of these two food crops.

Table 3 Assessment of targets for food crop and cash crop programs

Components	Strategic Objective	Outcome indicator	Unit	Base-line	Target	Key Results	Recommendations
		Production levels	10^3MT	230	900	Difficult to assess as this indicator is not attached to any group of crops (e.g. cereals, legumes, livestock, cash crops)	MASA to subdivide this indicator for major groups of commodities.
		Area under production	10^6 ha	1.8	3	Target reached in all PNISA period varying from 4.65 to 5.30	MASA to align land increase with the use of enhancing yield inputs.
		Average yield increased	MT/ha	1.0	2.5	Cereal yield is still at 1.1	MASA to adjust the target considering the trends and the available resources
		Technology adoption rates	%	15	20	Difficult to assess due to the lack of data	MASA to establish the PNISA M&E system capturing data on farmers' adoption rates of different technologies.
		% of farmers, by type (land holding size), using fertilizer	%	10	20	In 2015 only 4.5% of farmers used fertilizer.	MASA to adjust the targets taking into account the current trends and the available resources. Design an action plan to increase the use of fertilizer.
		% of farmers using improved seed	%	5	35	Data from TIA/IAI indicate that the % of farmers using improved seeds varies from 3.1% to 12% (various crops) which is lower than the target.	MASA to adjust the targets taking into account the trends and the available resources. Design an action plan to increase the use of improved seeds.
		Quantity of fertilizer applied by smallholders	Kg/ha	2	25	In 2015, only 3.7kg/ha of fertilizer were applied in Mozambique.	MASA to adjust this targets taking into account the current trends and the available resources. Design an action plan to increase the use of fertilizer.
3) Use of good agricultural practices (GAP)	Promote GAP (pest control, fertilizer use, weed management)	% of farmers that practice GAP	%	5	30	Difficult to assess due to the lack of data on good agricultural practices	MASA to develop M &E system, which include data collection, analysis and use for the GAP adoption rates.
4) Application of agriculture mechanization	Promote mechanization of crop production systems	Area under mechanized agriculture	000 ha	375	3000	Difficult to assess due to the lack of data	MASA to develop M&E system including data collection, analysis and use for the area under mechanized agriculture and categorize by type of mechanization.

(iii) Key Gaps/Challenges:

The main challenge associated with the low yield of food crops are primarily due to limited use of improved inputs, high dependence on rain-fed agriculture, and constraints in technology services (research-extension linkages, mechanization), financing and market access. It is important to note that there was significant underfunding of this program (relative to the original PNISA proposed budget). Also, the majority of the budgeted funds under this program were not disbursed. The gap between budgeted and disbursed funds exceeds 50% in all years except in 2013, with a financial gap of 48% (see Figure 7).

(iv) Priority Recommendations:

Based on the above assessment, the main recommendations are:

a) (CR) MASA to formulate realistic and sound yearly yield targets, beginning with targets for fiscal year 2018, for key commodities based on trends and realistic assumptions and supporting actions, and required and likely funding resources available through PNISA;
b) (CR) MASA to further enhance operationalization of PEDSA/PNISA (e.g. to guide priority cropping patterns according to agro-ecological zones, and addressing other relevant constraints; and
c) Although cassava was not included in the PNISA, it is recommended that MASA include cassava in priority commodities for support in technology development, via research and extension programs. The rationale is due to cassava's importance in enhancing food security, especially in Nampula and Zambezia provinces and local income households.

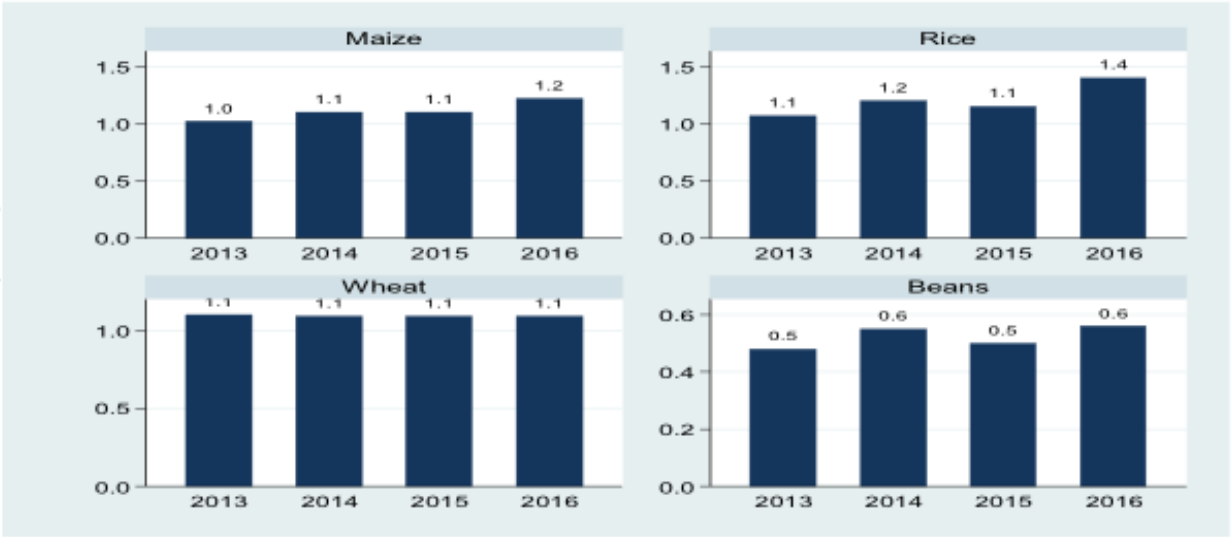


Figure 5 Trends in cereals and beans yield

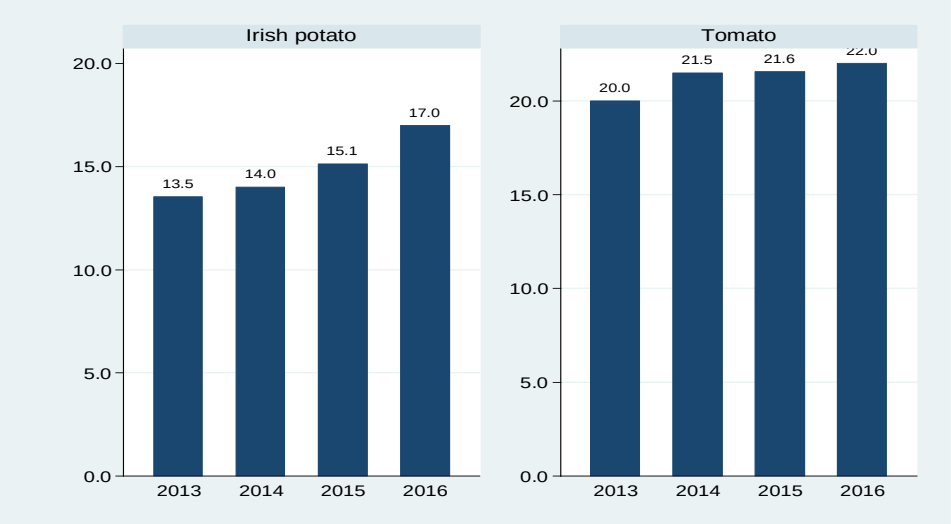


Figure 6 Trends in Irish potato and tomato yields

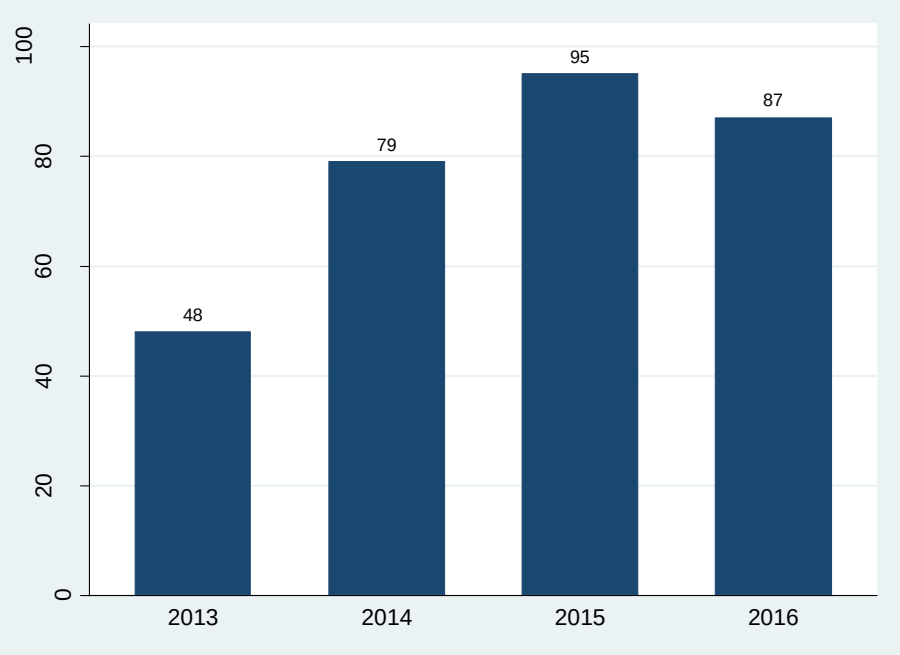


Figure 7 Gap between proposed and actual financing for the food crop program

3.3.2 Cash Crop Program

(i) Objectives and Targets

The PNISA objectives under the Cash Crop Program varied by crop. For cashew, PNISA aimed to (i) develop research; (ii) promote extension, finance, market and process and (iii) institutional strengthening. The indicators including their respective targets were (i) produce and distribute 21.3 million cashew seedlings by 2017 (an average of 4.6 million per year), adapted to the various agro-ecological zones of the country; (ii) introduce and popularize the direct sowing of cashew based on polyclonal and multilocal

seeds (15.9 thousand kg of seeds in 2016/17) as well as spray 27.5 million cashew trees by 2017, for an average of 4.8 million trees per year. For the marketing component, PNISA established as indicator to (i) increase the marketed production of 112.0 thousand MT in 2011 to 136.0 thousand MT in 2016/17; and (ii) expand the national cashew processing capacity from 38.0 thousand MT per year to 54.4 thousand MT in 2016/17 and export about 10.0 thousand MT of cashew kernel.

For cotton, the objective were to recover cotton production to the average of about 85.0 thousand MT per year and its subsequent development to reach record levels, of about 200.0 thousand MT. The activities to be performed to fulfill the objective are: (i) research; (ii) training and capacity building; (iii) improved marketing; (iv) industrialization of cotton; and (v) institutional strengthening. Regarding soybean, the overall objective was to increase the availability of soybeans through an increase in productivity and production. However, PNISA did not establish specific target for the increase in soybean production. Finally, for sunflower, the objective was to increase production by increasing the yield per hectare in order to satisfy the domestic market, and to explore the export market as a way to substitute imports. However, PNISA did not establish specific targets.

(ii) Main Achievements/Results:

Regarding cashew, during the period from 2013 to 2016 an aggregate of 13.0 million seedlings were produced and distributed. However, this amount is below the target amount of 21.3 million seedlings by 2017 corresponding to an execution rate of 61% in the fourth year of PNISA. PNISA established a target to spray 27.5 million trees by 2017, with an average of 4.8 million trees per year. During the period from 2013 to 2017, 20.1 million trees were sprayed corresponding an achievement rate of 73% in the fourth year of PNISA. For the marketing component, during the period from 2013 to 2014, the quantity of marketed production exhibits an increasing trend (Figure 8). The marketed production of cashew increased from 63.1 thousand MT in 2013 to 139.0 thousand MT in 2016. Compared to the target value of 136.0 thousand MT, the marketed production realized in 2016 is 2.3% above the stipulated target. This result reveals PNISA achieved the marketing target for cashew nuts.

For cotton, available data indicate that the average production of cotton in the period from 2013 to2016 was 59.5 thousand MT, and with the highest production of 82.1 thousand MT in 2014, and the lowest production of 42.6 thousand MT in 2016. This result suggests that the sector has not yet achieved the PNISA stipulated target of an average of 85.0 thousand MT per year.

For soybeans, the production levels were at 18.7 thousand MT in 2009/10, 19.5 thousand MT in 2010/11 and 21.0 thousand MT in 2011/12 cropping season. Figure 1.4 below reveals that the production of soybean has more than doubled from the initial value of 21.0 thousand MT in 2011/12 to 50.0 thousand MT in 2016. The lack of the specific target hampers the assessment of PNISA performance regarding this indicator. However, it can be stated that PNISA is contributing to an increase in soybean production. This is coupled by the existence of market for this commodity. Sunflower production is also exhibiting an upward trend (Figure 9). However, it is difficult to assess the PNISA achievement regarding sunflower production due to the lack of the respective target.

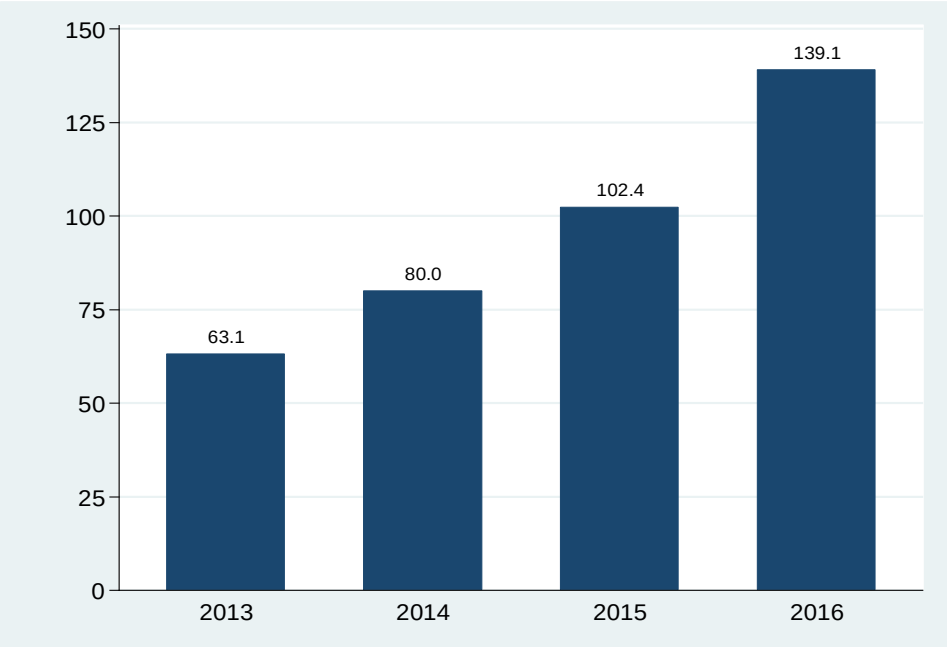


Figure 8 Trends of marketed cashew nuts

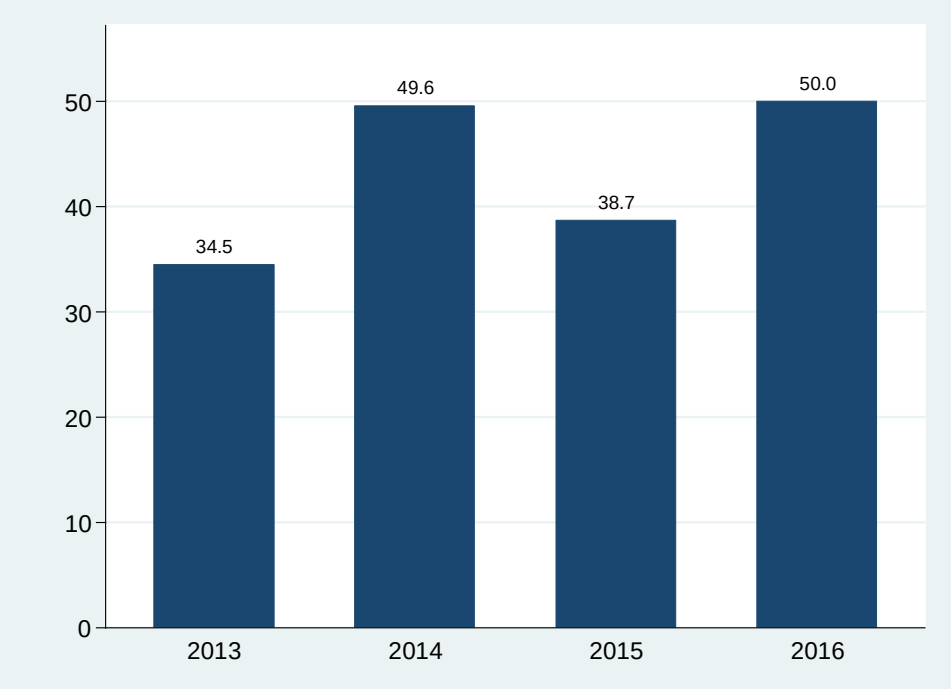


Figure 9 Trends of soybean production

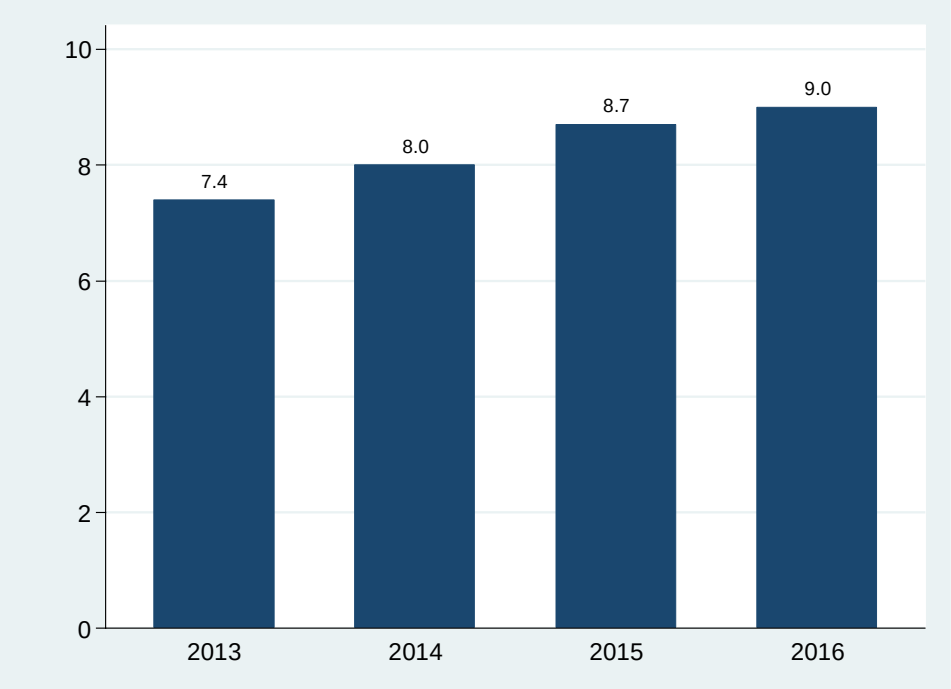


Figure 10 Trends in sunflower production

(iii) Key Gaps/Challenges:

The main challenge under this program was essentially related to the distribution of cashew seedlings, which might be associated with the limited financial resources. It is important to note that the majority of the budgeted funds under this programme were not disbursed as the gap between budgeted and disbursed funds are over 50% in all years (see Figure 11).

(iv) Priority Recommendations:

The key recommendations are:

a) MASA to formulate realistic and sound yearly yield targets (beginning with fiscal year 2018) for the PNISA-promoted cash commodities based on trends and realistic assumptions, and required and likely resources available through PNISA, and
b) MASA to enhance operationalization of PEDSA (e.g. to guide priority cropping patterns according to suitability of agro-ecological zones, and addressing other relevant constraints).

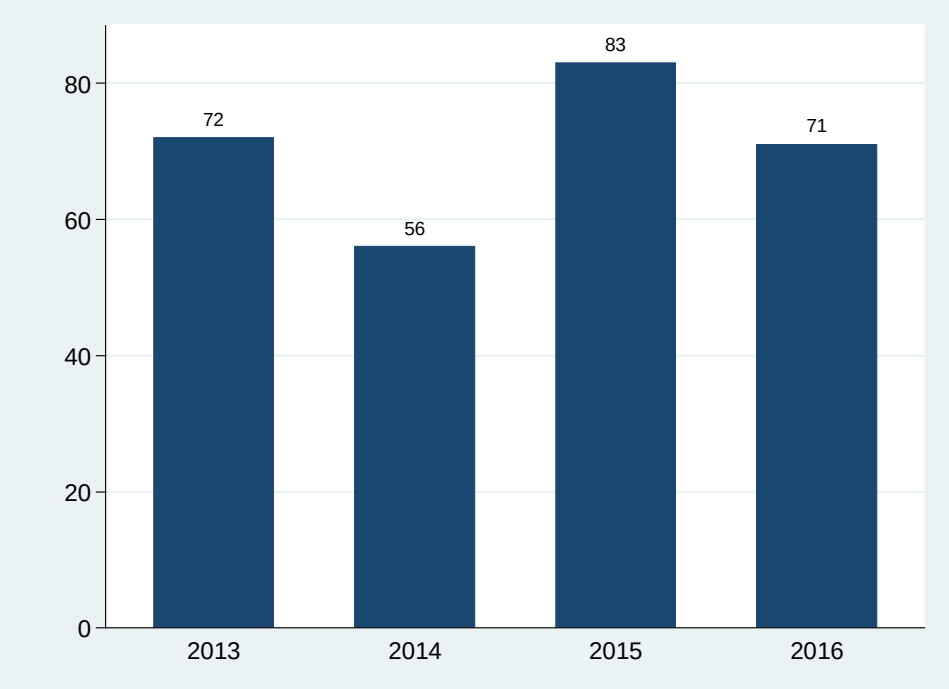


Figure 11 Gap between proposed and actual financing for cash crop program

3.3.3 Fisheries and Aquaculture Program

The general objective of the Fishery Program is to increase the availability of fish, through increased fishery production and productivity. The specific objectives of the programme are: (1) expansion of the national tilapia production; (2) promotion of small-scale aquaculture; (3) establishment of a disease monitoring and prevention plan; (4) promotion of improved gear for fishing in the open sea; (5) creation of conditions for the deployment of fishery support infrastructure; (6) extension of the marketing network for fish products and inputs; (7) promotion of micro-financing; and (8) institutional capacity building.

(i) Objectives and Targets:

Table 4 summarizes indicator with the respective targets for the fishery and aquaculture program.

Table 4 Assessment of targets for the fisheries and aquaculture program

Component	Strategic Objective	Outcome indicator	Unit	Baseline	Target	Result	Recommendations
Fish seed Development	To produce quality fingerlings of right species in sufficient quantities	Increased quantity of improved quality and accessible fingerlings	million	20	90	Three factories (Inhambane, Tete and Zambezia) produce fingerlings. However, data on fingerlings production are unavailable. Available data on the number of distributed fingerlings show increase from 1.2 in 2013 to 2.5 in 2016.	MMAIP to improve PNISA M&E and collect data, analysis and use for the production of fingerlings in Mozambique.
Pond and Dam Aquaculture promotion	To establish pond and dam Aqua-parks on the appropriate areas by conducting the EIA	Increased production and productivity of areas without capture fisheries	MT of fish/ ha/ year	4,000	30,000	The available data on aquaculture reveal production of 721 MT, 1179 MT and 1133 MT in 2013, 2014 and 2015, respectively. These figures are significantly lower than the established base line (4,000 MT) and target (30,000 MT).	MMAIP should adjust the baseline and targets taking into account trends and available resources. MMAIP to design an action plan to increase aquaculture production including the domestic production of fish feed and the establishment of other fingerlings factories across the country.
Enhancement of Capture fisheries production	To restock the depleting capture fisheries through Aquaculture	Sustainable recruitment of juvenile fish in the depleting lakes	MT fish/ year	70,000	90,000	Difficult to assess due to lack of data	MMAIP should improve PNISA M&E system to include data collection, analysis and use for the juvenile fish.
Enhancement of Marine fisheries production	To restock the depleting capture fisheries through Aquaculture	Sustainable recruitment of marine fish	MT fish/ year	70,000		Production of marine fish increased from 222,000 MT in 2013 to 287,000 MT in 2016. Assessment of this indicator is difficult due to inexistence of target.	MMAIP is recommended to establish yearly and end of the program targets of this indicator starting from fiscal year 2018.
Climate change and climate variability	To establish an early warning and planning system.	Adoption rate of climate change or variability mitigation strategies	%	0	75	Difficult to assess due to lack of data	MMAIP should improve PNISA M&E system to include data collection, analysis and use regarding the adoption rate of climate change variability mitigation strategies.

(ii) Main Achievements/Results:

The results show an improvement in aquaculture production with and upward trend (Figure 12). However, the PNISA target of producing 30.0 thousand MT was not achieved. Additionally, the production of marine fish increased drastically in 2015 (Figure 12). The PNISA target was not defined which makes it difficult to assess this indicator.

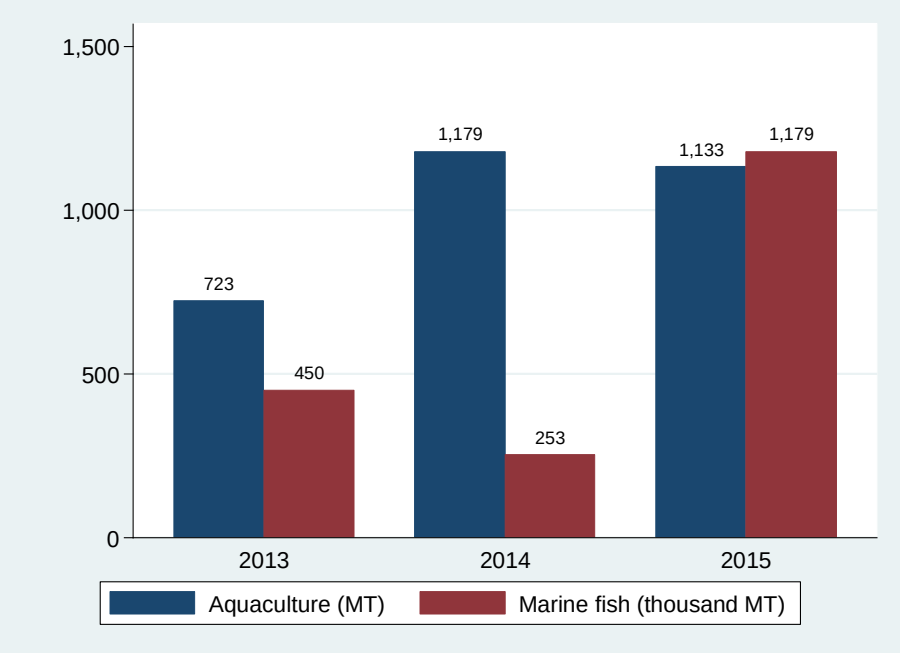


Figure 12 Trends in aquaculture and marine fish production

(iii) Main Gaps and Challenges:

This program does not present clear indicators with the respective targets. The lack of domestically produced fish feed coupled with the limited production of fingerlings are the main factors hampering the production of aquaculture in the country. Illegal fishing is another factor behind the unsustainable management of fishery resources.

(iv) Priority Recommendations:

a) The MMAIP to formulate realistic and sound yearly fish production targets (beginning with fiscal year 2018) for the PNISA based on trends and realistic assumptions and required and likely resources available through PNISA;
b) (CR) MMAIP to promote the establishment of fingerling and fish feed factories across the country; and
c) the MMAIP to enhance supervision to limit illegal fishing.

3.3.4 Livestock Program

(i) Objectives and Targets:

The main objectives of the Livestock Program are to: (a) increase livestock production and productivity through increasing herds of cattle, pigs, small ruminants and poultry; and (b) encouraging the processing

and marketing of livestock and animal-sourced food products. The indicators with the respective targets are: (a) expand the coverage of immunization of cattle from the current 65% to 80%, through (i) vaccinating 1.4 million cattle in year-1; and (ii) vaccinating 2 million cattle in year-5 in order to achieve an average annual growth of 8% in the number of vaccinated animals; (b) Controlling Rabies and vaccinating more than 80% of dogs annually; (c) extending the coverage of tick baths through increasing the coverage of existing tick baths from the actual 7.4 to 12 baths/animal/year; (d) construction and rehabilitation of livestock infrastructure through rehabilitation and construction of tick tanks and treatment hoses and corridors as well as construction of watering points and dams; (e) reducing the prevalence of bovine tuberculosis and brucellosis from 40% to 20% in 2017. Additionally, the program aimed to (1) build marketing cattle fairs and slaughterhouses for cattle and goats; (2) establish 6 chicken processing and conservation units with a total slaughter capacity of 30.0 thousand poultry per day; (3) establish batteries for the production of consumption eggs; (4) purchase and distribute 250 sires of high genetic merit in order to improve productivity; (5) increase the average weight per animal carcass from 140 to 160 kg ; (6) purchase and distribute semen and embryos of breeds of high genetic value; and (7) purchase and distribute breeding animals of high genetic merit.

(ii) Main Achievements/Results:

Figure 13 below shows the number of cattle, pigs, goats and chicken during the analyzed period. It can be seen that chicken dominated with minimal number of 15 million and maximal of 22 million followed by goats, cattle and pigs, respectively. However, during the period there is no evidence of an increasing trend in the number of animals, which suggest no significant increase in production of these animals over time.

Figure 14 below shows the trend of number of cattle vaccinated during the period from 2013 to 2016. The trend is positive with an increase in the number of cattle vaccinated from 973.4 thousand in 2013 to 1.4 million in 2016. However, the PNISA target of vaccinating 2.0 million cattle in 2017 will not probably be reached. Currently, the number of cattle vaccinated is around 1.4 million and it should increase by 0.6 million to reach the established target of 2.0 million in 2017.

Regarding rabies control, the number of vaccinated dogs increased from 163.9 thousand in 2013 to 226.5 thousand in 2016. In 2014 and 2015, the vaccination covered 203.6 thousand and 224.3 thousand dogs, respectively. This is positive scenario towards rabies control. The estimated number of dogs in Mozambique is around 800 thousand which imply an average of vaccination coverage of 26% during the period from 2013 to 2016. This result is still somehow far from the stipulated PNISA target of vaccinating 80% of the dogs.

The number of baths per animal per year increased from 9 baths in 2013 and 2014 to 10 baths in 2015 and 2016. These results show an improvement from the previous 7.39 baths per animal per year. Efforts should continue in order to reach the PNISA target of 12 baths per animal per year by 2017.

The prevalence of bovine tuberculosis and brucellosis actually increased from 40% in 2012 to 43% in 2013 and 47% in the subsequent years until 2016. The number of districts affected by the disease has been also increasing from 15 in 2012 to 35 in 2016 and it was 19 in 2013 and 2014 and 28 in 2015. These results suggest that there is still challenge to control the bovine tuberculosis and brucellosis in Mozambique

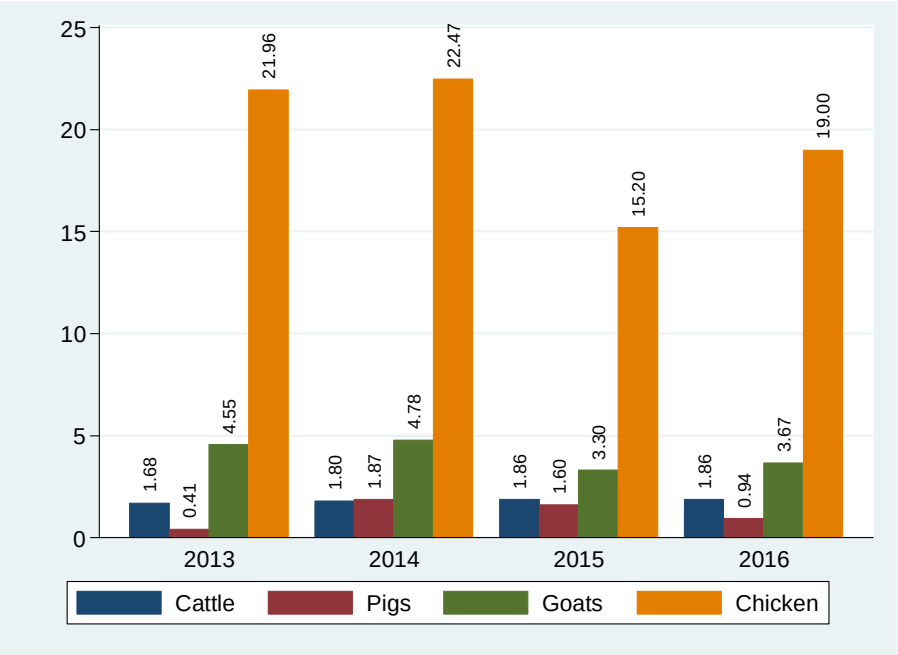


Figure 13 Number of cattle, pigs, goats and chicken

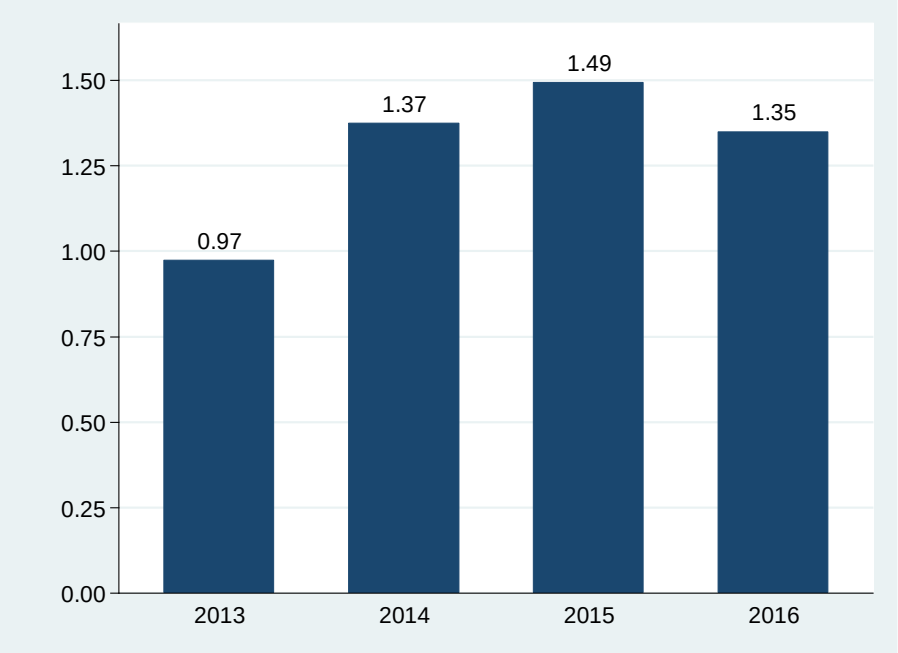


Figure 14 Trend in vaccinated cattle

Available data from MASA show that six slaughterhouses for cattle, being five in 2014 and one in 2016, were constructed in Mozambique. From the stipulated 6 chicken processing plants, except one was constructed in 2015. In addition, one goat slaughterhouse was constructed in 2014. Although stipulated in the PNISA, there was no construction of batteries for the production of consumption eggs. The number of sires distributed during the period was higher than the stipulated number (250 sires) under PNISA. During

the period, MASA distributed a total of 5,856 sires being 3,079 in 2013, 853 in 2014, 894 in 2015 and 1,030 in 2016. Although the target was not stipulated under PNISA, MASA additionally distributed a cumulative of 7,045 cattle of breeding animals being 2,145 in 2013, 1,668 in 2014, 1,425 in 2015 and 1,807 in 2016. The average weight per animal carcass did not change much for the initial value of 140 kg. From 2013 to 2016, the average weight per animal carcass was 146kg. Therefore, there is still a need to improve the genetics of the animals as well as the quality of the feed. PNISA did not quantify the number of dozen of semen and embryos of breeds to be distributed. In this regards, MASA distributed a cumulative of 1,000 dozen of semen being 450 in 2015 and 550 in 2016.

(iii) Key Gaps/Challenges:

The key gaps/challenges under this programme include (a) lack of livestock infrastructures: About 99% of the used livestock infrastructures are temporary and they are constructed during the period of the development of the respective activities using local materials which are then removed. The existing livestock infrastructures belong to the private sector and smallholders to do not have access to these infrastructures; (b) limited number of vaccines coupled with delayed administration; and (c) lack of drugs for livestock treatment. These challenges are coupled by the limited financial resources to implement this program. It is important to note that the majority of the budgeted funds under this program were not disbursed as the gap between budgeted and disbursed funds are over 50% in all years (Figure 15).

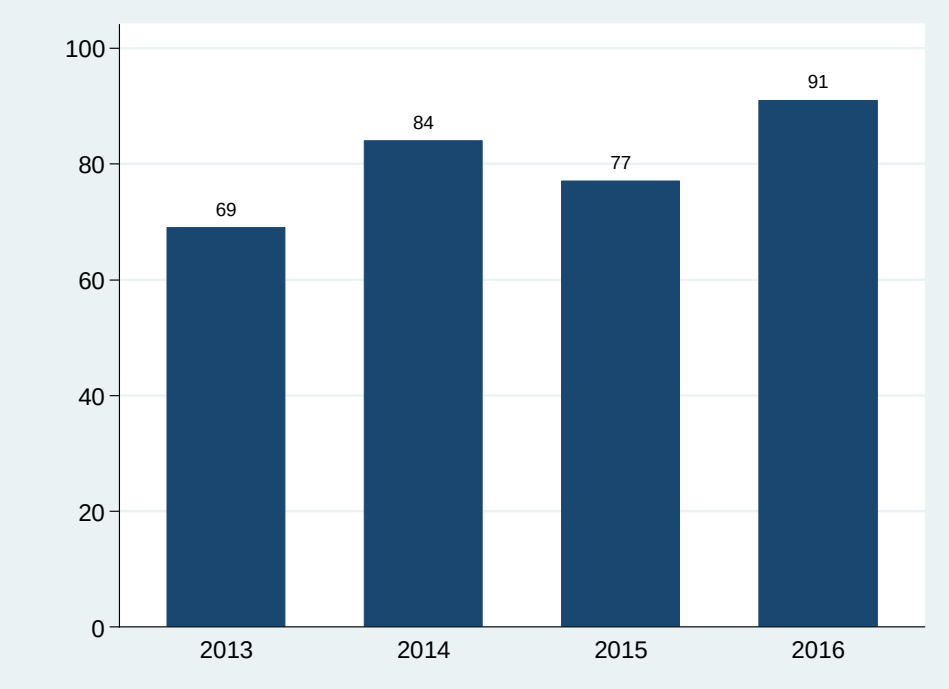


Figure 15 Gap between proposed and actual financing for livestock program

(iv) Priority Recommendations:

The following recommendations should be persuaded by MASA to enhance the livestock programme by promoting:

a)(CR) the construction of livestock infrastructures, mainly for benefiting the smallholder producers with involvement of private sector;

b) (CR) the establishment of livestock input market and services; and
c) realistic yearly livestock production targets and the respective input use and service delivery requirements, beginning with fiscal year 2018 based on trends and realistic assumptions and required and likely resources available through PNISA.

3.3.5 Research Program

(i) Objectives and Targets:

The research program aims to develop and transfer research and technology related to the main productive chains of Mozambique and the sustainable use of natural resources. The specific objectives are to:

a) contribute to productivity, production stability and sustainability of basic supply chains,
b) contribute to the competitiveness of supply chains for market-oriented;
c) contribute to food and nutrition security of consumers,
d) contribute to the productive and sustainable use of natural resources,
e) intensify the interaction and integration to institutional sustainability of IIAM (vi) improve the interaction and integration with IIAM partners as well as (vii) strengthen, develop and manage institutional capacity.

These objectives are to be accomplished through implementing the following subprograms: (a) production and transferring of technologies and (b) institutional strengthening. PNISA indicators and their respective targets were to (i) release 20 crop varieties adapted to the conditions of each location and management, (ii) release four crop varieties with high nutritional potential to fill the current nutritional deficiency in both rural and urban centers, (iii) release 12 animal breeds being two for chicken, two for goats and eight for cattle (*Landim, Bovino de Tete, Angone, Brahman South Devon, Jersey, Boran e Bonsmar*). (iv) release two technologies of harvesting and processing of products in response to the quality standards required by the market and scenario 1 and 2 of production systems with the potential for climate change adaptation. Additionally, PNISA stipulated the development, dissemination and promotion of 10 technologies and innovations related to natural resources; 25% increase in research capacity in the area of natural resources and 25% generating knowledge and information related to natural resources management in five years.

(ii) Main Achievements/Results:

As stated above, PNISA stipulated to release at least 20 crop varieties and actually IIAM released 35 varieties and therefore we can conclude that IIAM achieved the PNISA target in terms of number of crop varieties. Out of the 35 released varieties, eight are maize varieties, seven are sweet potato varieties, five are tomato varieties, three are rice varieties, three are peanut varieties, three are carrot varieties, three are lettuce varieties, two are cabbage varieties and one is *Jugo* bean variety. There was no release of varieties for the following crops: sorghum, Irish potato, cassava, stew beans, common beans, soybean, cotton, pepper, garlic, onion and cucumber. Based on IIAM data, all the envisioned animal breeds were released and additionally 1,036 artificial inseminations were realized.

Regarding natural resources management and mitigation to climate change, PNISA recommended the development of 10 technologies. IIAM data reveal that out of the 10 technologies, 9 of them were developed corresponding an achievement rate of 90%. The developed technologies area; (i) one drip irrigation method evaluated and disseminated in Namialo and Lichinga; (ii) one sprinkler irrigation method evaluated and disseminated in Guija, Chicualacuala, Mabalane and Massagena, (iii) one vegetal coal production using banana leaves evaluated and disseminated, (iv) one improved technology for honey production evaluated and disseminated in Niassa forest reserve; (v) four recommendation for fertilizing maize, soybean, boer bean, and common beans for specific agro-ecological zones and (vi) one recommendation for soil correction.

Additionally, during the 2013-2016 period, 63 technologies and practices were disseminated. It is important to recall that PNISA established to produce and disseminated two technologies related to harvesting and product processing. During the 2013-2016 period, four practices and technologies for improving processing of agricultural products (vegetable, sweet potato, cassava and beans) were disseminated. These results reveal an achievement rate of more than 100% for this target. The PNISA performance based on the other indicators are difficult to measure due to lack of data.

(iii) Key Gaps/Challenges:

The limited research capacity in terms of human resources and research infrastructure is limiting the improvement of research performance. It is important to note that among all IIAM staff in 2016, only 1.8%, 6.7% and 16.0% completed Doctorate, Master and Bachelors of Science degrees, respectively. These limited human resource capacities is further constrained by limited financial resources to support research infrastructure and activities. It is important to note that the majority of the budgeted funds under this program were not disbursed, as the gap between budgeted (of approved budget) and disbursed funds is over 50% in all years (Figure 16).

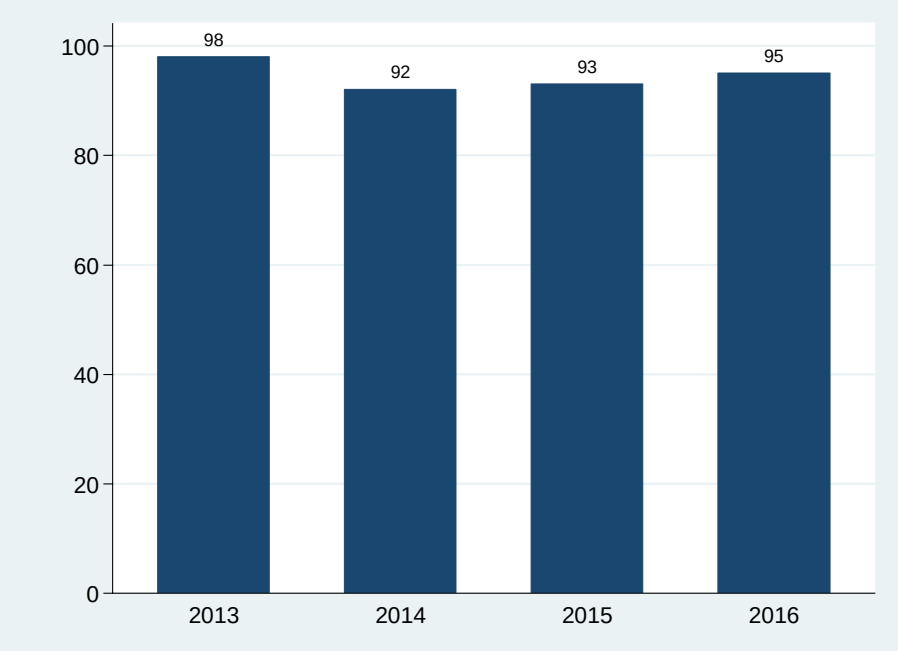


Figure 16 Gap between proposed and actual financing for research program

(iv) Priority Recommendations:

The recommendations for this program are for IIAM to:(a)

a) (CR) Mobilize funding to promote expanded degree and non-degree training to strengthen the research capacity of relevant staff at all levels (central, provincial and district):
b) (CR) Provide appropriate incentives and support to: (i) reduce high staff turnover; and (ii) promote improved efficiency and effectiveness of research production,
c) (CR) Ensure efficiency based unit cost of major expenditure to help ensure value for money;
d) Improve implementation delivering model of this program as part of ensuring the value for money during the implementation; and
e) Ensure efficient disbursement rate during the fiscal years.

3.3.6 Agricultural Extension Program

(i) Objectives and Targets:

The Agricultural Extension Program presented the following specific objectives: (1) increase the implementation capacity of extension programs within a pluralistic and participatory framework; (2) improve the technical and managerial capacity of producers with respect to the planning, monitoring and evaluation process and the provision of services; (3) provide extension services at provincial and district level to promote agricultural and fishery productivity for food and nutritional security and food and the sustainable use of natural resources. The PNISA document did not establish the indicators and the respective targets for this program. The possible indicator for this program can be (i) percentage of farmers having access to extension services and (ii) the number of extension agents. The first indicator was stipulated under MALABO declaration and the target is to all farmers having access to advisory services by 2018.

(ii) Main Achievements/Results:

Regarding the coverage of the extension services, the available data reveal a significant shortfall between the MALABO target of coverage 100% by 2018 vis-a -vis the coverage rate of 28.8% in 2016. Figure 17 below shows the number of extension agents by service provider. It can be seen that the majority of the extension agents belongs to the government and the number of government extension agents exhibits a slightly upward trend. However, due to the lack of PNISA target for this indicator, the PNISA effects in terms of increasing the number of extension agents is impossible to assess.

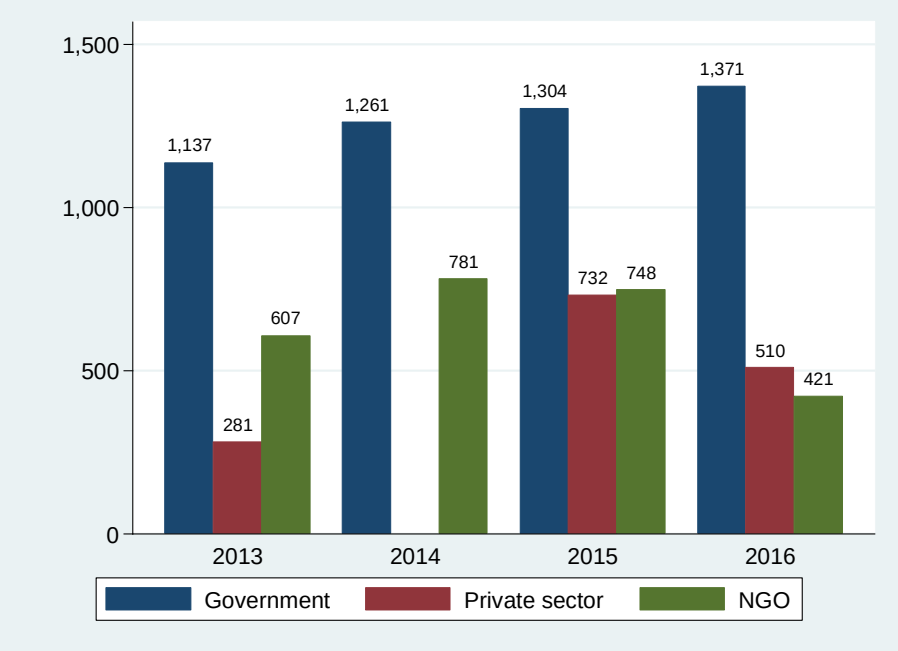


Figure 17 Trend of the number of extension agents by service provider

(iii) Key Gaps/Challenges:

The limited coverage of extension services might also be associated with the limited number of extension agents as well as infrastructures to deliver extension services such as transport means and housing for extension agents as well as associated materials. Additionally, the limited capacity in terms of extension methods coupled with the deficient linkage between extension agents and researchers might also be hampering the performance of this program. These limitations are also linked to the shortage of financial resources to support effective extension coverage. It is important to note that the majority of the budgeted funds under this programme were not disbursed as the gap between budgeted and disbursed funds are over 80% in all years (Figure 18). This reflects a common underlying constraint of and inadequate and delayed releases by the Ministry of Finance of the approved budgetary resources

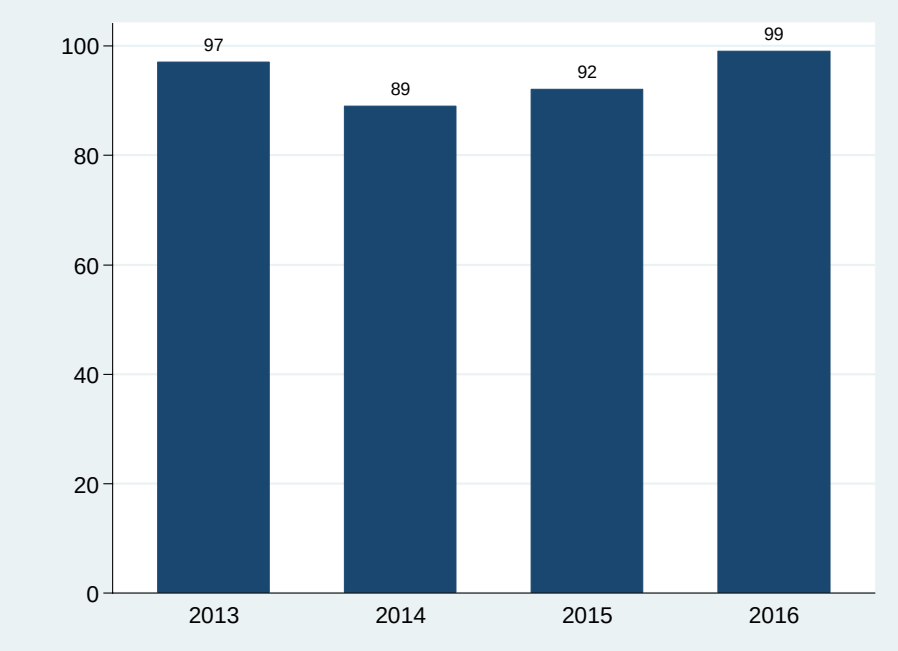


Figure 18 Gap between approved budget and actual financing for the extension program

(iv) Priority Recommendations:

a) (CR) MASA to formulate realistic action plan (including realistic targets for Mozambique) for closing the extension coverage gap and to help mobilize increased funding.
b) (CR) MASA should establish realistic assumptions on the expanded role of extension coverage by the private sector and NGOs, and to explore possible public/NGO/private extension service partnerships.

3.3.7 Agricultural Irrigation Program

(i) Objectives and Targets:

The objectives of the agricultural irrigation program are to: (i) operationalize public irrigation services in accordance with the responsibilities and challenges of the irrigation strategy framework at central and local level; (ii) expand the irrigated area; (iii) raise the level of utilization of irrigation networks and (iii)

strengthen the institutional irrigation capacity. The PNISA indicators were to expand the irrigated area by at least 50.0 thousand ha by the end of the PNISA period and strengthening institutional irrigation capacity from the current 60% to 80%. The institutional strengthen objective did not have explicit indicators with its respective targets. However, actions were described to be developed in order to promote institutional strengthen as follows: (i) establishment of a database, rules and regulations for the construction, operation and maintenance of irrigation networks, (ii) technical assistance to the National Irrigation Institute (INIR), functional institutional interaction mechanisms in the irrigation subsector, (iii) provision of incentives for teaching and research in water management techniques in agricultural production and aquaculture (iv) formulation of the national irrigation program (PNI), (v) development of irrigation studies, (vi) rehabilitation and construction of hydro-agricultural infrastructure, (vii) management of irrigation networks, (viii) promotion and conservation of surface and ground water resources for irrigation in drier areas, (ix) establishment of interventions to prevent spread of diseases associated with irrigation, (x) protection of perimeter irrigated areas against flooding, and (xi) promotion of low-cost irrigation systems.

i) Main Achievements/Results:

Regarding the expansion of irrigated area, from 2013 to 2016 INIR rehabilitated 21 irrigation systems and increased the number of irrigated land from 13.8 thousand ha in 2013 to 20.9 thousand ha in 2016, an increase of 50.7%. Despite this increase, there is still a significant shortfall towards achieving the PNISA targets (the actual 20.9 thousand ha in 2016 vs the PNISA target of 50.0 thousand ha by 2017). The indicator on strengthening institutional irrigation capacity from the current 60% to 80% was not assessed due to the lack of data. There is no evidence for the accomplishment of the majority of the proposed actions. For example, the INIR institutional set up is still not well represented since INIR is only established at national levels and it lacks financial and human resources as well as infrastructures in order to be established at provincial and district levels. At central levels, INIR is still facing shortage of human resources and therefore does not have directors for technical areas. However, during the studied period, INIR produced some rules and regulations for the construction, operation and maintenance of irrigation networks such as the norms for irrigators and national irrigation program.

ii) Key Gaps/Challenges:

The first gap under this program is the lack of the establishment of the indicators and the respective targets for the majority of its objectives, which make it difficult to assess the PNISA performance under this program. The second challenge is the significant under-funding, which constrained the implementations of the envisioned activities. Specifically, under this program, almost no funds were disbursed to implement its activities as the gap between budgeted and disbursed funds is over 90% in all years (Figure 19).

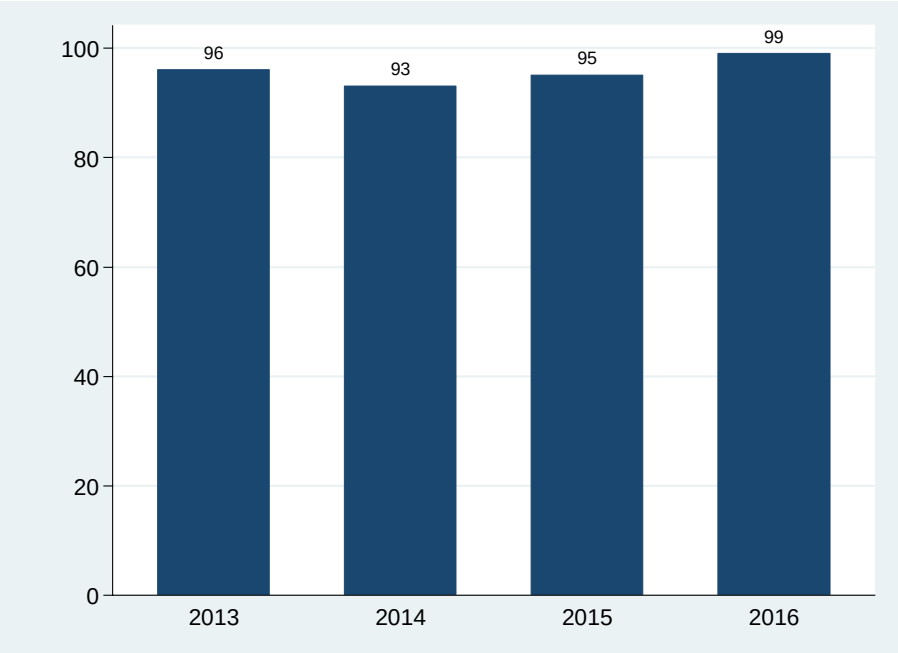


Figure 19 Gap between proposed and actual financing for the irrigation program

(iii) Priority Recommendations:

a) (CR) MASA to formulate realistic action plan (including realistic target) for closing the gap between the target value of area under irrigation and the actual value ensuring the required funding. This will require MASA to make realistic assumption on the role of private sector in the development of irrigation systems;

b) (CR) MASA to re-assess the unit costs of irrigation works, with the aim of developing efficiency-based unit costs, low-cost irrigation investment options, which together can increase the number of direct beneficiaries.

3.3.8 Agricultural Mechanization Program

(i) Objectives and Targets

The objectives of the agricultural mechanization program are to: (a) promote and consolidate institutional coordination between the stakeholders in the agricultural mechanization chain; (b) ensure that the productive sector has properly trained and qualified operators and technicians; (c) promote the grouping of agricultural production units around support infrastructure based on the ongoing agro-ecological zoning process; (d) allow agricultural producers to have access to more profitable markets, information and the skills to negotiate in order to ensure the return on invested capital. PNISA did not estipulate the indicators and the respective targets for achieving the objectives of this program. One key suggested indicator for this program is the increase in the area of the prepared land using machinery from the service centers.

(ii) Main Achievements/Results

The agricultural mechanization program is implemented through the established network of service centers. As of July 2017, there were established 134 agricultural service centers being 90 established by MASA and 44 established by the Zambezi Vale Development Agency. Among these service centers, 107 are managed by the private sector and 27 by the government. These service centers were equipped with 584 tractors with the respective agricultural implements among which 513 were provided by MASA and

71 by the Zambezi Vale Development Agency. The targets in terms of the creation of service centers as well as provision of tractors with their respective implements were not defined under PNISA, which makes it difficult to assess the PNISA performance under this component.

Regarding the second objective (ensure that the productive sector has properly trained and qualified operators and technicians), 542 machinery operators, 58 managers, 64 extension agents and 4 mechanics were trained in Mozambique. However, it is not possible to assess the level of accomplishment related to human resource training since PNISA did not establish the respective targets.

For the increase in the area of land prepared using the established service centers, the amount of land prepared using equipment of these service centers is not consistently recorded. As of July 2017, the Agricultural Development Fund (FDA) under MASA reports that the service centers prepared about 50.4 thousand hectares of land. The lack of targets using mechanization limits the assessment of this indicator.

(iii) Key Gaps/Challenges:

The first challenge in this program is the weak adherence of the beneficiaries to the services provided by the service centers. This is because the beneficiaries do not have purchasing power for paying the charged tariff for land preparation stipulated by the service centers. The tariff for land preparation was estimated by FDA to be 4,034.67 MT/ha, which seems to be high for smallholder producer. According to FDA, out of this amount, 44% correspond to the cost of fuel. The associated cost related to the services provided by the service centers coupled with the fact that the producers are disperse make the service centers to be not used at their fully capacity. Interviewed stakeholders reported that these centers are used at 10-15% of its potential capacity.

Furthermore, the existing human resources do not know how to operate the provided equipment and mainly seeders and auto-combiners and this fact yield the under utilization of some of the provided equipment. Finally, some service centers were established in the areas without complementary services such as gas station and sources of mechanical services and equipment and other centers are managed by individuals who are not in the agricultural business. These constraints limit the effective use of the centers for agricultural purposes. The lack of funds also limits the implementation of this program. Specifically, under this program, almost no funds were disbursed to implement its activities as the gap between budgeted and disbursed funds is over 90% in all years (Figure 20).

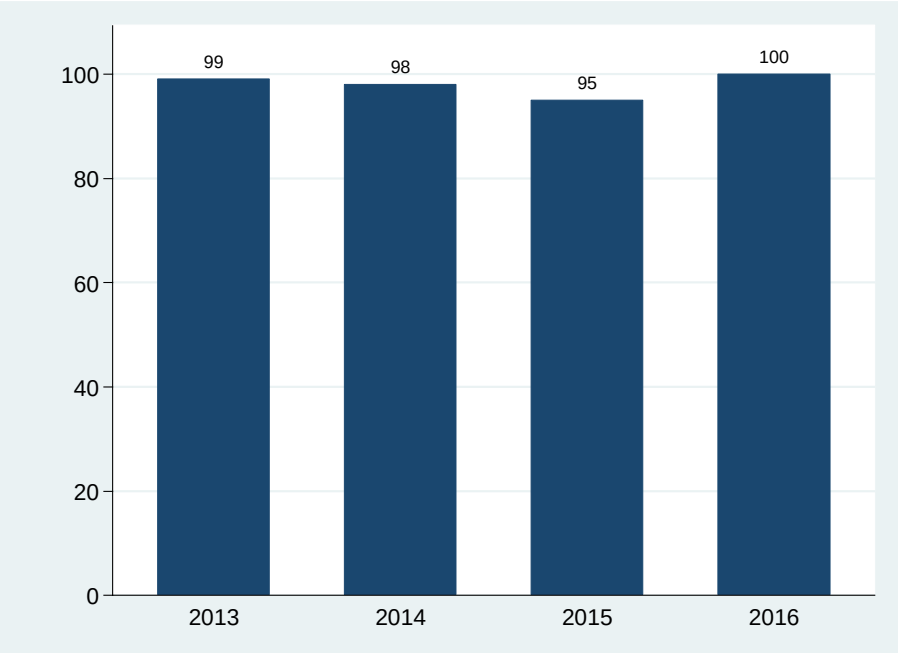


Figure 20 Gap between proposed budget and actual expenditure for the mechanization program

(iv) Priority Recommendations:

In order to improve the performance of this program, MASA should:

a) Establish indicators with the respective targets to facilitate M&E and mobilize funds for successfully implementation of the program;
b) Promote training for equipment operators and managers of the service centers,
c) (CR) Organize farmers in blocks to facilitate the use of machinery and extension services,
d) Conduct a willingness to pay study for the services provided by service centers and design action plan based on that study to promote competitiveness among service centers aiming to reduce the cost of the provided services,
e) (CR) Simplify the mechanisms for obtaining fuel subsidy, while developing more sustainable approaches to expand access of the services provided by service centers;
f) Promote mechanisms for the multiuse of the tractor as it can be used as energy source for irrigation,
g) Establish an environment for effective and efficient use of machinery parks. There are parks located in places without gas station and maintenance infrastructure.

Table 5 below summarizes the assessment of the core indicators under the result area 1.

Table 5 Summary of the assessment of core indicators under Result Area 1

Result Area 1 Indicators	Target at the end of PNISA (2017)	Main Trends, Gaps and Reasons	Rate
1. Crop productivity (MT/ha) (PNISA and MALABO) **(CORE INDICATOR)**			
Maize	To increase maize yield to 1.8 MT/ha using TP1 and to 2.5 MT/ha for using TP2 by 2017	No yield target specified on yearly basis, but only for end of period. Modest increases (1.1 MT/ha as average yield for cereals) and well below PNISA targets, although varying across provinces and farmers. Gaps due primarily to limited use of improved inputs, high dependence on rain-fed agriculture, and constraints in technology services (research-extension linkages, mechanization), financing and market access	
2. Access to yield enhancing inputs, services and technologies (PNISA and MALABO)			
2.1 % of farmers adopting improved technologies **(CORE INDICATOR)**			
b) Fertilizer	To increase % of farmers applying fertilizer from 10% in 2012 to 20% in 2017 (PNISA)	Significant shortfall in meeting the target (4.5% actual in 2015 vs 20%. target in 2017) due to various factors.	
2.2 Improved input consumption			
a) Fertilizer (kg/ha) PNISA/MALABO)	To increase applied fertilizer from 2kg/ha to 25Kg/ha by 2017 (PNISA). To increase fertilizer consumption to at least 50 kg/ha of arable land from 2015 to 2025 (MALABO).	Significant shortfall in meeting the target (3.7% vs. 25%) due to various factors.	
b) % of farmers having access to all sources of extension services (MALABO) **(CORE INDICATOR)**	No target (PNISA) All farmers with access to advisory services by 2018 (MALABO)	Significant shortfall between the MALABO target of coverage (100% by 2018 versus the trends of coverage (28.8% in 2016))	
4. Total number of extension agents **(CORE INDICATOR)**	Although being an important indicator determining the extent of coverage, PNISA did not establish this indicator and therefore its respective target	In general the number of extension agents is exhibiting a slight upward trend. However, the current number of extension agents is still significantly low to reach the for each extension agent cover the recommend number of producers (250 producers per extension agent)	
5. % of vaccinated cattle **(CORE INDICATOR)**	To increase the vaccination coverage from 65% to 85% in 2017	On track to meeting the target. A key challenge will be to ensure sustained improvements in the veterinary services, and expanded role of the private sector and farmer organizations.	
6. Number of baths per cattle per year **(CORE INDICATOR)**	To achieve 12 baths per cattle per year in 2017	Below the target but currently at 9 baths per cattle suggests progress towards achievement the target.	

7. Livestock indicators			
a) Animal weight (Cattle)	To increase the weight of the carcass from 140kg to 160kg in 2017 (PNISA)	From 2013-2016, Average weight per animal was 146Kg (2013-2016), which is lower than the target. Limited use of improved breeds coupled with use of traditional feeding methods (grass fed cattle) contributes negatively to the increase of the weight per animal.	
b) Chicken (million)	Establish 6 plants for processing and storing chicken with capacity of 30,000 chicks (PNISA)	Except one chicken processing plant was constructed in 2015 and therefore the PNISA target (construct 6 plants for reaching capacity of slaughtering 30,000 chicks) was not achieved.	
8. Volume of fish catch **(CORE INDICATOR)**	Production target of 30,000MT of aquaculture fish and no target for off-shore fish production (PNISA).	The available data show an upward trend for the aquaculture and off-shore fish production. However, the stipulated target for aquaculture fish production was over stated and it was not attained through PNISA.	
9. Irrigated area (PNISA and MALABO) **(CORE INDICATOR)**			
Cumulative (thousand ha)	To have 50,000 ha under irrigation by 2017 (PNISA). An increase by 100% by 2025 considering 2000 as the base year (MALABO).	There is a significant shortfall in meeting this target (20,000 ha. in 2016 vs. 50,000 has. by 2017), due primarily to shortfall in provision of financing, and also related due to delays arising from procurement processes and implementation capacities.	
10. Agricultural research			
No. of New/Improved Varieties Disseminated **(CORE INDICATOR)**	To release 20 crop varieties (4 with high nutritional potential), 2 chicken breeds with high productivity and tolerance to adverse weather condition, and 12 animal breeds (8 for cattle, 2 chicken and 2 goat breeds adapted to different agro-ecological conditions) (PNISA)	Target met: IIAM released 35 varieties. Target reached: IIAM released 35 crop varieties, 12 animal breeds (8 for cattle, 2 chicken and 2 goat breeds).	

3.4 Results Area 2: Expanded and Inclusive Access to Markets

The Market Access Result Area (RA) plays a pivotal role for Improving Production and Productivity (Result Area one) and Food and Nutritional Security (Result Area three) because improved market access will give incentives to farmers to market their additional gains from improved production and productivity, contributing to increased income, improved food and nutritional security, and the overall objective of reducing poverty. The Market Access result area consists of five programs: (i) Post-harvest management and marketing; (ii) Financial Services; (iii) Agribusiness; (iv) Rural Roads; and (v) Information System and Agricultural Statistics.

During the period 2013-2016, Figure 21 shows that actual expenditure never achieved 20% of the PNISA proposed budget for the Result Area expanded Inclusive Access to Markets. The gap between PNISA proposed budget and actual expenditure ranged from 92% in 2015 and 95% in 2016. This makes it difficult to achieve the objectives of this program.

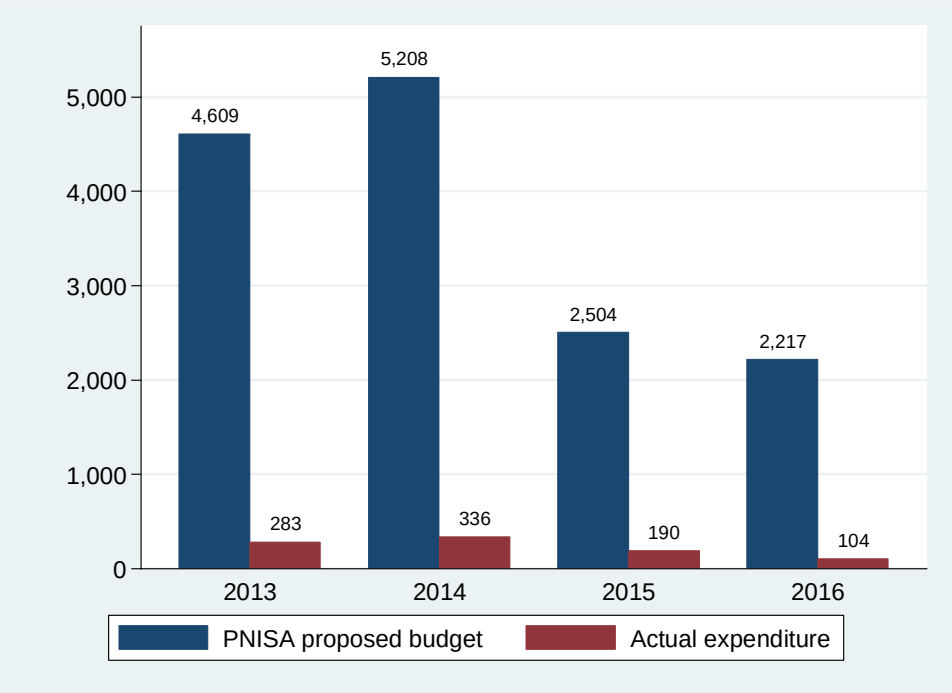


Figure 21 Comparison between PNISA proposed budget and actual expenditure on expanded access to markets

3.4.1 Post-Harvest Management and Marketing program

(i) Objective and targets:

The overall objectives of this program are to eliminate bottlenecks in the commercialization of agricultural commodities. The specific objectives of the program is to: (i) ensure creation, expansion and consolidation of infrastructure that facilitate agricultural commercialization, (ii) establish Mozambique Agricultural Commodities Exchange, (iii) promote actions to help development of agricultural processing, (iv) promote decentralized and inclusive participation in the commercialization, and (v) contribute to promotion and development of export of agricultural commodities. No specific PNISA targets were set for this program, making it difficult to assess whether progress was made towards achievement of targets.

(ii) Main achievements/results:

Data from National Agricultural Surveys (IAI) show that proportion of smallholder farmers who sell their production increased from 5% in 2013 to 12% in 2015 for rice and 21% in 2013 to 36% in 2015 for beans, while it remained basically stagnant at about 15% for maize (see Figure 22). This figure also shows that over the same period, sales as share of production among farmers who sell their production registered a downward trend for all three commodities, declining from 49% to 40% for maize, from 46% to 38% for rice, and from 79% to 56% for beans. This reduction in sales share of production could be related to two main factors. First, vast majorities of farmers are net buyers (purchases larger than sales) of those commodities, especially maize and rice. Second, during the period 2013 to 2016, agricultural commodities prices rose sharply, coupled with higher price variability, rapid depreciation of MZN, and limited farmers' storage capacities. Data from the Ministry of Industry and Trade (MIC) point out that during the period 2013 through 2016, average retail prices considerably increased from 29 to 42 MZN/Kg for maize flour, from 11 to 17 MZN/Kg for maize grain, and from 26 to 39 MZN/Kg for rice. Retail price variability, measured by standard deviation, also registered sizeable increases during the same period: by 39% for maize meal, by 149% for maize grain, and by 202% for rice. On the other hand, data from IAI 2015 show that only 53% of farmers had some place to store their production during the agricultural season 2014/2015. Among those who had some type of storage facilities, only 15% had improved storage. In the agricultural season 2014/2015, 38% of farmers indicated that they had commodities (cereals and cassava) stored from the previous season.

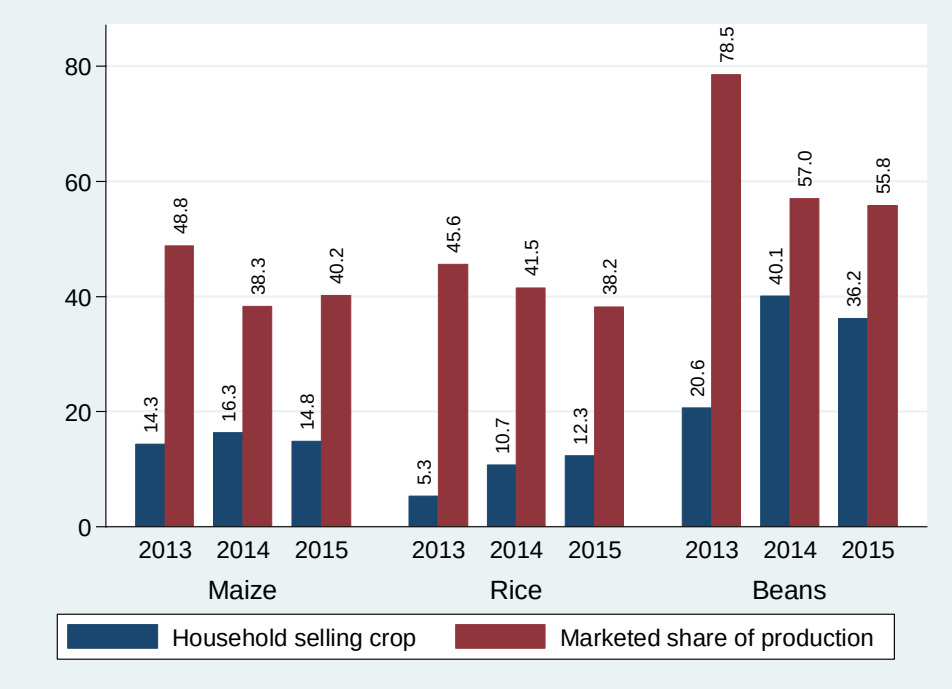


Figure 22 Sales of selected agricultural commodities by smallholder farmers

Mozambique Agricultural Commodity Exchange (BMM) was established in October 2012 to help improve efficiency and transparency of agricultural markets. With the establishment of BMM, seven silos and storage facilities have been built in six provinces (Niassa with one, Cabo Delgado with two, Nampula with three, Zambezia with four, Tete with four and Sofala with four). Those silos have a total capacity to

store 31 thousand MT. This storage capacity represents about 25% of total maize sold in the agricultural season 2014/2015. Other services provided in these facilities where silos are built include cleaning and grading. Given limited storage capacities at farm levels, farmers might take advantage of the silos to store their production during the harvesting season when prices are lower and sell later in the season when prices are higher. Farmers could also take advantage of cleaning and grading services, increasing the quality of their commodity and corresponding price premium for higher commodity quality. Furthermore, after storing the commodity in the silos, farmers receive warehouse receipts which are used as collateral to request financing from the bank. However, our provincial visits revealed that the silos are underutilized. Among other factors, some farmers who were interviewed during provincial visits indicated that they do not store their commodities in public silos because BMM require many documents which farmers do not have.

(iii) Key gaps and challenges:

Figure 23 below shows that during the period 2013-2016, expenditure on this program represented less than 10% of PNISA proposed budget. With this substantial gap, achieving any meaningful target would be difficult.

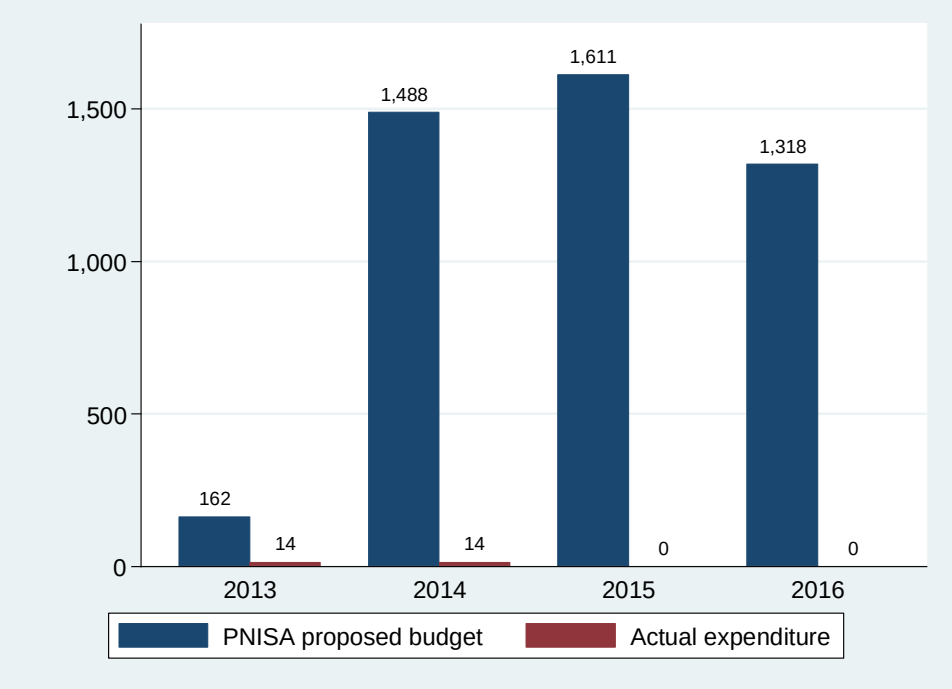


Figure 23 Comparison between PNISA proposed budget and actual expenditure on post-harvest management and marketing

(iv) Priority recommendations:

a) (CR) MASA to increase storage capacities and improve post-harvest technologies at HH and community level;
b) (CR) Increase actual expenditure on this program given its pivotal role in increasing farmers' income and consequently reducing poverty;
c) (CR) MASA, in collaboration with MIC, develop a strategy and supporting action plan which would promote inclusive and competitive small and medium-scale agro-processing enterprises and post-harvest technologies.

3.4.2 Financial Services Program

(i) Objectives and Targets:

The objective of this program is to play a catalytic role in broadening the reach of digital payment systems, particular in poor and rural areas, and to expand the range of services available on those platforms. Given that PNISA did not set specific targets to this program, it is impossible to assess progress towards achieving PNISA targets.

(ii) Main Achievements/Results:

The vital role of financing for food, agriculture and rural development is widely recognized, especially in countries – like Mozambique – where agriculture is the main pillar of economy. This is because investments are needed to improve smallholder farmers' production and productivity, coupled with development of infrastructure to increase trade capacities and enhancements in post-harvest technologies including agro processing at both farm and community levels. Empirical evidence highlights that financing of agriculture, especially small- and medium-scale enterprises, is essential for promoting growth in agriculture and non-agriculture sectors through multiplier effects. World Economic Forum document that access to financing is the most problematic factors for doing business in Mozambique during the period 2013-2017 (see Figure 24). Other most problematic factors for doing business include corruption, inefficient government bureaucracy, and inadequate supply of infrastructure.

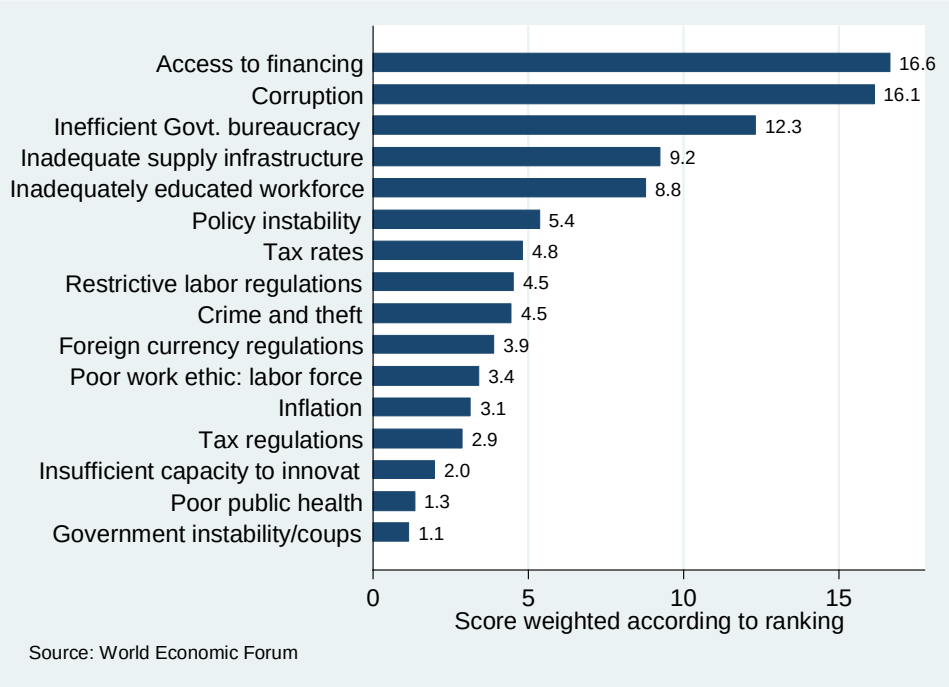


Figure 24 Most problematic factor for doing business in Mozambique: 2013 - 2017

Data from Mozambique Central Bank – referred to in Mozambique as *Banco de Moçambique* (BM) – indicate that credit to the economy as a whole more than doubled, increasing from 1,446 billion MZN in

2013 to 2,974 billion MZN in 2017 (see Figure 25). The same figure shows that during the same period, credit allocated to the agriculture sector almost doubled, jumping from 58 billion MZN to 111 trillion MZN. We point out that credit to agriculture sector as a share of total credit ranged from 2.6% in 2015 to4.0% in 2013, with no clear trend, during the period spanning 2013 to 2017. The most important subsector of the agriculture sector in terms of contribution to total loan allocated to the agriculture sector include crops with 65%, fishery with 21%, Livestock with 8%, and forestry with 6%. Among crops, the most important ones are sugarcane (9%), cotton (9%), tea (8%), and cashew nut (5%). This suggests largest proportion of credit disbursed to the agriculture sector is allotted to cash crops.

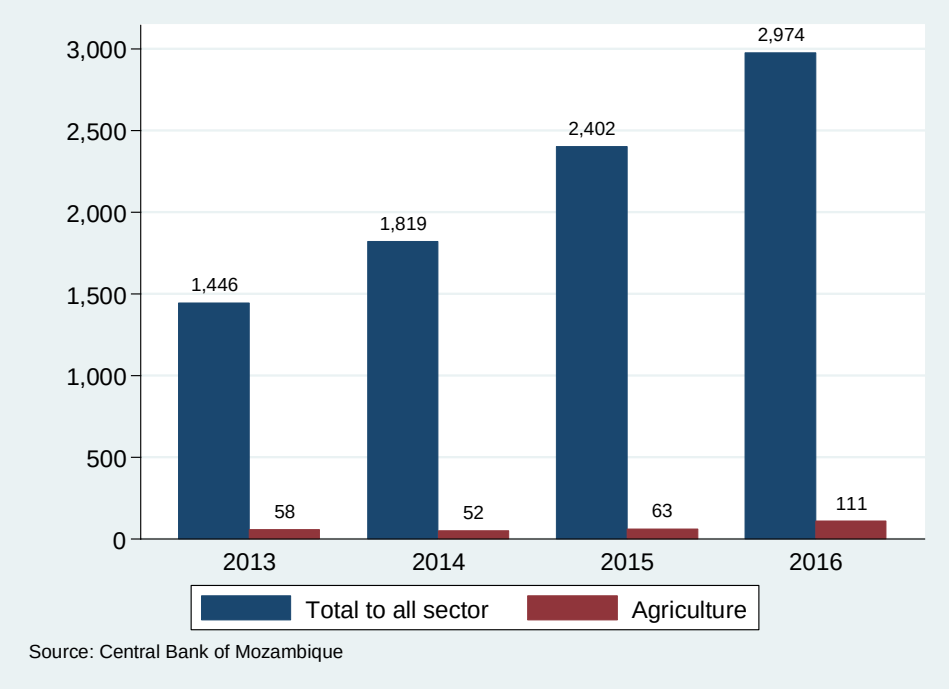


Figure 25 Trends in loans to the economy

The number of private financial institutions' branches increased from 502 in 2012 to 612 in 2014, remaining at 602 in 2015. Maputo city, the capital of Mozambique, is undoubtedly the province with the largest number of branches: 210 out of 612 in 2015; similar patterns are observed in other years. Excluding Maputo city, the branches are almost evenly distributed across the three region of the country: Northern Mozambique with 144 branches, Southern Mozambique with 136, and Central Mozambique with 122. The largest increase in the number of branches was registered in Northern Mozambique where it increased by 44% from 100 in 2012 to 144 in 2015; compared with 21% increase in Southern Mozambique and 17% increase in Central Mozambique. This might signal the intention to increase financial services in regions with higher potential for agricultural production. Apart from credit from national financial institutions, inflow of Foreign Direct Investment (FDI) is also registered. Data from BM show that inflow of total FDI dropped steadily by 49.9% from 6.2 billion USD in 2013 to 3.1 billion USD in 2016; compared with 38.6% fall in inflow of FDI for agriculture from 116.0 million USD to 71.2 million USD during the same period. This could be attributed to the financial crisis faced by Mozambique starting in 2015 as discussed earlier.

Data from MASA indicate that in 2016, 14 official institutions, including MASA, provide credit for the agriculture sector with interest rate varying from 0% to 60%. During the period 2013-2017, apart from private banks (BCI, BIM, *Banco Terra* and Standard Bank), farmers can access financing through public

and private institutions and nongovernment organizations (NGOs) such as, but not limited to, Agricultural Development Fund (FDA), District Development Funds (FDD), Agriculture Promotion Centre (CEPAGRI), Cabinet for Promotion of Investment (GAPI), Investment Promotion Centre (CPI), Institute for Promotion of Small and Medium-scale Enterprises (IPEME), Africa Management Services Company (AMSCO), *Caixa Comunitária de Microfinanças* (CCOM), Support to Private Sector Initiatives in the Agriculture Sector (ADIPSA), and Enterprise Fund for Portuguese Cooperation (FECOP).[9] Some promising examples include:

- Pro-Poor Value Chain Development Project in the Maputo and Gaza corridors (PROSUL), coordinated by CEPAGRI and targeting 20 thousand households, promotes access to timely and adequately financial services in 19 districts in Southern Mozambique (Maputo province with six districts; Gaza province with eight and Inhambane province with five).[10] About 33% of the total PROSUL's budget estimated at 44.95 million USD for the period 2013-2019 was allocated to provision of financial services. Another initiative promoted by PROSUL includes development of four value chains which structured in five programs with 14.5 million USD for financial services component;
- Rural Market Promotion Program (PROMER), coordinated by the Ministry of Economy and Finance (MEF), aims at improving livelihoods of smallholder farmers located in Northern Mozambique focusing on the Nacala corridor. It targeted to benefit 20 thousand households and to cover 15 districts (Niassa province with six districts, Cabo Delgado with five, Nampula with two, and Zambezia with two).[11] Under the component of market environment, PROMER aims at providing technical assistance to improve bankability of value chain participants, providing training to farmers associations and trades about rural financing, supplying short-term institutional support to financial institutions development, and promoting expansion of financial services in PROMER target districts. PROMER is also promoting value chain development through matching grants;
- FDA in partnership with two private banks (BCI and BIM) established two revolving credit lines with bona fide interest rate of 10% per year: One for the fresh vegetables sector with funds of 28.0 million MZN covering three provinces (Maputo, Inhambane and Gaza) and the other for the poultry sectors with funds of 49.5 million MZN covering Maputo province and Maputo City;

Despite the above described some progress in terms of coverage of financial institutions (amount loaned and number of branches), access to financing in Mozambique is limited. Proportion of farmers who have

[9]Government of Mozambique closed CEPAGRI in 2016 and transferred its mandate to FDA.

[10]PROSUL promotes development of three value chains and consists of five components, namely horticulture, cassava, red meat, financial services, and institutional support. PROSUL covers 19 districts: Moamba, Marracuene, Namaacha, Boane, Manhica and Magude in Maputo province; Xai-Xai, Manjacaze, Chokwe, Guija, Chibuto, Chicualacuala, Massingir and Mabalane in Gaza province; and Zavala, Inhambane, Jangamo, Morrumbene and Massinga in Inhambane province. PROSUL is funded by four main institutions: Government of Mozambique, International Fund for Agriculture Development (IFAD), Spanish Food Security Co-financing Facility Trust Fund, and Adaptation for Smallholder Agriculture Program.

[11]PROMER with total estimated budget of 40.6 million USD for the period 2009 through 2020 comprises five components, namely Support to input and output traders, enterprise-led value chain initiatives, improving the market environment, nutrition promotion, and institutional support. Districts covered by PROMER include Cuamba, Mandimba, Marrupa, Maua, Mecanhelas and Metarica in Niassa province; Ancuabe, Balama, Chiure, Montepuez, and Namuno in Cabo Delgado province; Malema and Ribaue in Nampula province; and Alto Molocue and Gurue in Zambezia province. PROMER with life span from 2009 through 2020 is co-financed by four main institutions: Government of Mozambique, International Fund for Agriculture Development (IFAD), the Alliance for Green Revolution in Africa (AGRA), and European Union.

access to financial services is very small. Data from TIA and IAI show that the share of farmers with access to financial services declined from 1.8% in 2013 to 0.6% in 2015; consistent with findings from Fanta et al (2017) indicating that only 1.0% of small- and medium-scale enterprises (SMSE) had access to formal credit in 2012. This is extremely low by any standards and suggests that access to financial services is among the major constraints faced by farmers, especially in rural areas. Informal sources are the main channel through which SMSE have access to financing as Fanta et al (2017) documented that 2.8% of SMSE obtained credit from informal sources, compared with 1.0% from formal sources.

(iii) Key Gaps/Challenges:

Lack of financial services in rural areas and high lending interest rates are among the key challenges for this program. Data from BM indicate that annual average interest rate for lending money from banks for one-year maturity jumped from 20.3% in 2013 to 29.0% in 2017. This high interest rates coupled with informality of large share of SMSE and lack of financial institutions especially in rural areas could be one of the reasons why large proportion of SMSE opt for informal sources. Other challenges include higher risk of the agriculture sector, lack of collaterals, low loaned amount, and high default rates.

(iv) Priority Recommendations:

a) MASA, in collaboration with BM and IPEME, to provide incentive and enabling environment (such as provide credit line at discounted lending interest rates and matching funds) to encourage financial institutions to expand credit to agriculture sector including SMSE and financial services to rural areas based on agricultural potential;

b) MITADER, in collaboration with MASA, to promote timely emission of DUATs and to allow land owned by smallholder farmers be used as collateral;

c) MASA to coordinate with BM to create an action plan for creating enabling environment to promote FDI for the agriculture sector;

3.4.3 Agribusiness support program

(i) Objectives and Targets:

This program aims at increasing the contribution of the agribusiness to the national agricultural (including fisheries) production; increasing value addition of agricultural commodities including fisheries resulting in increased share of the agricultural sector in the Gross Domestic Product (GDP); diversifying export of agricultural commodities; and reducing dependence to imports of agricultural commodities. No specific PNISA targets were set, making it impossible to evaluate whether PNISA targets were met.

(ii) Main Achievements/Results:

Real GDP increased from 367.9 billion MZN in 2012 to 468.8 billion in MZN in 2016, growing an average annual growth rate of 6.2%. On the other hand, over the same period, real agriculture GDP jumped from 93.6 billion MZN in 2012 to 104.6 billion MZN in 2016, with annual growth rate of 2.9%. Real agricultural GDP as a share of total GDP steadily dropped from 25.4% (24.2%) in 2012 (2013) to 22.3% in 2016. This suggests that although specific PNISA target was not set, PNISA target of increasing agriculture share of total GDP was not met.

Mozambique is net importer of goods. During the period 2013 to 2016, net export of goods was always negative (meaning that imports outweighs exports), ranging between -4.0 billion USD in 2012 and -1.4 billion USD in 2016 (see Figure 26). Net export trended downward between 2013 and 2016, with the highest drop of 2.8 billion USD registered between 2015 and 2016. This shortening of the gap between export and import over time results from decreases in both export and import. Export smoothly dropped from 4.1 billion USD in 2013 to 3.3 billion USD in 2016, compared with a sharp decrease in import from 8.5 billion USD to 4.7 billion USD over the same period. This rapid fall in import could be associated with rapid devaluation of MZN as discussed earlier. Although no specific PNISA target was set, progress

was made towards reducing the gap between export and import. Agriculture with 13.2% ranks third in terms of average contribution to total export; after extractive industry with 33.1% and processing industry with 28.4%. One of the PNISA objectives for this program was to diversify export of agricultural commodities. We computed Herfindahl-Hirschman Index (HHI) to get an indication of concentration of export of agricultural commodities. Monthly average HHI steadily increased from 34.2% in 2013 to 46.4% in 2015; and it then dropped to 43.4% in 2016; with an average of 41.1% over the period 2013 to 2016. This indicates high concentration of export of agricultural commodities. Looking at individual commodities, we point out that four commodities account for 80.3% of total export of agricultural commodities during the period 2013 through 2016: tobacco with 43.5%, sugar with 18.8%, cotton with 11.0%, and banana with 7.0%. With similar patterns across years. This suggests that no progress was made towards achieving PNISA target although no specific PNISA target was set.

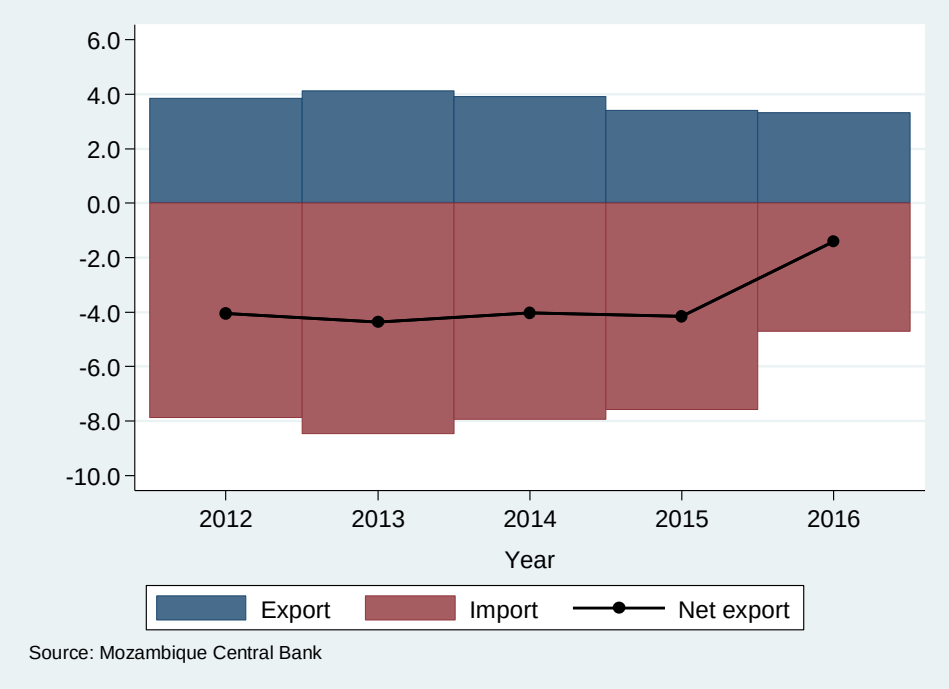


Figure 26: Net export of goods during the period 2012 through 2016

Some initiatives to development and strengthen some value chains have been put forth by MASA and other institutions. Promising examples, but in its incipient stages, include:

- Starting in 2016, MASA is drafting its National Youth in Agriculture Incubation Program (NYAIP). This program aims to increase incomes through youth's skills development and access to resources (land, agricultural inputs, finance, equipment, etc.) coupled with promotion of small and medium enterprises (SME) for youth;
- PROSUL covering 19 districts in the Maputo and Gaza corridors promotes three value chains: horticulture, cassava and red meat in 19 districts;
- PROMER covering 15 districts in the Nacala corridor promotes four value chains: cassava, sesame, beans and groundnuts;

- MASA provided funding to build 29 greenhouses for fresh vegetables growers in seven provinces: 14 greenhouses in Maputo, four in Gaza, two in Tete, two in Manica, three in Zambezia, two in Nampula, and two in Cabo Delgado;
- MASA financed construction of cold storage with capacity of 40 MT for Center for Value Addition of Agricultural Commodities (CAVA) in Maputo province;
- MASA provided favorable recommendation for nine agricultural enterprises which submitted applications to MEF to benefit from bona fide diesel prices in 2016: All nine enterprises were granted the bona fide diesel prices. It appears that few agricultural enterprises are aware of the existence of the bona fide prices for diesel and electricity. In 2016, MASA in collaboration with MEF organized one workshop, in which 32 agricultural enterprises participated, to increase awareness of the existing (including procedures to access) bona fide prices of diesel and electricity;
- Under the Private Sector Investment Program, Mozambican and Danish governments designed a program to support development of agricultural business in Mozambique. The program known as *AGRO-INVESTE* spans five years (2013 through 2017) with a budget of 33.1 million USD and has three components:
    - Strengthening of agricultural private sector, managed by GAPI, provides loans, technical assistance and training. This component has three subcomponent:
        - Provision of credit to promote and develop agricultural value chains except those strongly related to forestry;
        - Promotion of youth agribusiness entrepreneurship: training and technical assistance provided by higher education institutions to strengthen youth agribusiness entrepreneurship, coupled with credit to kick start agribusiness enterprises;
        - Agribusiness risk sharing: partnership with private bank to share risk in agribusiness related investments;
    - Loan guarantee fund managed by GAPI and implemented in partnership with private banks;
    - Strengthening MASA's institutional capacity to promote and create enabling environment for flourishing agricultural private sector;
- MASA provides technical assistance in the preparation of business plans by the private sector, especially for the following commodities: sugarcane, maize, rice, soybean, sesame, and fruits and vegetables;
- National Fund for Sustainable Development SUSTENTA, coordinated by MITADER, aims at integrating smallholder farmers into sustainable agriculture- and forest-based value chain development.

(iii) <u>Key Gaps/Challenges:</u>

Coordination between MASA and MITADER, the two major actors in the value chain development is the key challenge in order to take advantage of synergies to create a well-functioning agribusiness value chains with strong and inclusive participation of the private sector. Bureaucratic procedures and processes for agricultural enterprises to benefit from bona fide prices for diesel and electricity is another challenge.

(iv) Priority Recommendations:

a) MASA to collaborate with MITADER to build a clear action plan to strengthening sustainable agriculture- and forest-based value chain development with inclusive private sector participation;

b) MASA in collaboration with MEF to have simplified procedures to facilitate access to bona fide prices of diesel and electricity by agricultural enterprises;

3.4.4 Rural Roads Program

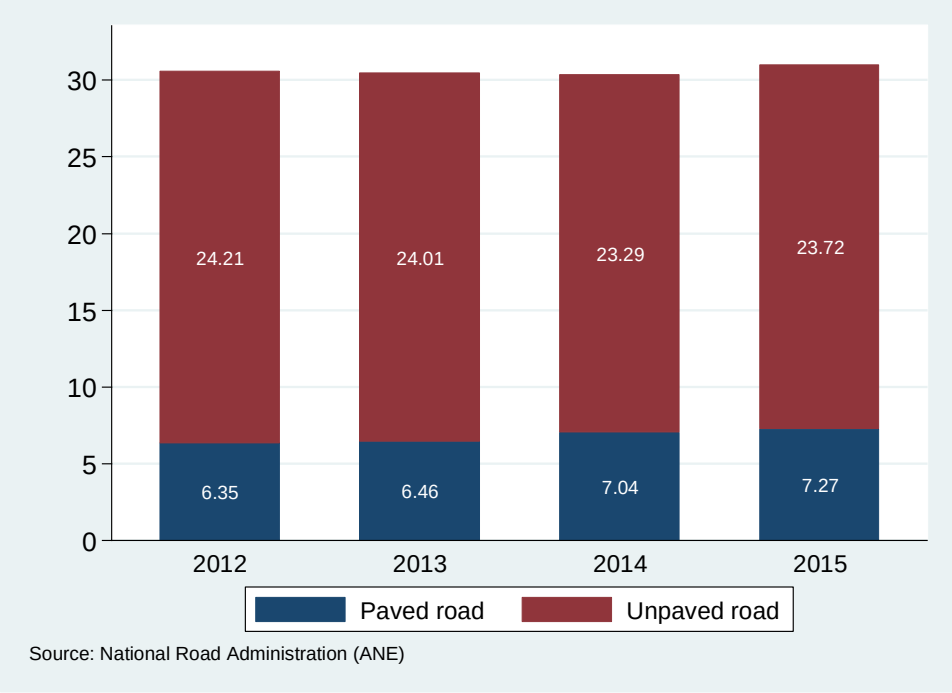
(i) Objectives and Targets:

The objective of this program is to maintain, improve, and build road network (tertiary, vicinal and unclassified roads) linking areas with agricultural, tourism, industrial and natural resource potential to consumption markets throughout the country. This program will be implemented in close collaboration between MASA and the National Road Administration (commonly known by its Portuguese acronym ANE) of the Ministry of Public Works, Housing and Water Resource. Under this program, MASA and ANE will identify some rural roads (or portions of rural roads) to be maintained and built by province- and district-level governments, leading to decentralization. PNISA specific targets for this program were not specified, making it difficult to assess whether progress towards achieving those targets was made.

(ii) Main Achievements and Results:

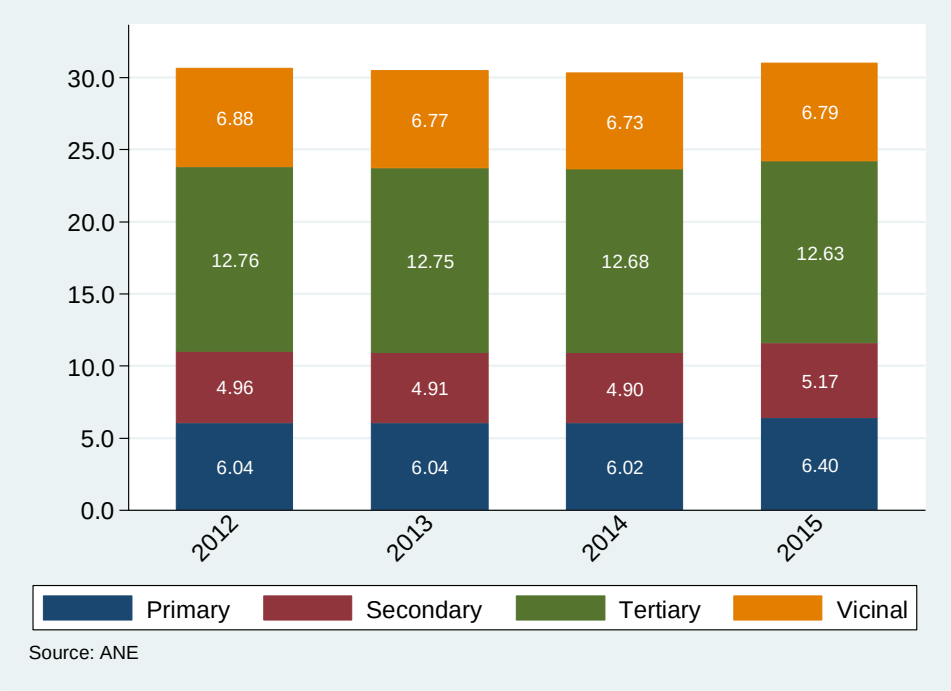
Data from National Road Administration (ANE) show that road extension increased from 30.56 thousand in 2012 to 30.98 thousand kilometers in 2015. Over the same period, in any given year, unpaved roads comprise about 77% of the total classified roads. However, the share of classified roads accounted for by unpaved roads declined from 79.3% in 2012 to 76.6% in 2015. Paved roads increased from 6.35 thousand in 2012 to 7.27 thousand kilometers in 2015, representing an increase of 14.5% (see Figure 27). This improvement could contribute to improved access to market through reduced transaction costs to move commodities from production to consumption hubs. However, we cannot assess whether PNISA target were achieved because specified PNISA targets were not set. When looking at region patterns during the period 2012 through 2015, the data from ANE show that paved roads increased by 36.7% from 1.76 to 2.41 thousand kilometers in Southern Mozambique, increased by 10.7% from 2.53 to 2.80 thousand kilometers in Northern Mozambique, and registered no change in Central Mozambique remaining at 2.06 thousand kilometers. This indicates that largest improvements in paved roads were observed in Southern Mozambique, suggesting that this region could have experienced largest strengthening of market access despite lower agricultural potential and production compared to Northern and Central Mozambique.

Figure 28 shows trends in classified roads by type of road. This figures illustrates that vicinal roads decreased from 6.88 thousand kilometers in 2012 to 6.79 thosuand kilometers in 2015 and tertiary roads reduced from 12.76 thousand in 2012 to 12.63 thousand kilometers in 2015. By contrast, during the same period, both secondary and primary roads increased from 4.96 thousand kilometers to 5.17 thousand kilometers and from 6.04 thousand kilometers to 6.4 thousand kilometers, respectively. These figures suggest that road construction and maintenance have focused on primary and secondary roads network, contributing to strengthening road linkages between production and consumption zones and indirectly improved access to markets. During the period spanning 2012 through 2015, data from ANE also show that primary roads increased by 32% from 1.16 thousand kilometers to 1.53 thousand kilometers in Southern Mozambique, reduced by 0.5% from 3.24 thosuand kilometers to 3.28 thousand kilometers in Northern Mozambique, and did not change – remaining at 1.64 thousand kilometers – in Central Mozambique. Similar regional patterns are seen for secondary roads. This suggests that Southern Mozambique is the region that contributed to the increase in primary and secondary roads.



Source: National Road Administration (ANE)

Figure 27 Trends in classified roads in Mozambique



Source: ANE

Figure 28 Trends in classified roads by road type

(iii) Key gaps and challenges:

Data show relatively little improvement in the road network, especially primary and secondary roads, in Central and Northern Mozambique while those are regions with high potential for agricultural productions. Provincial visits also revealed little coordination between MASA, ANE and the Ministry of Transport and Communication (MTC) in prioritizing road networks to be constructed and maintained.

(iv) Priority Recommendations:

a) (CR) ANE, in collaboration with MASA, to prioritize expenditures for rural paved roads in areas with "high" agricultural potential, and rural roads which connecting production areas to populated consumption centers;
b) (CR) ANE to improve coordination mechanisms and processes between MASA and the Ministry of Transport and Communication in determining priority road networks (with convergence on prioritization criteria) to improve market access in areas with agricultural potential and linking those area with consumption hubs.

3.4.5 Agricultural Statistics and Information Systems Program

(i) Objectives and Targets:

This program aims at establishing an agricultural statistics system to respond to current and emerging data demand from various players (government, academia, development partners, etc.); integrating agricultural statistics into the national statistics system managed by the National Statistics Institute (INE); ensuring sustainability of the agricultural statistics systems by promoting agricultural statistics governance, training and capacity building; establishing an integrated framework for agricultural statistics; promoting evidence-based policy formulation at all levels (central, provincial and district); and improving coordination between various actors feeding the information system. PNISA did not set specific targets for this program, making it difficult to assess whether targets were achieved or not.

(ii) Main achievements and results:

MASA had two data collection systems, namely *Aviso Previo* (Early Warning) and *Trabalho de Inquerito Agricola* (TIA). *Aviso Previo* collected data without following rigorous statistical procedures, while TIA was a nationally representative survey following rigorous statistical procedures. Data collected under those two data collection systems (*Aviso Previo* and TIA) were inconsistent: delivering very different estimates for the same variable for example crop production. Therefore, the data collection systems were consolidated into one, named *Inquerito Agricola Integrado* (IAI), a nationally representative survey, collecting data in two phases: at the beginning of the agricultural season for forecasting and towards the end of the season for estimation of quantities produced and sold.

TIA data were collected for many years (2002, 2003, 2005, 2006, 2007, and 2008), however, the first Agricultural Statistical Year Book was only published in 2014. The second Agricultural Statistical Year Book was published in 2016 covering the period 2012 to 2014. These publications make the results from national agricultural surveys easily available to the public and policy makers.

(iii) Key gaps and challenges:

Two drawbacks of the data collected could be advanced: income data are not collected every round of the survey and panel data were collected in only two rounds (2002 and 2005). National agricultural surveys (TIA/IAI) collect data on asset ownership every round of data collection, but collection of income data would be useful to monitor progress toward achieving overall PNISA objective of increasing farmers' income. However, it is worth pointing out that collecting income data and panel data require additional funding which has been limited. Figure 29 below shows that actual expenditure on agricultural statistics and information systems never matched PNISA proposed budget. The gap between PNISA proposed

budget and actual expenditure varied between 23% in 2013 and 68% in 2016. We note that this program registered smallest gap compared to other programs under the Result Area two (Expanded and Inclusive Access to Markets).

(iv) Priority Recommendations:

a) (CR) MASA, in collaboration with INE, to utilize data collected through TIA and IAI to strengthen evidence-based policy formulation;
b) (CR) Collect through TIA and IAI income data more frequently to help monitor income at household level and assess impact of various policy options, contributing to evidence-based policy formulation;
c) (CR) MASA to develop a roadmap to strengthen and expand the existing agricultural data collection frameworks, to include additional key data, such as post-harvest losses; sustainable land management; climate change resilience, with the aim of supporting improved evidenced-based decision–making;
d) (CR) MASA to help mobilize additional funding to support regular collection of required data to feed the key indicators of the PNISA Results Framework and the MALABO requirements;

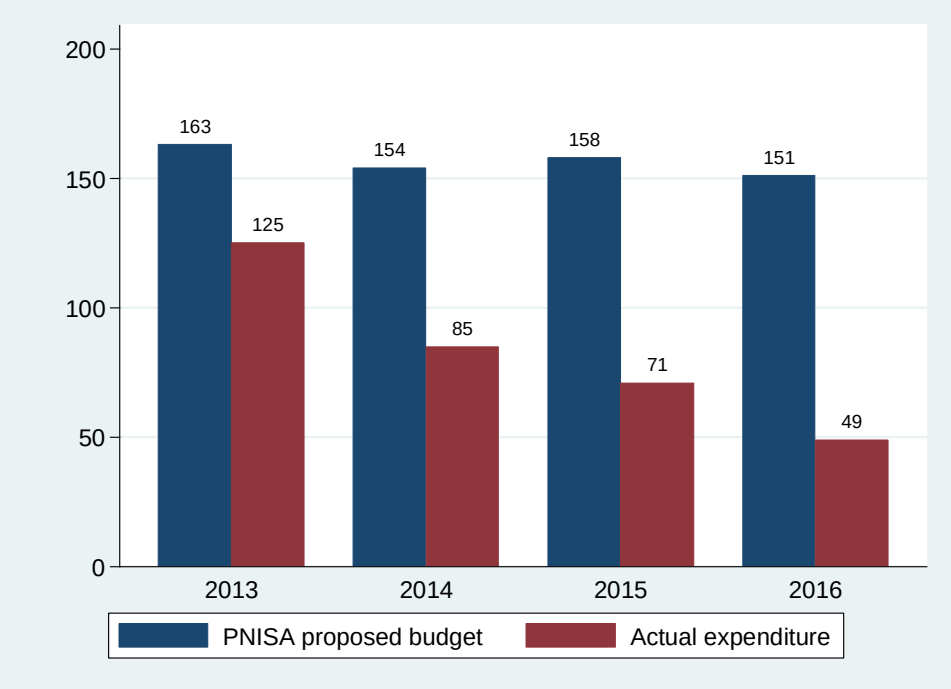


Figure 29 Comparison between PNISA proposed budget and actual expenditure on agricultural statistics and information systems

Table 6 below summarizes the assessment of the core indicators for result area 2.

Table 6 Summary of the assessment of core indicators under Result Area 2

Core indicators	Target at the end of PNISA (2017)	Main Trends, Gaps and Reasons	Rate
1. Farm gate price as % of wholesaler Price (PNISA and MALABO)	No target (PNISA) To reduce the gap between the wholesaler price and the farm gate price by 50% by the 2025 (MALABO)	Existence of multiple systems and sources of agricultural price data utilizing different methodologies (example: SIMA and MIC). Although the available data suggest that farmers are receiving a high proportion of the retail prices, the overall knowledge suggest that this high ratios are misleading and therefore need to be re-assessed with more reliable information.	
2. % of post-harvest losses: For the 5 national priority commodities (MALABO) **(CORE INDICATOR)**	To decrease by 50% the current levels of post-harvest losses by 2025 (MALABO). The Operational Plan for Agricultural Development (PODA) indicate a current 24% of post-harvest losses to be decreased to 12% by 2019.	Lack of data to assess whether progress was made. Isolated studies indicated that post-harvest losses ranges from 15% to 30% in the country.	
3. Expanded PPPs: Number of priority agricultural commodity value chain for which PPPs were established with strong linkage to smallholders (MALABO) **(CORE INDICATOR)**	To establish and strengthen inclusive PPPs for at least 5 (Rice, maize, cassava, poultry, cotton and cashew nut) priority agricultural commodities value chain with strong linkages to smallholders by 2025 (MALABO)	PNISA did not include any proposed actions for establishing and strengthen PPPs. However, Mozambique approved Law N.15/2011 to formally constitute and operationalize PPPs and accordingly the government through MASA and MITADER has been involved in efforts to attract the private sector to be more involved in PPPs. MASA through PODA identified 15 value chain and seven of them are being developed in the six development corridors. Also de MASA M&E system does not include indicators to truck progress on PPPs development and implementation.	
4.Trade facilitation index (MALABO) **(CORE INDICATOR)**	To have fully established trade facilitation measures by reaching a 100% of trade facilitation index (TFI) by 2025 (MALABO)	Given limited data, it has not been possible to generate the trade facilitation index for 2016. MASA has not included in its M&E system the data collection, analysis and utilization of trade facilitation index. The current TFI is little more than half way to meet the MALABO target (55% in 2016).	

3.5 Results Area 3: Improved Food and Nutritional Security

The Improved Food and Nutritional Security result area consists of two programs: (i) Multisectorial Monitoring and Coordination of Food and Nutritional Security and (ii) Improving Access to and Utilization of High-nutritional Foods.

Figure 30 show PNISA proposed budget and actual expenditure on Improved Food Security and Nutritional Security result area. This figure shows considerable gap between PNISA proposed budget and actual expenditures (482.9 billion MZN versus 101.3 billion MZN). This gap declined considerably from 94% in 2013 to 53% in 2015; then it increased to 77% in 2016. Despite this sizeable decline the financing gap, shortfalls in funding, appears to be an important factor constraining achievement of any PNISA target.

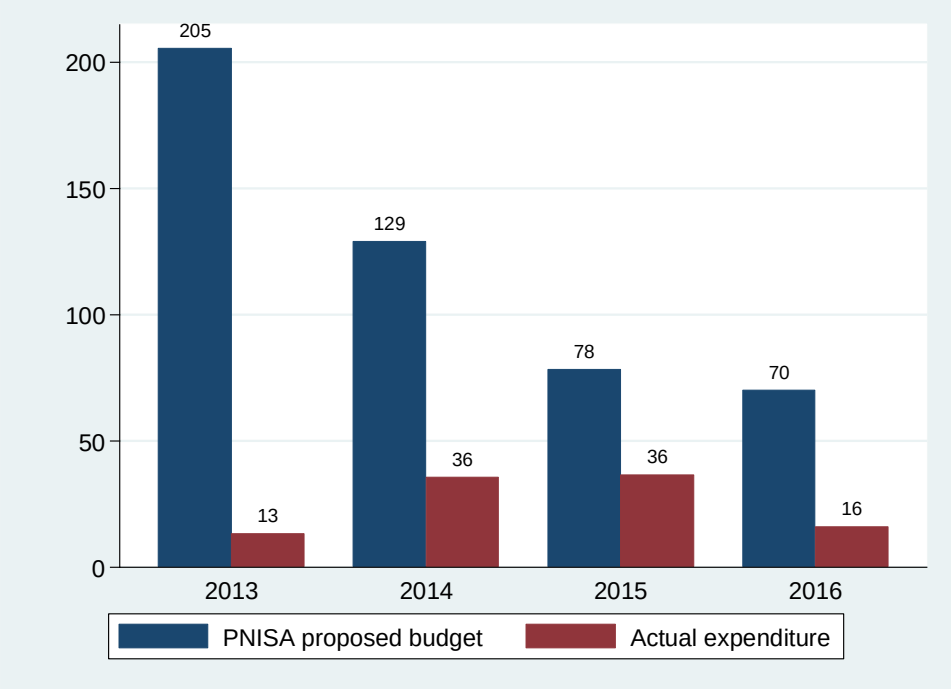


Figure 30 PNISA proposed budget and actual expenditure on food and nutritional security result area

3.5.1 Multisectorial Monitoring and Coordination of Food and Nutritional Security Program

(i) Objective and targets:

The objective of this program is to strengthen multisectorial coordination of food and nutritional security. No specific PNISA targets were set for this result area, making it difficult to assess whether progress was made towards achievement of targets.

(ii) Main achievements/results:

Several initiatives have been put forth by SETSAN to improve food and nutritional security in Mozambique. These initiatives include evaluation of achievements under the Second National Strategy for Food and Nutritional Security (ESAN II) spanning 2008 through 2015; formulation of the Third National Strategy for Food and Nutritional Security (ESAN III); partnership with various development

partners (FAO, IFAD, UNICEF, WFP, WHO, USAID, and others) to improve policy formulation, awareness of and interventions on food and nutritional security; signing up to the Scaling Up Nutrition Movement (SUN); and creation of Nutrition Partners Forum (NPF)..

(iii) Key gaps and challenges:

Absence of yearly surveys and corresponding data makes it difficult to assess whether multisectorial coordination in food and nutritional security has been translated into reduced food and nutritional security. PNISA, through SETSAN, has provided support for implementation of the Multisectorial Action Plan for Reduction of Chronic Malnutrition in Mozambique 2011-2020 (PAMRDC). Indeed, some of PNISA subprograms are being implemented through PAMRDC. Based on negligible decrease from 45.7% in 2009 to 43.6% in 2015, achieving relevant PNISA target for stunting is very unlikely. This small decrease reflects the complex underlying causes and multisectorial interventions required. Given concerns from the Government of Mozambique (GoM) as an accountability mechanism, a multisectorial food and nutritional security group makes annual presentation to the Council of Ministry since 2013.[12] As part of action plan to implement PAMRDC, multisectorial food and nutritional security forum were established at province level. However, some stakeholders we interviewed during provincial visits pointed out that some key stakeholders – such as Ministry of Transport and Communication and Ministry of Mineral Resource and Energy – are not members of this forum despite the pivotal roles played by those stakeholders in reducing food and nutritional security. Some promising initiatives but on its inceptive stages include:

- Ministry of Education and Human Development (MINEDH) in collaboration with MASA through SETSAN and the United Nations' World Food Program (WFP) is implementing the National School Feeding Program (PRONAE) in four provinces (Gaza, Manica, Tete and Nampula) in its piloting phase;
- MINEDH in partnership with MASA and Food and Agriculture Organization of the United Nations (FAO) is implementing training in nutrition education – including chronic malnutrition and food insecurity – for primary-school teachers who in turn will pass on the information to their students;
- Ministry of Health (MISAU) is implementing the National Program for Nutritional Supplementation (PRN) targeting lactating women and children under five;
- Ministry of Industry and Trade (MIC) is implement National Program for Food Fortification;

During the period 2013-2016, on this result area, actual expenditure as share of PNISA proposed budget fluctuated from year to year, ranging from -31% in 2015 and 4% in 2014. This relatively small gap, compared with other programs, could be a reflection of the relatively high importance given to effective multisectorial coordination in contributing to reduction in food and nutritional security.

[12] This multisectorial group comprises of MASA, Ministry of Health (MISAU), Ministry of Education and Human Development (MINEDH), Ministry of Industry and Trade (MIC), Ministry of Sea, Interior Water and Fisheries (MIMAIP); Ministry of Public Works, Housing, and Water Resources (MOPHRH); Ministry of Children, Gender and Social Security (MCGAS), and Ministry of Youth and Sports (MJD).

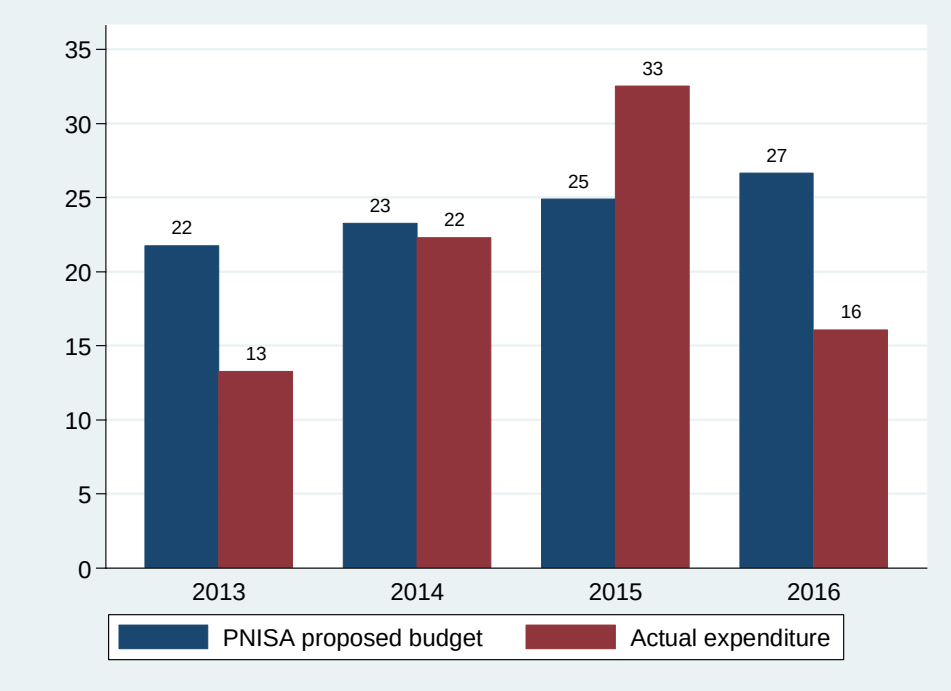


Figure 31 Comparison between PNISA proposed budget and actual expenditure on multisectorial coordination for food and nutritional security

(iv) Priority recommendations: MASA, through SETSAN, to:
a) Continue to strengthen effective multisectorial coordination in food and nutritional security
b) Set specific and realistic targets for this program

3.5.2 Improving Access to and Utilization of High-nutritional Foods

(i) Objectives and Targets:

This program aims at strengthening initiatives directed at improving households' access and utilization of high nutritional foods. No specific PNISA targets were set for this program, making it difficult to assess whether progress was made towards achievement of targets.

(ii) Main Achievements/Results:

Availability of data on a yearly basis prevented us from assessing whether progress has been made under this program.

(iii) Key Gaps/Challenges:

Figure 32 compares PNISA proposed budget and actual expenditures in this program. This figure indicates that substantial financing gap for this program. Actual expenditure was never lower than 87% of PNISA proposed budget in any given year over the period 2013-2017. With this gap, achieving any strategic and realistic target would be very challenging.

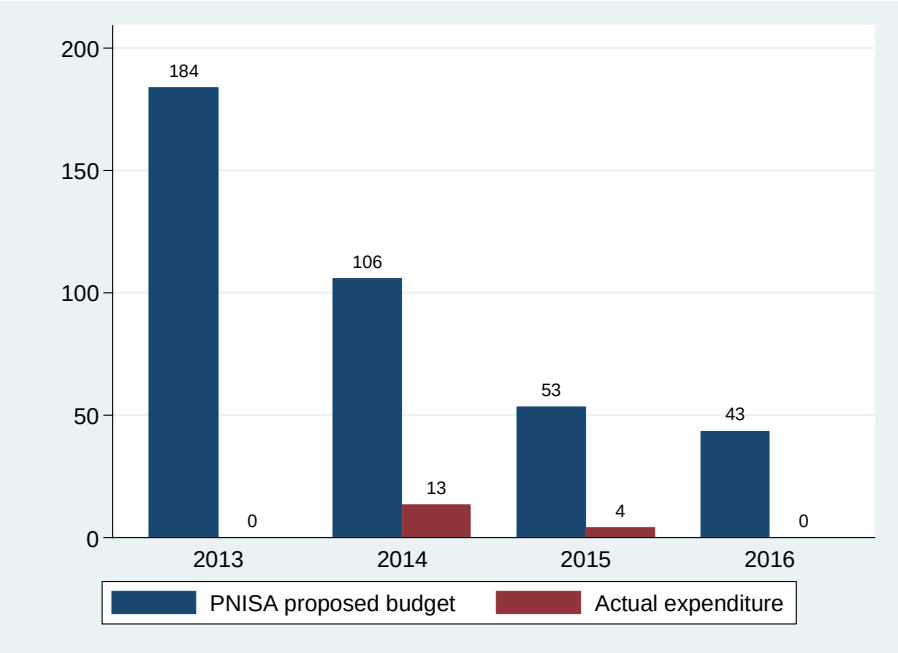


Figure 32 Comparison of PNISA proposed budget and actual expenditure in Improving Access to and Utilization of High-nutritional Foods results area

(iv) Priority Recommendations:

a) MASA through SETSAN to mobilize funding to more effectively improve access to and utilization of high-nutritional foods.

Table 7 below summarizes the assessment of the core indicator of the result area 3.

Table 7 Summary of the assessment of the core indicator under Result Area 3

Core indicator of result area 3	Target at the end of PNISA (2017)	Main Trends, Gaps and Reasons	Rate
Domestic food price volatility index (MALABO) **(CORE INDICATOR)**	To reduce the domestic food price volatility index to less than 7.5% by 2025 (MALABO)	Based on the available data, it appears that there is good progress towards the MALABO target. Between 2015 and 2016 there was dramatic increase in food prices (more than 100%) due to various factors beyond the direct control of the government (eg. The 2015/16 crop season drought which reflects the underlined climate change trends affecting Mozambique as the well the depreciation of the Metical). The government is taking various initiatives to address climate change challenges (eg. PQG, Disaster Management Master Plan, REDD+ and PNISA). These initiatives are still incipient.	

3.6 Results Area 4: Improved Natural Resources

This result area is composed of 4 Programs as follows: (1) Land for Agricultural Purposes Program, (2) Forest and Wildlife Program, (3) Institutional Development Program, and (4) Mapping and Remote Sensing Program. Table 8 below presents the strategic objectives by component of this result area and its actual results and key recommendations.

3.6.1 Land for Agricultural Purposes Program

(i) Objectives and Targets:

The Land for Agricultural Purposes Program has two main objectives: (i) promoting the sustainable use of land; and (ii) ensure and facilitate access to and protection of rights for the use and enjoyment of land, particularly at local community level. Related to this program, PNISA established the indicator of percentage of small-scale farmers that have adopted conservation agriculture with a target of increased from the baseline value of 10% to 25% by the end of the PNISA as well as improved land quality (% of soil organic matter) with a target of increasing from the baseline value of 1% to 2% by the end of the PNISA. The other proposed indicators to be measured to monitor the achievement of the above objectives are: (i) percentage of agricultural land under sustainable land management and (ii) percentage of farmers with ownership or secured land rights. The MALABO target for the first indicator is to ensure that at least 30% of agricultural land is placed under sustainable land management practices and the MALABO target for the second indicator is to ensure that 100% of farmers have rights to access required land by 2018.

(ii) Main Achievements/Results:

The assessment of the PNISA target is not possible due to lack of data. The assessment of the indicator on percentage of agricultural land under sustainable land management is not possible due to the lack of data to derive clear trends. However, Mozambique is cyclically affected by climate and weather conditions which call for sustainable agricultural practices to mitigate the effects of these variations. These practices being implemented in the country include (i) conservation agriculture and nutrition soils programs and (ii) regeneration of mangroves and rehabilitation of degraded ecosystems. There are isolated efforts which together do not give enough evidence towards the achievement of the established target. Regarding the indicator on percentage of farmers with ownership or secured land rights, the MASA (2017) reports that 10% of the farmers have secured their land. Relative to MALABO target there is significant shortfall (10% in 2016 vs 100% by 2018).

(iii) Key Gaps/Challenges:

The above targets are over-established taking into account the remaining time frame to meet the targets (10% of farmers with secure land in 2016 against the target of 100% of farmers with secure land by 2018). The other main challenges under this program include the (i) lack of data to track the trends on percentage of agricultural land under sustainable land management, percentage of small-scale farmers that have adopted conservation agriculture, and improved land quality (% of soil organic matter); (ii) lack of action plans, strategies and tactics to meet the established targets as well as (ii) the limited financial resources. It is important to note that the majority of the budgeted funds under this program were not disbursed as the gap between budgeted and disbursed funds are over 70% in all years and in 2015 and 2016 no funds were disbursed to implement this program (Figure 33)

Table 8 Strategic objectives by component: Improved natural resource management

Component			Unit	B/line	Target	Result	Recommendation
	Improve Land Use Planning	Area targeted under detailed land use planning	ha	0	10,000	Not assessed due to the lack of data	Improve M&E system and collect, analyze and use data for monitoring this indicator.
		Improved land quality (% of soil organic matter)	%	1	2	Not assessed due to the lack of data	Improve M&E system and collect, analyze and use data for monitoring this indicator.
		% of small-scale farmers that have adopted conservation agriculture	%	10	25	Not assessed due to the lack of data	Improve M&E system and collect, analyze and use data for monitoring this indicator.
		% of farmers with access to irrigation for high value crops	%	10	20	Not assessed due to the lack of data	Improve M&E system and collect, analyze and use data for monitoring this indicators
		Area brought under irrigation		17,000	188,000	The current value is 20,856 hectares and it fall short the established target	MASA to design and implement financial resource mobilization actions for establishing/rehabilitating irrigations systems
Forestry Management	Reduce deforestation due to shifting cultivation and agriculture intensification	Area lost to deforestation (ha/year) BY 2011	ha	250,000	250,000	Total land reforested during the period from 2013 to2016 is of 43,994 ha and it is significantly lower than the initial ambitious target	Adjust the target taking into account the current trends and the available resources.

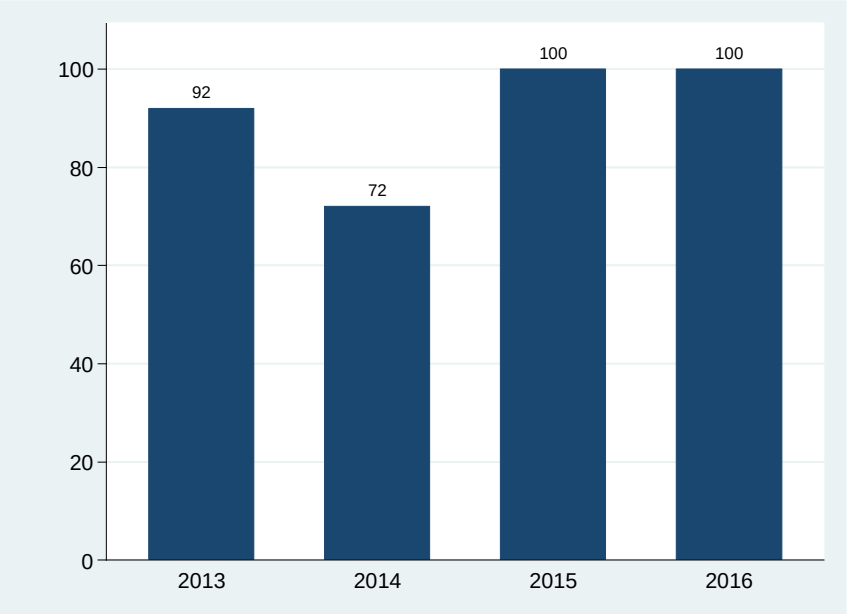


Figure 33 Gap between proposed and actual financing for the land for agricultural process

(iv) Recommendations:

The recommended actions to improve the performance of this programme include:

a) MASA, in collaboration with MITADER, should ensure that PNISA M&E system include the generation, analysis and utilization of the relevant data to compute, track, analyze and utilize the programs indicators;
b) (CR) The MASA, in collaboration with MITADER to establish a realistic yearly targets of the program indicators during the period from 2018 to 2025. This would include revising downwards the target of 100% of farmers with secure land by 2018;
c) MASA, in collaboration with MITADER to develop strategy and roadmap to achieve the established targets supported by adequate funding to be provided through PNISA;
d) (CR) The program *Terra Segura* implemented by MITADER has target of issuing 5 million DUAT by 2019 and accordingly, it is important to ensure that MITADER obtains adequate funding to enable the *Terra Segura Program* to meet this target.

3.6.2 Forest and Wildlife Program

(i) Objectives and Targets:

The objectives of the forest and wildlife programme are to (i) promote the sustainable use of forests and wildlife; (ii) ensure the supply of raw material to the forest industry and increase exports of processed products (timber and non-timber); (iii) increase community participation in the management of forest and wildlife resources; (iv) increase the reforested area in the country; (v) ensure conservation and management of forest and wildlife resources; (vi) mitigate the man/animal conflict. Under this programme, PNISA established as indicator to reduce deforested area by 100% from its initial value of 25,000 hectares. In the addition, under this programme, the PNISA document proposed the following actions:(1) participatory monitoring of forests and wildlife; (2) the implementation of a management strategy of the man/animal conflict; (3) mapping the use and coverage of forest inventories at a scale of 1: 250,000; (4) mapping the use and coverage of and making inventories of mangrove forests; (5) the implementation of the program to support the forestry sector in Mozambique; (6) the implementation of the forest and wildlife management information system (SISFLOF); (7) the rehabilitation of natural reserves; (8) the prevention and control of forest fires; (9) the implementation of the MRV System Platform under the REED+; and (10) promotion of community management of natural resources.

(ii) Main Achievements/Results:

Regarding reducing by 100% of the 250.0 thousand hectares of deforested area, the data show that from 2013 to 2016 about 44.0 thousand ha of land were reforested and this results fall below the PNISA target (250.0 thousand ha). The equipment for implementing the forest and wildlife management information system (SISFLOF) was purchased but it had not yet been assembled. Efforts of reducing the conflict between man and wildlife are being implemented and these includes placement of signs for alerting people about the presence of wildlife in certain areas.

(iii) Key Gaps/Challenges:

The challenges under this program include the (i) lack of data to track the trends on the stipulated indicator and actions. Although the allocated financial resources were above the budgeted funds in 2014, 2015 and 2016, there was shortfall of 62% in 2013 (Figure 34). The surplus of funds from 2014 to 2016 should have helped to strengthen MASA and MITADER and its stakeholders at all levels to collect data for monitoring the established indicators. However there is no available data for calculating the program indicators. Limited allocation of financial resources (value of money) might be behind the limited performance of this program.

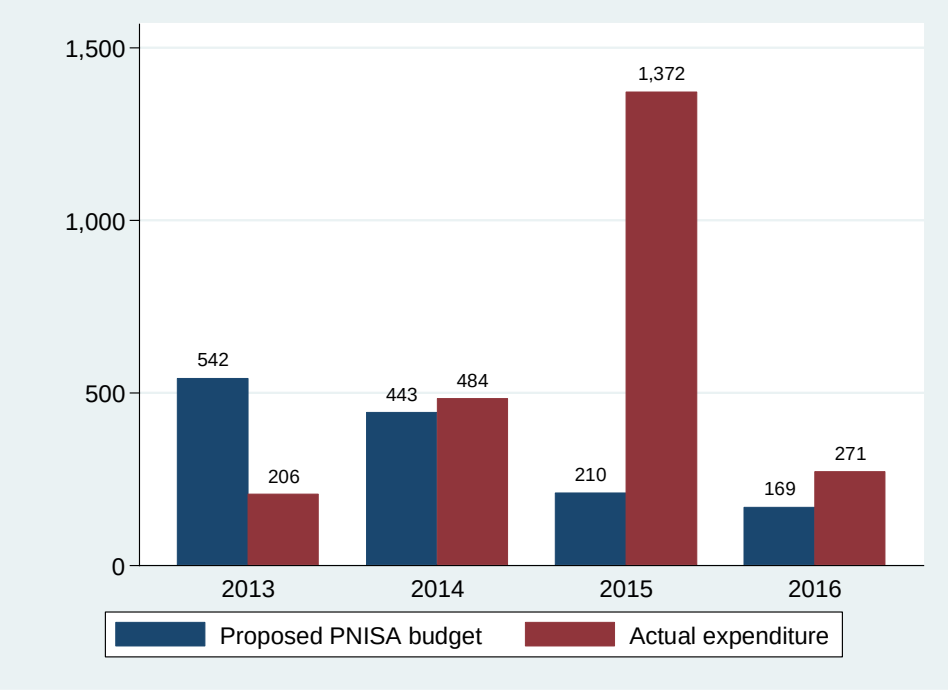


Figure 34 Comparison between PNISA proposed budget and actual expenditure for the forest and wildlife program

(iv) Priority Recommendations:

The recommended actions to improve the performance/results of this program include:

a) MASA, in collaboration with MITADER, should ensure that PNISA M&E system include the generation, analysis and utilization of the relevant data of the program indicators;
b) MASA, in collaboration with MITADER to develop strategy/action plans to achieve the established targets using the allocated funds through PNISA;
c) (CR) MITADER, in collaboration with MASA, to develop a roadmap for promoting sustainable use of natural resource, with emphasis on commercial logging involving local communities;

3.6.3 Institutional Development of DNTF Program

(i) Objectives and Targets:

The objective of the Institutional Development Program is to (1) Strengthen the National Directorate of Land and Forests it's functioning. This PNISA document did not establish specific indicators and respective targets.

(ii) Main Achievements/Results:

The assessment of the results of this indicator is not possible by the lack of specific indicators and targets. However, the collected data in Maputo, Zambézia and Tete indicate that there was a revision of legal framework conducing to sustainable management of forestry and wildlife such as (i) the strategy for managing the conflict between men and wildlife; (ii) law N.14/2016, which prohibits the export of wood, and (iii) the decree N. 40/2015 which prohibits the emission of the new permits for forestry exploration. There was also implemented the wood operation which limited illegal exploration of forestry resources.

(iii) Key Gaps/Challenges:

The lack of specific indicators and the respective targets is the main challenge limiting monitoring the progress of this program towards meetings its objectives. Despite the absence of the indicators and respective targets, the implementation of this program might have been affected by limited availability of financial resources. It is important to note that the majority of the budgeted funds under this program were not disbursed during the PNISA period except in 2014 and 2015 (Figure 35). The gap between budgeted and disbursed funds was 84% in 2013 and in 2016 no funds were disbursed to implement the program (Figure 35).

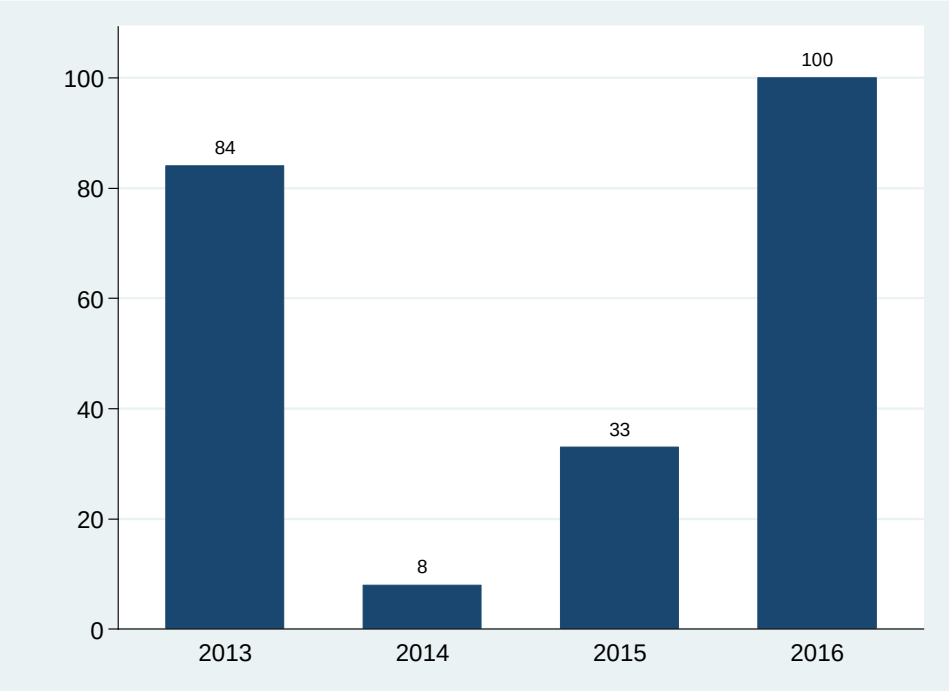


Figure 35 Gap between proposed and actual financing for the institutional development of DNTF

(iv) Priority Recommendations:

a)(CR) MITADER should establish indicators and their respective targets for this program and ensure that PNISA M&E system include the generation, analysis and utilization of the relevant data to track the trends of these indicators; and

b) (CR) MITADER should develop strategy/roadmap to achieve the targets to be established for each indicator.

3.6.4 Mapping and Remote Sensing Program

(i) Objectives and Targets:

The remote sensing program is composed of four subprograms, with their relevant objectives: review of geo-mapping legislation, map production, modernization of the national geodesic network and institutional strengthening. The different actions under these subprograms include:(1) revision of the legislation on aerial photography and cinematography; (2) review of the new geodesic reference system and the establishment of a legal framework for geodesy; (3) preparation of the long term

national mapping plan (10 years); (4) establish principles and standards for the production of maps; (5) regulation of mapping activities by private entities; (6) specifications and standards for geodesic surveys; (7) standardization of geodesic landmarks and permanent GNSS stations; (8) creation of a national geographic information system; (9) technical specifications for structuring digital geo-spatial vector data; (10) re-edition and printing of no longer available topographic maps on the scales 1:50.000 and 1:250.000; (11) production of maps on scale 1:25 000 of the Lower Incomati, (12) production of maps on scale 1:25 000 of the Zambezi Valley; (12) production of maps on scale 1:25 000 scale for the development corridors and other priority development areas; (13) production of maps on scale 1:10 000 of Nacala and Nampula; (14) production of urban maps (maps of capitals); (15) production of maps on the administrative organization of the country (at provincial and district level); (16) the establishment of permanent GPS stations (National GPS Network); (17) increasing the density of the Classic Geodesic Network; (3) the repair of destroyed geodesic markings; (18) the closure of the open circuit of the national leveling network, (19) extension of the leveling network of the area north of the Zambezi river; (20) the creation of a national gravimetric network after the collection of information and data; (21) l training human resource; (ii) capacity building and training in English, GIS, remote sensing, geodesy and photogrammetry and (22) equipping the institutions with different equipment and materials. Among all these actions, for this programme PNISA established one indicator (area under detailed land use planning) with the target to increase from 0 to 10,000 hectares by the end of the program. The PNISA document is silent about the other indicators to be used to monitor the above listed actions.

(ii) Main Achievements/Results:

The assessment of the PNISA target of increasing the area under detailed land use planning from 0 hectares to 10,000 hectares by the end of the program is not possible due to lack of data. There are also no evidences of the PNISA to have achieved the majority of the proposed actions. Table 4.2 below presents the achievement of the different actions listed above. The assessment of the performance of this program based on the result presented in table 4.2 below is difficult to conduct given the lack of the respective benchmark values.

Table 9 Summary of results: Mapping and remote sensing program

Indicator	2013	2014	2015	2016
Number of people received English training			15	
Number of people trained in GIS and remote sensing			3	
Number of people trained in photogrammetric			5	
Number of topographic maps (1:50000) re-edited	15	18	14	11
Number of topography maps (1:250000) re-edited and printed	6	5		
Number of urban maps produced			5	
Number of administrative division of the country produced	1000	1000	350	275
Number of GIS stations established	1			
Number of geodesic marks rehabilitated	50	0	0	0

(iii) Key Gaps/Challenges:

The challenges under this program include the (i) lack of data to track the trends on the stipulated indicator and actions and (ii) limited financial resources to implement the program activities. Except in 2013, the planned budget was lower than the expenditure and in 2016 there was no funds to implement this program (Figure 36).

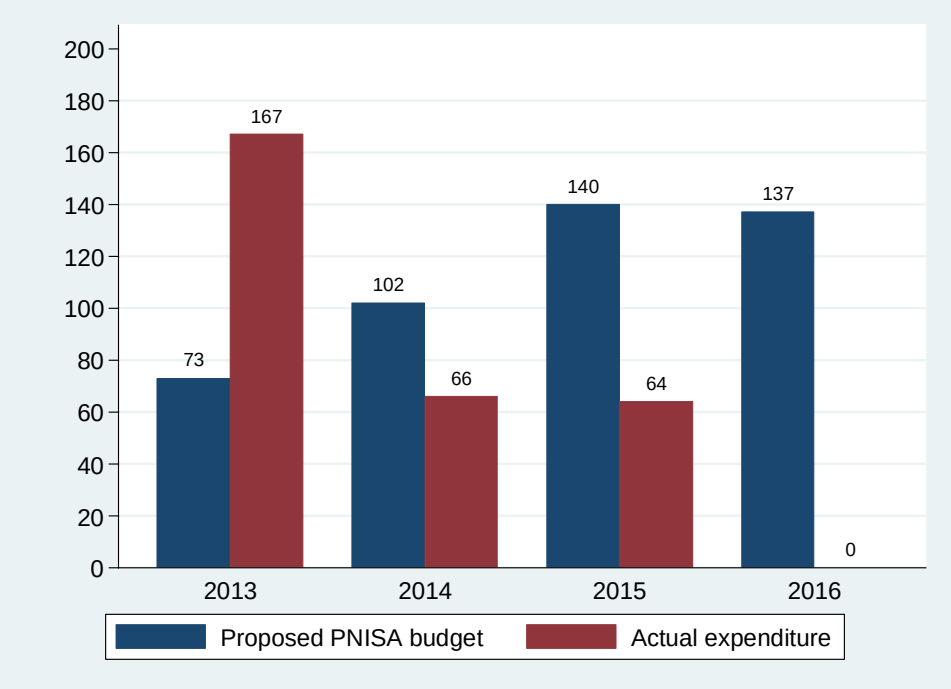


Figure 36 Comparison between PNISA proposed budget and actual expenditure for the mapping and remote sensing program

(iv) Priority Recommendations:

a) (CR) CENACARTA, in collaboration with MASA, should establish indicators and their respective targets for this program and ensure that PNISA M&E system include the generation, analysis and utilization of the relevant data to compute and track the trends of these indicators;
b) (CR) MASA, in collaboration with CENACARTA, should develop strategy/roadmap for fund mobilization to implement the priority activities under this program.

Table 10 below summarizes the assessment of the core indicators of the result area 4.

Table 10 Summary of the assessment of the core indicators under Result Area 4

Core Indicator	Target at the end of period 2017	Main Trends and gaps	Rate
1. Number of ha of land re-forested (PNISA) **(CORE INDICATOR)**	PNISA established as a target to reduce the deforested area by 100% from the initial area of 250,000ha	The available data reveal that during 2013 to 2016 period, 43,994 ha of land were reforested. This amount is significantly lower than the initial target of reforesting 250,000ha. Limited funds coupled with the ambitious stated indicator are behind the realized result.	
2. % of farmers with ownership or secured land rights (PNISA and MALABO) **(CORE INDICATOR)**	Ensure that 100% of farmers have rights to access required land by 2018	Relative to MALABO target there is significant shortfall (10% in 2016 vs 100% by 2018)	
3. % of households that are resilient to climate chocks (MALABO) **(CORE INDICATOR)**	Neither MALABO or PNISA have established target for this important indicator	Given limited data and no existence of targets, it is not possible to establish clear trends. The figure for 2016 highlights a serious gap with only 0.31% of households being resilient to climate and weather related shocks. This also reveals that the climate change initiatives in Mozambique are in very incipient stage.	

3.7 Results Area 5: Strengthened and Reformed Institutions

The institutional reform and strengthening program is comprised of two programs: (i) institutional Reform and (ii) Institutional Strengthening.

3.7.1 Institutional Reform Program

(i) Objectives and targets:

The objectives of the institutional reform program are to: (1) develop the organic statutes and internal regulations of the MASA; (2) develop the career qualifications of the MASA in order to adapt them to MASA functions and (3) develop staffing framework. The PNISA document did not establish the indicators and the respective targets in order to achieve these objectives.

(ii) Main achievement and Results:

The organic statute of MASA was developed in 2016 being necessary to enhance it with the development of the respective internal regulation. There are no specific career qualifications for MASA and currently MASA is using the government carrier qualifications developed in 2010. However, in 2017 MASA developed and approved the extension agent carrier qualifications. Regarding staffing, no visible actions were done during the period from 2013 to 2016. It is important to note that the government cut the recruitment of human resources in all government institutions except for health and education at the end of 2015 due to financial crisis.

(iii) Key Gaps and Challenges:

The main gap limiting enhancement of institutional reforms is mainly the limited financial resources. It should be noted that PNISA did not budget funds for the institutional reform program. The available data also show that the institutional reform program was neglected in terms of fund allocation. The approved budget to this program decreased drastically (98% decrease) from 379 million Meticais in 2013 to 9 million Meticais in 2014 and no funds were allocated for this program in 2015 and 2016. This might be due to financial crisis faced by Mozambique which forced the government to cut budget in different economic areas.

(iv) Priority and Recommendations:

(CR) The key recommendation is for MASA to develop strategy/roadmap aimed to mobilize funds for implementing the activities aiming to enhance institutional reforms (e.g, such as the development of internal regulations and staffing).

3.7.2 Institutional Strengthening Program

(i) Objectives and targets:

The objectives of institutional strengthening are to: (1) establish database for human resources management in the MASA; (2) adopt mechanisms to link human resources with the right places and functions; (3) define the profile of human resources and of the functions and powers of each of the areas;(4) create a platform for information about training/capacity building needs, consistent with and appropriate for the objectives of individual and the MASA development (5) deepen the foundations for the creation and consolidation of the SIGEDAP; (6) improve the working conditions of MASA employees and agents, which includes equipping the HR sector at all levels with office supplies and equipment; (7) improve management processes to stimulate retention of qualified staff through (a) design, implement and promote career path plans, (b) design and implement mechanisms to award the best employees and work teams, (b) the implementation of the salary policy, and (e) the design of an incentives policy for the sector and funding mechanisms; (8) strengthen the institutions for agricultural education and associations of producers and farmers; (9) strengthening the institutional, organizational and management capacity; and (10) operationalize the strategies for civil service cross cutting issues such as HIV/AIDS, disability and gender.

The PNISA document did not establish indicators and the respective targets to assess the achievement of these objectives.

The proposed indicator to monitor institutional strengthening include: (i) the percentage of public agricultural expenditure as percent of total public expenditure, (ii) the ODA disbursed to agriculture as percent of the commitments for the agricultural sector, (iii) the index and capacity to generate and use agricultural statistical data and information (ASCI) and (iv) the index of inclusive institutionalized

mechanisms for mutual accountability and peer review. The CAADP through the Maputo Declaration stipulate 10% government budget devoted to agriculture. The MALABO target is 100% of ODA disbursed annually from 2015 to 2025. The MALOBO target is also to reach at least 63% of the index and capacity to generate and use agricultural statistical data and information by 2025. Finally, the MALABO target is to reach 100% of institutionalized mechanisms and platforms for mutual accountability and peer review.

(ii) Main achievements and Results:

Although the absence of specific indicators and targets, there is no evidence related to the achievement of the first set of objectives (objectives 1 to 10 above). The SIGADAP is being implemented and so far is mainly covering management staff. The MASA is using the government HIV strategic plan and the MASA gender strategy (2005-2015) is out of date and currently the MASA is drafting the new gender strategy (2015-2019).

For the proposed set of indicators, agricultural expenditure data show that the PNISA has made relatively good progress towards the 10% expenditure target, although there has been variation during this period (6.5% in 2013, 9.8%in 2014, 6.5% in 2015 and 7.2% in 2016). The reported ODA disbursement rate for 2015 is drastically low (38.4%) compared to its 100% target. Despite the index and capacity to generate and use agricultural statistical data and information was reported by MASA (2017) at 70% in 2015 and thereby exceeding the MALABO target, there is a need of re-assessing this index given that there is general weakness of agricultural database and the components of this index (eg. infrastructures for data analysis processing) and capacity for analysis. Additionally, the MASA has generated many strategies and action plans to support the development of agricultural sector, which are not been fully and effectively utilized due to several factors, including weak accountability for achieving results; the absence of functional M&E system for PNISA; limited capacity of the staff at various levels. Furthermore, the MASA continues to experience high level of staff turnover for various reasons, which limits its capacity for analyzing and utilizing evidence based information.

The MASA (2017) reports the rate of 69.4% for the index of inclusive institutionalized mechanisms for mutual accountability and peer review, which seems to be high taking into account the notified limited coordination to implement PNISA during this Midterm evaluation. It is important to state that the majority (90%) of stakeholders at provincial level are not aware of PNISA and this limitation is hampering the effective and efficient implementation of PNISA.

(iii) Key Gaps and Challenges:

The implementation of PNISA requires effective and efficient coordination among the agricultural sector stakeholders. However, there is no evidence of effective and efficient coordination. PNISA calls for the establishment of the *Comité de Coordenação do Sector Agrário* (CCSA) to improve coordination among involved stakeholders. It was theoretically established with the development of its terms of reference. This coordinating body was supposed to meet twice a year but since its establishment, it met once in May, 2017. The CCSA was supposed to be managed by its secretariat but it has not yet been officially established. The coordination limitation is coupled by the absence of accountability mechanisms to be applied to the different stakeholders and within the MASA structures at all levels.

Furthermore, the turnover of the key MASA professional staff is limiting the continuations of effective and efficient implementation of PNISA. This might be due to the lack of incentive policy for retaining qualified human resources. Although the allocated financial resources were above the budgeted funds in 2013, 2014 and 2015, there was shortfall of 89% in 2016 (Figure 37). The surplus of funds from 2013 to 2015 should have helped to strengthen MASA and its stakeholders at all levels. However, the presented results above reveal limiting achievements in the majority of the indicators under this program. Limited allocation of resources (value of money) might be behind the limited performance of this program.

Finally, given that PNISA requires the active and accountable engagement of several central government ministries and Provincial governments, relying on MASA to mobilize and enforce this active inter-ministerial/governmental engagement is very challenging.

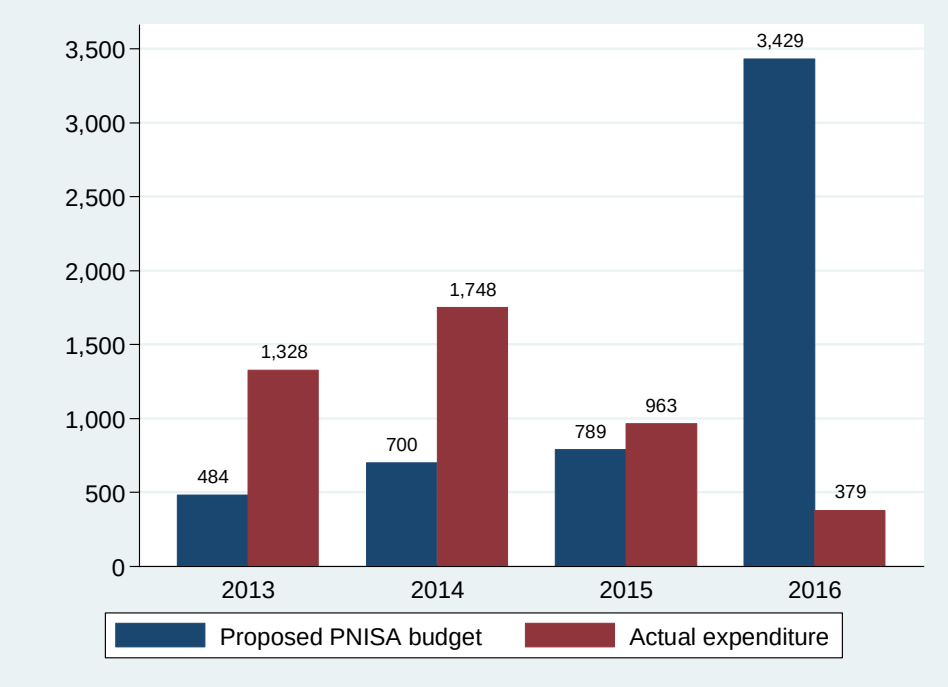


Figure 37 Comparison between PNISA proposed budget and actual expenditure for the institutional strengthening program

(iv) Priority and Recommendations:

In order to promote institutional strengthening, the following actions are recommended:

a) (CR) MASA, in consultation with the Prime Minister's Office, to explore the most suitable option(s) for enhancing the efficiency and effectiveness of the coordination arrangements and mechanisms of PNISA; this would help accelerate the achievement of PNISA's objectives and realistic targets, enabled through enhanced mutual accountability of multiple stakeholders;
b) (CR) MASA to carry out relevant training workshops to strengthen the capacity of relevant MASA, MITADER planning and management human resources at all levels (central, provincial and district) to use statistical data to guide policy formulation and implementation;
c) (CR) MASA to mobilize funds which would enable the provision of appropriate incentives and support to:
    - reduce high staff turnover;
    - promote improved efficiency and utilization of relevant evidence based studies,
    - ensure greater accountability to deliver on strategic results with respect to PNISA;
d) (CR) MASA to develop a roadmap to strengthen appropriate processes and mechanisms of mutual accountability including the role, strengthening (including the CCSA secretariat) and effectiveness of CCSA;
e) MASA to develop the terms of reference and a work plan of the CCSA secretariat,
f) (CR) MASA, in consultation with the Prime Minister's office, to establish CCSA formal mandate to help ensure and enhance accountability;
g) MASA to strengthen the mutual accountability mechanisms of AGRED to help ensure that the development partners provide effective and timely technical and funding support for the enhanced implementation of PNISA;
h) (CR) MASA and other stakeholders, to ensure efficiency-based unit cost of major expenditures to help ensure value-for-money; and
i) MASA to improve implementation-delivering model of this program as part of ensuring the value for money during the implementation.

Table 11 below summarizes the assessment of core indicators under result area 5.

Table 11 Summary of the assessment of the core indicators under Result Area 5

Core indicators	Targets at the end of period (2017)	Main trends, gaps and reasons	Rating
1. Public agricultural expenditure as percent of total public expenditure (MALABO) **(CORE INDICATOR)**	PNISA did not include explicit reference to this indicator and associated target. MALABO target is to increase the public expenditure to agriculture as a share of national expenditure to at least 10% from 2015 to 2025.	Based on the available expenditure data, the PNISA has made relatively good progress towards the 10% expenditure target, although there has been variation during this period (ranging from 6% to 9%) and there has been variable quality and impact of the agriculture expenditure as reflected in the shortfalls of many targets as presented in this RF.	
2. ODA disbursed to agriculture as percent of the commitments for the agricultural sector **(CORE INDICATOR)**	The PNISA document did not include this indicator and the respective target. The MALABO target is 100% of ODA disbursed annually from 2015 to 2025. This target is relevant to support the funding of PNISA.	The reported ODA disbursement rate for 2015 is relatively low (38.4%) is due to withdraw of DPs.	
3. Index and capacity to generate and use agricultural statistical data and information (ASCI) (MALABO) **(CORE INDICATOR)**	To reach at least 63% by 2025 (MALABO)	Based on the reported data, MASA has reported an index of 70% in 2015 and thereby exceeding the MALABO target. However, there is need of re-assessing the realism of this figure given the following factors. (i) General weakness of agricultural database and the components of this index (eg. infrastructures for data analysis processing) and capacity for analysis. MASA has generated many strategies and action plans to support the development of agricultural sector, which are not been fully and effectively utilized due to several factors, including weak accountability for achieving results; the absence of functional M&E system for PNISA; limited capacity of the staff at various levels. MASA continues to experience high level of staff turnover for various reasons, which limits its capacity for analyzing and utilizing evidence based information.	
4.Index of inclusive institutionalized mechanisms for mutual accountability and peer review (MALABO) **(CORE INDICATOR)**	To reach 100% of institutionalized mechanisms and platforms for mutual accountability and peer review (MALABO).	Given the limited information and coverage of years, it is difficult to draw robust conclusion on the strengths of the mutual accountability in the agricultural sector. It should also be noted that there has been limited coordination effectiveness and uneven PNISA results towards meeting its targets, which suggest the need of further strengthen coordination and mutual accountability mechanisms and processes.	
5. Sectorial coordination	PNISA target not defined	Despite the consensus of a need of strong coordination mechanism between MASA and other actors through CCSA, there is no tangible progress of the performance of this mechanism	

3.8 Cross Cutting Themes

3.8.1 Decentralization

(i) Objectives and Targets:

As part of Government's broader policy on decentralization, PNISA aims to expand and strengthen the role and effectiveness of Provincial and District stakeholders in the implementation of PNISA and its M&E.[13]

(ii) Main Achievements/Results and Challenges:

In general, there is a consistent pattern of increasing role and commitment by Provincial and district stakeholders, including government authorities, to promote agricultural development in their respective geographical areas. However, Provinces and District Governments are facing financial constraints give competing demands for limited funds, and therefore require additional financial and technical support to implement new initiatives, such as PNISA. At the same time, the assessment revealed that at the provincial and district levels there is limited knowledge of PNISA and its targets, and there is negligible additional funding provided to the Provinces to directly support the implementation of the PNISA programs. Moreover, the severe funding constraints of PNISA (as cited below) did not allow the allocation of funds directly to the Provinces. Therefore, given the severe funding constraints at both national and provincial levels, the agricultural annual work plans and budgetary proposals at the provincial and district levels have not been linked to or associated with implementing PNISA programs to achieve its specific targets. Accordingly, the agricultural programs being implemented at the Provincial and district level reflect their normal on-going agricultural activities, without making explicit linkages toward achieving the PNISA targets.

In addition, the Provinces are facing staffing constraints, especially at the professional level, to improve their budgetary planning processes, efficient and effective implementation of all of their programs/activities, and weak M&E systems. Without explicit strengthening and funding of Provinces and districts, coupled with limited socialization of PNISA and negligible technical engagement regarding PNISA programs/targets (from MASA) at the Provincial and district levels, it is unrealistic to expect them to contribute to the delivery of PNISA targets.

(iii) Priority Recommendations:

a) (CR) MASA to carry out as soon as possible a socialization initiative of PNISA, as part of the annual budgetary planning processes and cycle, to ensure the Provinces are familiar with PNISA programs and their targets, and their important role in supporting implementation.
b) (CR) MASA should provide technical and financial support to the Provinces during the annual budgetary planning and implementation cycle, including M&E, to ensure improved capacities to support implementation of PNISA programs and meeting of its targets;
c) (CR) MASA to help ensure the Provincial agricultural officers include relevant PNISA indicators and targets in the Provincial and District work plans/budgets and M&E system, thereby helping to focus implementation efforts in contributing to relevant PNISA targets. This support should form part of the external technical support proposed to strengthen MASA's M&E system;
d) (CR) MASA to provide additional funding to Provinces for supporting the implementation of relevant PNISA programs, through an appropriate funding mechanism (e.g., earmarking, "matching funds mechanism"). This assumes that MASA will carry out a resource mobilization initiative to increase funding for PNISA, of which a portion of the additional funds mobilized could support Provincial funding for PNISA.

3.8.2 Gender and Youth

In summary, the PNISA document did not provide an operational strategy and actions for addressing gender and youth challenges. Also, during implementation, there were not explicit interventions supported, aside from those activities supported in the regular on-going programs. Accordingly, it is

[13] It is understood that PNISA implementation will require the participation of both Provincial and district authorities. However, MASA focuses its dialogue and support through Provincial governments, which in turn, provide support to their member districts. Therefore, it is understood that references to Provinces also include the engagement of districts.

recommended that the MASA promote and mainstream a more explicit strategy and actions on gender and youth development in rural areas to be supported by relevant central government ministries and provincial and district entities, in collaboration with other stakeholders.

3.8.3 Monitoring and Evaluation System

i) Objective:

The Monitoring and Evaluation (M&E) of the PNISA aims to provide information to address problems and solve constraints, and also to help ensure accountability and transparency in the use of funds channeled towards investment. The M&E system was expected to be executed at different levels to maintain its focus and direction.

ii) Main Achievements and Gaps/Challenges:

MASA has been doing a good job in monitoring the implementation of the PQG through the PES M&E system. MASA also took initiative to develop the first list of indicators, but these s efforts did not materialize into an operational M&E system. As a result, MASA has relied on using its existing monitoring system to meet its internal and external requirements, especially with respect to meeting the PES requirements. Accordingly, MASA has not been able to track and assess systematically the progress, performance and results, especially at outcome and impact levels, of PNISA's specific programs and targets. In addition, these constraints also have affected MASA's capacity to track systematically the MALABO targets for Mozambique. Accordingly, these constraints also have weakened mutual accountability of PNISA at various levels, involving diverse stakeholders.

These shortcomings are due to a combination of factors, including: (a) absence of a detailed operational design of PNISA's M&E system, from the outset;(b) inadequate human resources and capacities (numbers of professional staff and skills/experience); (c) negligible funding to generate required data to track key indicators, especially at outcome and impact levels; (d) weak linkages with Provincial M&E systems and other CCSA stakeholders.

iii) Priority Recommendations:

a) (CR) MASA to develop a sound, integrated and operational M&E system for PNISA,[14] building on the reconstructed results framework developed to support the PNISA MTR, in order to meet the various reporting requirements for the agricultural sector (e.g., PES, PNISA, MALABO, others, as relevant). Accordingly, there is a need to focus on a limited list of strategic indicators to meet the essential reporting requirements. Also, this improved M&E system will support an enhanced annual budgetary planning and implementation cycle, with a result orientation;
b) (CR) MASA to develop an action plan and to mobilize the required funding for generating, disseminating, accessing, and utilizing reliable and timely data/findings to support the enhanced PNISA M&E system, and the priority indicators;
c) (CR) MASA to enhance a dedicated M&E team (in terms of numbers and skills) for carrying out effectively the enhanced PNISA/sector M&E system, supported by appropriate technical assistance which would provide capacity development and technical accompaniment, at both MASA and Provincial levels;
d) (CR) MASA, with the support of the AGRED, to ensure regular assessments and follow-up, including: (i) the carrying out of a Joint Sector Review on an annual basis to focus on assessing PNISA performance and results, based on clear TOR; (ii) adequate funding and technical support to generate a quality JSR report, which can help support the efficient and effective implementation of PNISA; (iii) systematic follow up of agreed actions, as part of the mutual accountability principle involving the relevant stakeholders;
e) (CR) the CCSA needs to take an active role in demanding the M&E information, including the JSR findings and recommendations, as input for their guidance and decision-making role in supporting more effective coordination, implementation and mutual accountability of PNISA;

[14] There is a need to ensure an integrated, unified and sustainable M&E system, and therefore to avoid creating parallel M&E systems driven by different programs.

3.9 Budgetary and Financing Aspects

The costing of PNISA to meet the ambitious objectives and targets through funding and implementing the 5 result areas and 21 programs was based on a "requirements" approach. PNISA's proposed budget for the period 2013-2017 totaled 112.4 billion MZN (including contingencies of 9%). The proposed shares of total proposed budget reflected assumptions on the relative importance of each of the result areas as shown in Figure 38 below.

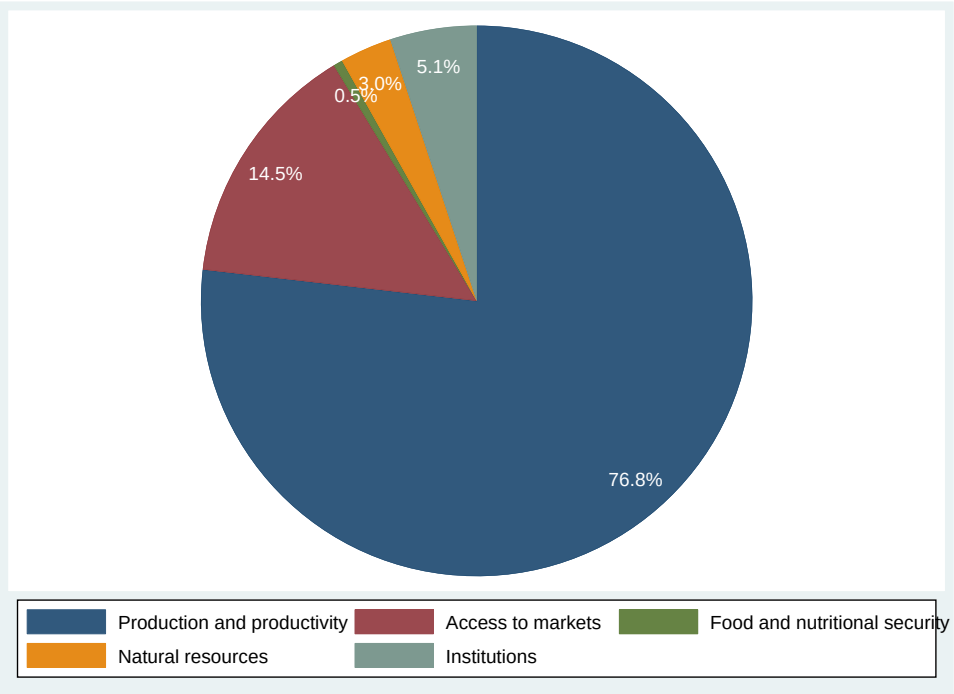


Figure 38 Distribution of PNISA proposed budget for the period 2013-2017

Given that actual expenditure for the fiscal year 2017 are not available at the moment, our assessment of expenditure covers the period 2013–2016. Over this period, excluding contingencies, PNISA proposed budget totaled 92.1 billion MZN, compared with actual expenditure of 18.6 billion MZN. This represents a large financial gap – measured as the difference between PNISA proposed budget and actual expenditure – of 80%, which is about the same magnitude from the outset of PNISA (85%). Therefore, this gap suggests relatively little progress during implementation in mobilizing additional resources to close the large financing gap. Accordingly, for any country, it would be challenging to achieve PNISA's ambitious physical targets without closing this gap. There is also a large gap between the approved budget and the actual disbursements of funds for PNISA with an overall average of 57%, which also varies according to result area from 20% for Improved Natural Resources to 57% for Improved Production and Productivity. This latter gap is due to various reasons. The Ministry of Economy and Finance did not release the full amount of approved budget due to delays in the disbursement of funding committed by Development Partners. Shortfalls between approved budget and actual disbursements also reflect discrepancies between revenues collected by the government and projections at the planning stage when budgets are approved. These two factors usually lead to delaying the releases of funds to MASA (and other ministries) to the last quarter of the year. In addition, MASA faced some constraints to spend approved funds, due to various constraints, including: cumbersome procurement procedures of goods and services, budget accounting, reporting and auditing procedures. Despite those constraints, over the period 2013 spanning 2016, MASA actual expenditure as a share of actual disbursements stood at 98%.

The assessment now turns attention to comparing PNISA approved budget to actual expenditure by PNISA result area. Figure 39 summarizes PNISA proposed budget and actual expenditure by result area over the period 2013-2016. This figure shows that the financial gap varies across result areas with actual expenditure on some result areas surpassing PNISA proposed budget. During the period 2013 – 2016, Increased Production and Productivity and Expanded and Inclusive Access to Markets result areas registered budget shortfalls of 62.9 billion MZN (92%) and 11.5 billion MZN (79%), respectively. On the contrary, actual expenditures for the remaining result areas exceeded PNISA

proposed budget by 501.7 million MZN (17%) for Improved Natural Resources Management, 234.3 million MZN (4%) for Strengthening Institutions and Capacities; and 173.2 million MZN (36%) for Enhanced Food and Nutrition Security.

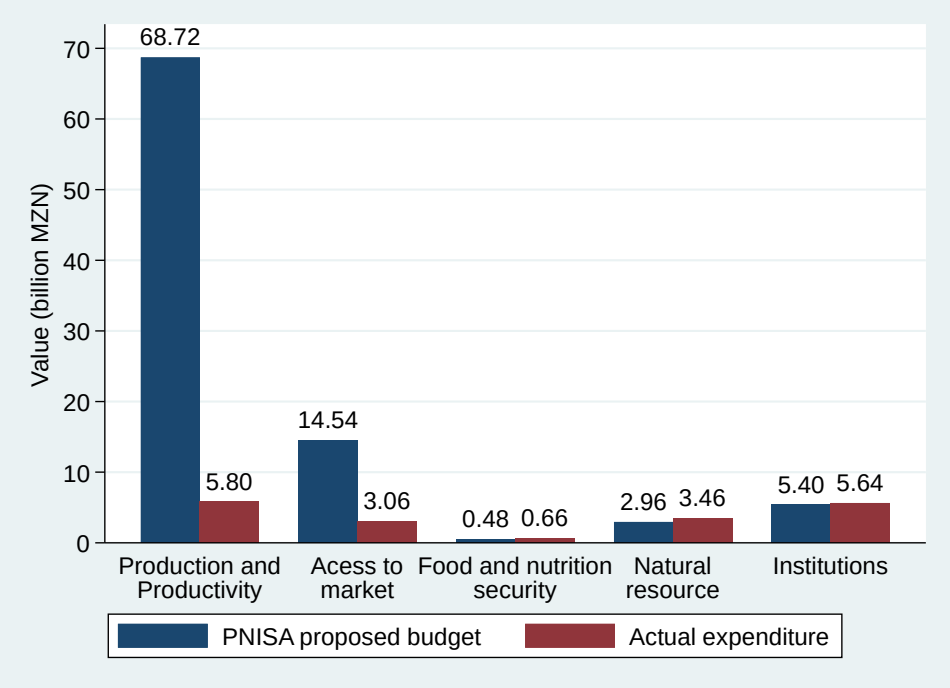


Figure 39 PNISA proposed budget and actual expenditure by result area for the period 2013-2016

As is the case for the aggregate gap over the period 2013-2016, the size of the financing gap within each result area varies substantially from year to year. For instance, the gap between PNISA proposed budget and actual expenditure for the Enhanced Food and Nutrition Security results dropped drastically from 68% in 2013 to 19% in 2015 and to minus 579% in 2016. This suggests that more attention has been given to this result area over time. On the other hand, the gap for Strengthening Institutions and Capacities result area decreased from minus 257% in 2013 to minus 23% in 2015 and then to 66% in 2016. For Expanded and Exclusive Access to Market, the gap remained stagnant at about 90% from 2013 to 2015; followed by sizeable fall to 18% in 2016. This wide gaps and fluctuations could be a reflection of the economic crises specially starting in 2015 when many Development Partners reduced their commitments to government budget. Data show that approved budget for investment expenditure supported by external sources declined from 4.0 billion MZN in 2013 to 3.0 billion MZN in 2014 to 1.1 billion in MZN in 2015, representing a 72% decline over the two-year period. Actual expenditure reduced from 313 million MZN in 2013 to 246 million MZN in 2015.

The assessment now examines sources (internal versus external) of funding, focusing only in investment expenditure because this is the only expenditure category for which data broken down by source of funding are available. Investment expenditure over the period 2013 – 2016 varied considerably across result areas: ranging from 4.4 billion MZN for Increased Production and Productivity to 172.2 million MZN for Enhanced Food and Nutrition Security. During the period 2013 – 2016, the main source of expenditure on the five PNISA result areas are internal sources, totaling 10.3 billion MZN or equivalently 91% of total investment expenditure. This could signal relatively higher budget predictability given that internal sources are relatively less erratic than external sources (Development Partners commitments). Figure 40 breaks down investment expenditure by source of funding over the period 2013 – 2016. This figure illustrates that with the exception of Enhanced Food and Nutrition Security result area, the main source of funding is undoubtedly internal sources accounting for at least 75% of investment expenditure in each one of the result areas. Investment expenditure on Enhanced Food and Nutrition Security result area come from external sources (88%). This could suggest high budget unpredictability given the relatively low level of disbursement of

donor-sourced funds (donor commitments versus disbursed donor budget) and cumbersome procurement procedures followed by donors. This could also be a reflection of the strong partnership of SETSAN with various development partners (FAO, IFAD, UNICEF, WFP, WHO, USAID, and others); signing up to the Scaling Up Nutrition Movement (SUN); and creation of Nutrition Partners Forum (NPF). Relative importance of each funding source within each result area remains basically unchanged across years, following a pattern similar to that shown in Figure 40.

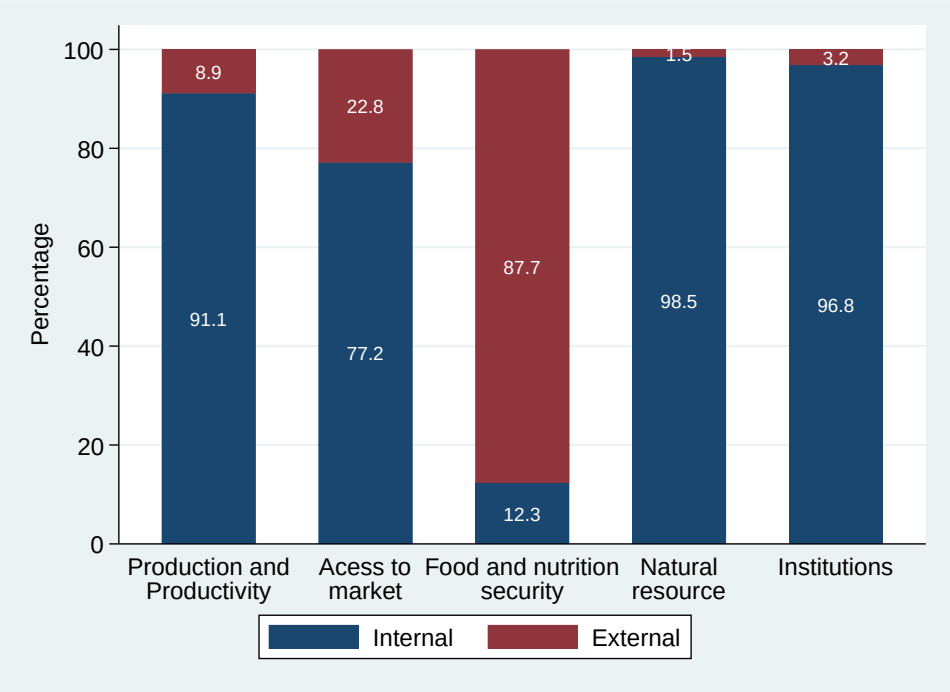


Figure 40 Investment expenditure by source over the period 2013-2016

Figure 41 compares investment approved budget and investment expenditures over time. Between 2013 and 2017, investment expenditure amounted to 10.1 million MZN, of which 90% come from internal sources. This investment expenditure represents 55% of approved investment budget. Figure 41 shows that the disbursement rate, measured as actual expenditure as share of approved budget, is higher for internal sources than that for external sources (88% versus 12%). Over the period, disbursement rates ranged from 8.0% to 22% for external sources and from 86% to 90% for internal sources. This extremely low disbursement rates from external sources during the period 2013-2017 suggests high unpredictability of funding from external sources as discussed earlier. This high unpredictability makes it difficult to implement activities as planned, leading to ad-hoc decision-making when considerable portion of funding are not forthcoming. With these sizable shortfalls between approved budget and actual expenditure from external sources, it is unlikely that the PNISA targets will be met.

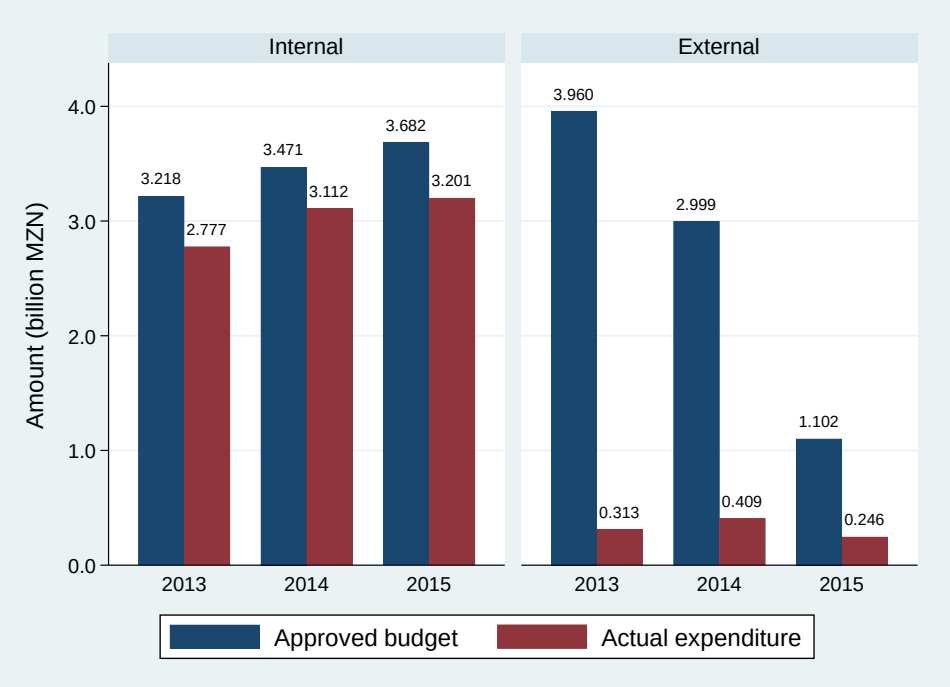


Figure 41 Approved investment and investment expenditure by source

This assessment (findings presented in this section combined with those presented on annex 5) has shown a significant shortfall in the allocations of the required agricultural expenditures to meet the ambitious PNISA targets, hence comprising one of the major explanatory factors for the significant shortfall in targets. Findings show that the percentage of the agricultural expenditures has been between 2% and 3% of total government expenditure over the period 2013-2016. This level of spending appears to not have been adequate to meet key targets (such as 6% growth rate in the agriculture sector and reduction in poverty and food and nutritional insecurity), of course, coupled with quality of spending in terms of delivery of key services and complementary infrastructure for the agriculture sector (such as research, extension, irrigation, roads, storage capacities and post-harvest technologies, etc.) and other non-financial interventions. It is recommended that efforts continue to be made to meet the Maputo Declaration of allocating at least 10% of total government expenditure to agriculture, coupled with objective criteria to allocate spending to delivery of key services and infrastructure including improved production and post-harvest technologies.

Regarding the composition of expenditures, this assessment has shown the high concentration of allocations to Central Government (MASA), and negligible allocations from the Provinces for supporting implementation of key PNISA targets. This shortfall from the Provinces reflects the early stages of decentralization and the relatively limited knowledge and commitment from the Provinces with respect to PNISA programs and targets. At the same time, the food and nutritional security program has engendered active engagement from the Provinces, as reflected in the higher allocations and higher awareness of PAMRDC and its objectives. Accordingly, it is recommend higher engagement between MASA and the provincial governments to increase both awareness of PNISA including its objectives and commitment to PNISA at provincial level, leading to explicit inclusion of PNISA-related activities at provincial planning and budget. Given limited funds, prioritization of allocations during the budgetary planning stage is essential. However, there has been an absence of explicit and objective prioritization criteria. It is recommended that MASA and the provinces develop and agree on sound and consistent explicit and objective prioritization criteria for guiding future allocations, giving emphasis to meeting strategic PNISA targets.

With respect to external funding, findings from this assessment show high gap between the allocations and disbursements due to various internal and external factors. Increasing disbursement rates from external funding would play a pivotal role in achieving PNISA targets. This assessment has also shown that spending at provincial level is not aligned with neither agricultural potential nor rural population size. Hence, it is recommended that intensity of spending at province level be consistent with agricultural GDP size and rural population size because this alignment, coupled with quality of spending, would lead to increased effectiveness in achieving PNISA targets. Findings from this assessment revealed misalignment between spending on each PNISA result area and its prioritization

based on PNISA proposed budget. Hence, it is recommended that MASA budget be structured according to PNISA result areas and programs.

Priority Recommendations:

(1) Enhanced Expenditure Quality/Efficiency and Results: MASA and Provinces, in collaboration with the Ministry of Planning and Finance, to enhance key qualitative aspects of the budgetary/financing efficiencies, processes and of budgetary allocations for PNISA, including (building on the recommendations of the recent sector studies and the JSR for 2017):

(i) Prioritization Criteria: adoption and application of enhanced prioritization criteria for the allocation of public funds as part of the medium and annual budgetary planning for PNISA, especially in the light of severe budgetary/financing constraints, including:

a) Core Drivers: Programs/interventions which comprise "core drivers of agricultural transformation", and are strongly aligned with and contribute to strategic targets of the PQG and PEDSA;

b) Numbers of Direct Beneficiaries: Programs which benefit large numbers of beneficiaries, with special focus on smallholders, and the scope of benefits (and unit cost);

c) Viability: Programs which demonstrate attractive financial returns and enhanced incomes to smallholders and sound economic viability, especially with respect to lumpy investments and key services (e.g., irrigation, rural roads, technology development and dissemination);

d) Balance: Enhanced "balance" of allocations between the PNISA result areas and programs, and between capital and recurrent expenditures, especially some which are severely underfunded and contribute to strategic targets (e.g., food security and nutrition, technology);

e) Subsidies: Rationalization and phasing out of subsidies for "private" goods and services, based on an assessment and action plan (involving seeds, fertilizers, tractor services)

(ii) Budgetary Execution/Gaps: formulate an action plan which will help reduce the identified gaps between the budgetary approvals, releases and expenditures, including the delayed releases of funds in the fourth quarter;

(2) Development Partner's Improved Efficiencies and Updated Allocations: Development partners, in close consultation with MASA and MEF;

(i) To identify and take the appropriate actions to expedite disbursements of approved funds to support the timely implementation of agreed programs/activities;

(ii) Where relevant, the DPs may wish to re-allocate approved funds for on-going programs/projects, in line with the enhanced expenditure priorities;

(3) Closing Financing Gaps: MASA, in collaboration with the MEF and development partners, to formulate and implement a strategy and action plan to close PNISA's financing/budgetary gap for FY18 – FY 20 (including upward adjustment of budgetary ceilings, for both central and provincial entities); these required increases also would be in line with the MALABO 10% agricultural expenditure target;

(4) Updated Costs and Key Targets: MASA, in close collaboration with the MEF, to update the: (i) costs of PNISA, based on actual expenditures/budgetary approvals (2013 – 2017), and likely financing for FY18 – 20, and generate 3 financing scenarios (high, medium and low, with the "low" scenario reflecting the current situation and funding trends); (ii) key targets for priority programs. This updating should reflect the results of the above relevant items (including subsidies of private goods and services);

It is understood that the results of the resource mobilization strategy/action plan will help adjust the most likely financing scenario and updated targets.

3.10 Emerging Strategic Lessons

This MTR for PNISA has generated eight important operational lessons which reflect the Mozambican version of many of the common lessons arising from the design and implementation of

many NAIPs in other Sub-Saharan Africa countries (see Chapter 1, and Annex 4). These Mozambican-specific constructive lessons arise from the assessment of the 21 programs; these lessons highlight the importance of addressing effectively key design and implementation features, with the aim of achieving the envisioned results (or lack thereof). Further details, including implied "negative lessons" which have generated these constructive lessons are reflected in the above detailed assessment.

1) Sound Design and Scenario Planning: Ensuring the generation and use of adequate and updated analytical work to underpin design and implementation strategy, preferably using relevant sector planning tools (e.g., an agricultural sector-wide model, disaggregated by major type of farmer households, using several scenarios (high, medium, and low), to take into account uncertain funding availabilities, and to ensure consistency between proposed targets and actual funding; guided by a sound theory of change, and supporting results chain and results framework, underpinned by an updated sector diagnostic assessment;

2) Consistent/coherent Targets, Actual Funding and Budgetary Cycle: Use evidenced-based and achievable targets, consistent with likely funding availabilities specified in medium and annual budgetary allocations and work plans (at central government and provincial/district government levels). To the extent funding does not materialize at various levels, ensure the relevant program targets and annual work plans of relevant entities (central and provincial levels) are adjusted downwards to ensure realism, while ensuring the application of sound prioritization criteria for determining the most appropriate composition of investments to be funded, as part of the annual budgetary cycle;

3) Sound Policy and Institutional Environment and Roles: From the outset of the program, ensure sound, updated and socialized sector policies/regulations (e.g., seeds, fertilizer, finance, farm-level services) and institutional roles of the public and private sectors and their respective institutions. This clarity upfront will help minimize overlaps, and misallocation of public funds for functions to be carried out by an expanded and inclusive private sector;

4) Expanded Inclusive Private Sector Role: Show explicit role and support for an expanded and inclusive private sector role (including women and youth), in input and output markets, especially to promote competitive value chain development; and engage private sector dialogue in early phase and on continuous basis, at various levels (national and provincial). This should include strengthening farmer organizations and effective models for enabling efficient and effective access to inputs, outputs, and to engage directly in value chain development opportunities;

5) Foster Effective Institutional and Multi-stakeholder Coordination: From the outset of the program, promote adequate/strong sectoral coordination arrangements and mechanisms, which can also serve as multi-stakeholder consultation mechanism on a continuous basis; this mechanism/arrangement needs to have a clear mandate(s) and supported by a technical secretariat (or equivalent). This will help ensure the required systematic and technical follow-up, with a strong results orientation, and reinforced by appropriate mutual accountability mechanisms and "culture", and supported by an enhanced M&E system;

6) Operational and Effective M&E System: Ensure an improved and operational Monitoring and Evaluation system, from the outset of the program, and which should: (a) be based on a sound results framework; (b) focus on the most strategic "core" indicators, covering a mix of relevant impact, outcome and output indicators; (c) supported by high quality annual reviews (e.g., Joint Sector Reviews); and (d) be utilized effectively by decision-makers, relevant coordination mechanisms; and multi-stakeholder fora/platforms to help reinforce follow-up and mutual accountability (e.g., JSR; development partner groups, such as Ag-RED);

7) Strengthened Institutional Capacities: Strengthen institutional capacities and sustainable and non-distortionary incentives (financial and non-financial) to attract and retain qualified technical officers, at central and Provincial levels; and

8) Adequate and Timely Resource Mobilization: Actively promote financial resource mobilization and cost sharing from the outset of the program, and from various sources of key stakeholders: Government (central, provincial, district), private sector, development partners, and beneficiaries.

4 STRATEGIC CONCLUSIONS AND CORE RECOMMENDATIONS

4.1 Main Conclusions

Based on the above assessment, this MTE has highlighted 7 strategic conclusions. These conclusions focus on the key design aspects and performance and "core drivers" toward achieving PNISA's overall objectives and strategic targets, especially at the impact and outcome level. Further details are provided in Chapter 3, which provides supporting evidenced-based analyses used to derive these conclusions.

1) Mixed Design Aspects: In general, PNISA was well designed, although strategic requirements and implementation experience also suggest key challenges which were not addressed adequately in the design stage, and also during subsequent implementation. In summary:

PNISA's positive design aspects include:

- Addresses most of the relevant agricultural sector issues and thematic areas;
- Is aligned generally with PQG and CAADP framework and processes;
- Estimated required financial resources for each result area, program and subprogram;
- Promoted the active engagement of key stakeholders during the design stage (e.g., Government entities at both central and provincial levels, private sector, development partners, NGOs, academia) during the design phase.

PNISA's challenging aspects included neglect/inadequate:

- Operational strategy and plan for expanding the vital role of the private sector; also, PNISA did not include clear operational roles and targets involving private sector;
- Operational content on some key sub-programs, such as international trade under the market access result area;
- Establishment of indicators and their respective targets for some of the key programs (eg: Market access, institutional strengthening);
- Operationalized M&E system, supported by clear and adequate accountability systems;
- Strategy and mechanisms for mobilizing the required financial resources to close the large financing gap (85%, which has persisted until this date);
- Formulation of different funding and implementation scenarios (high, medium and low), taking into account the possible and actual available funds.

2) Emerging Sound Policy and Institutional Environment and PNISA's Limited Role: During the PNISA implementation period, there were several key agricultural policies and strategies which were formulated, approved and at various stages of implementation, although some of them need to be further deepened and operationalized to generate the required and sustained benefits. For example:

POCA (2013 - 2013): Operational Plan for Agricultural Commercialization; PICA (2013-2020): Integrated Plan for Agricultural Commercialization; PODA (2015 - 2020): Operational Plan for Agricultural Development; initiatives on improved access to land (Terra Segura), and enhanced and enabling institutional coordination initiatives (e.g., establishment of the CCSA, although in incipient stages of being functional; enhanced food security coordination: Nutrition Partners Forum). Thus far, PNISA has played a relatively minor role in helping to further operationalize these key policy and institutional initiatives, due to various constraints highlighted in Chapter 3 (e.g., funding, technical capacities, coordination).

3) Variable Achievement of PNISA's Impact, Outcome and Output Results. After nearly five years of implementation, tangible results (at impact and outcome levels) which can be attributed clearly to PNISA, are still in their early stages. The following section summarizes the main achievements and key gaps according to PDO level, the 5 result areas and the crosscutting themes in terms of "core" indicators (which comprises the drivers in achieving PNISA objective).

(a) According to PDO Level:

(i) Agricultural. Growth Rate: PNISA stipulated an agricultural growth of 7% per year; the CAADP/MALABO target is 6% per year. The actual agricultural growth rate has been about 3.0% per annum (2013-2017), and therefore, significantly and consistently below the ambitious target of 7% per year. The major reasons for shortfalls include significant underfunding of PNISA (public and Development Partners); PNISA's limited scope in mobilizing funds, promoting and achieving an expanded private sector role in the agriculture sector.

(ii) Poverty Reduction: Despite PNISA did not establish a target for poverty reduction, MALABO established a target reducing poverty level by at least 50% at national poverty line, from the year 2015 to the year 2025. There was a modest decrease in poverty from 54.7% (2008/2009) to 49.2% (2014/2015), reflecting the relatively low agricultural sector growth rate trends. Promising sources of agricultural growth and rural poverty reduction include scaling up improved technologies and contract farming. However, PNISA limited funding level and composition has limited its potential role in helping to reduce poverty.

(iii) Nutrition: Stunting and Wasting Rate: PNISA established as target to reduce prevalence of stunting from 44% (2008) to 30% (2015) and 20% (2020) and MALABO established as target to bring down wasting to 5% or less by the year 2025. The absence of yearly surveys limits evidence-based assessment of progress and effective targeting of stunting and wasting. Based on negligible decrease from 44% in 2008 to 43% in 2013, achieving current targets are unlikely, due to complex underlying causes and multi-sectorial interventions required coupled with the revealed SETSAN's constraints and limited provincial and district level engagement in addressing nutrition issues.

(iv) Private sector investment rate and role: PNISA and MALABO did not establish the target on the ratio of private sector investment to government investment in agriculture. PNISA did not formulate and implement an explicit operational strategy and interventions to stimulate directly inclusive private sector development. This neglect is also associated with an absence of required data systems. Accordingly, the actual role of the private sector in Mozambique is at an incipient stage, especially involving the agricultural sector. Promising private sector investment includes numerous key commodities and value chains, supported by business plans which are being promoted by MITADER. While some initiatives to promote private sector investment are being promoted, they are at an incipient stage. The absence of comprehensive and operational strategy for expanding private sector development of and engagement in Mozambique's agriculture sector is limiting the active involvement of the private sector in agriculture.

(b) According to Result Areas (5)

Following the main conclusions for the program development objectives, the main conclusions related to the principal targets under each result area are presented below.

(i) Result Area 1: Increased Production and Productivity

(a) Crop Yield: PNISA established as a target an increase in maize yield to 1.8 MT/ha using TP1 (use of improved seeds) and to 2.5 MT/ha for using TP2 (use of improved seeds and fertilizer) by 2017. There is modest increases and well below PNISA targets for maize as well as other food crops although varying across provinces and farmers. Gaps are due primarily to limited use of improved inputs, high dependence on rain-fed agriculture, and constraints in technology services (research-extension linkages, mechanization), and constraints to accessing financing and markets. However, targets were met for soybeans, tomato, Irish potato, sugar cane and cashew nuts.

(b) Access to yield enhancing inputs: PNISA established as target an increase from 5% (2012) to 35% (2017) of percentage of farmers adopting improved seeds; and increase from 10% (2012) to 20% (2017) of percentage of farmers adopting fertilizer and an increase in the quantity of applied fertilizer from 2kg/ha to 25Kg/ha by 2017. MALABO established as target an increase in the quantity of fertilizer applied to at least 50 kg/ha by 2025. There is significant shortfall in meeting the target due to various factors (e.g., ambitious, weak research-extension linkages. Limited extension coverage). For example, the proportion of farmers using fertilizer was 4.5% in 2015 against the 20% target in 2017. The quantity of fertilizer used in 2016 is 3.7kg/ha against the 50kg/ha in 2025.

(c) Extension services (crops and livestock): PNISA did not establish a target for the extension coverage and MALBO established a target of covering all farmers (100%) by 2018. The target on number of extension agents was not established both under PNISA and MALABO. There is

significant shortfall for the MALABO target related to extension services coverage as the actual coverage is 28.8% in 2016 against the target of 100% by 2018. There is a slight an upward trend in the number of extension agents. However, the number of extension agents is still significantly low to reach the recommended coverage of 250 producers per extension agent.

(d) Livestock: PNISA established as a target an increase in the weight of carcass from 140kg to 160 kg in 2017, an increase the percentage of vaccinated cattle from 65% to 80% in 2017 and reach 12 baths per animal by 2017. The average weight per animal was 146Kg (2013-2016), which is lower than the target (160kg) and constraints includes limited use of improved breeds coupled with use of traditional feeding methods (grass fed cattle). Regarding the cattle vaccination, PNISA is on track to meeting the target, however, a key challenge is to ensure sustained improvements in veterinary services, and expanded role of the private sector and farmer organizations. For the number of baths, PNISA is generally on track to meeting the target with the current average of 9 baths per animal per annum.

(e) Fisheries: PNISA established as target to produce 30.0 thousand MT of aquaculture fish and no target for offshore fish production. There is an upward trend for both aquaculture and offshore fish production. However, the target for aquaculture was over stated and it was not attained (30.0 thousand MT against the actual 700 MT/year).

(f) Agricultural research: PNISA established as target to release 20 crop varieties (4 with high nutritional potential, chicken breeds with tolerance to adverse weather condition, and 2 goat breeds adapted to different agro-ecological conditions. The target on crop varieties was met. IIAM released 35 varieties. However, there was a shortfall in meeting the target of releasing 2 chicken and goat breeds.

(g) Agricultural irrigation: PNISA established as a target to increase the irrigated area to: 50.0 thousand ha in 2017 and MALABO target is to increase by 100% by the year 2025 taking as a base the year 2000. Significant shortfall is observed under this target (20.0 thousand ha in 2016 vs. 50.0 thousand ha in 2017). This is due primarily to shortfall in provision of financing, and also delays arising from procurement processes and implementation capacities.

(ii) Result Area 2: Market Access

(a) Quantity Sold as % of production for major crops:PNISA and MALABO did not establish explicit this indicator and the respective target. There is limited reliable data available, although general impression is that pace of increased market surpluses is below implied targets.

(b) Farm gate prices vs wholesaler prices: PNISA did not establish explicit targets in this result area and for the indicator farm price as percentage of wholesaler price. There are multiple systems and sources of price data utilizing different methodologies (e.g. SIMA and MIC). Available data suggest farmers are receiving a high proportion of the retail prices, the overall knowledge suggest this is misleading.

(c) Percentage of post-harvest losses for the 5 national priority commodities: PNISA did not establish the target for this indicator. MALABO established as a target the decrease by 50% by 2025 as a base the year 2015 and PODA established as target the decrease from 24%of post harvest losses in 2015 to 12% in 2019. There is no data to assess this indicator. General impression is that there is a relatively high % of post-harvest losses for major commodities.

(d) Expanded Public and Private Partnerships (PPPs): Number of priority agricultural commodity value chain for which PPPs were established with strong linkage to smallholders: PNISA did not establish this indicator with the respective indicator. MALABO stated: establish and strengthen inclusive PPPs for at least 5 (Rice, maize, cassava, poultry, cotton and cashew nut) priority agricultural commodities value chain with strong linkages to smallholders by 2025. PNISA did not include any proposed actions to establish and strengthen PPPs. However, government (MASA and MITADER) has been involved in efforts to attract private sector to participate in PPPs. Assessment on this indicator is difficult due to the lack of data.

(e) Value and growth of intra Africa trade of major agricultural commodities and services: PNISA did not establish this indicator with the respective target. MALABO established as a target to triple intra Africa trade in agricultural commodities and services by 2025 as a base the year 2015. Agricultural good imports outweigh exports by four to five times (negative trade balance), and no evidence of reversing trends. Progress towards meeting MALABO target is lagging behind. There is

absence of data disaggregated by commodity and by agricultural services, reflecting underlying data challenge.

(f) Trade facilitation index (TFI): PNISA did not establish this indicator with the respective target. MALABO established as a target a fully established trade facilitation measures by reaching a 100% of trade facilitation index by 2025 as a base the year 2015. Absence of data is a key challenge, which is a constraint to assessing reliably trends over time. Current TFI is at 55% (2016), little more than half way to meet the target, no data for other years.

(iii) Result Area 3: Food Security and Nutrition

(a) Domestic food price volatility index: PNISA did not establish this indicator including its target. MALABO established as target to reduce domestic food price volatility index to less than 7.5% by 2025.It appears some progress towards the target has been made. However, Mozambique is prone to flood and drought (climate change), leading to high price volatility. Government is taking various initiatives to address climate change challenges and adverse effects on stable food prices (eg. PQG, Disaster Management Master Plan, REDD+ and PNISA). These initiatives are still incipient.

(iv) Result Area 4: Natural Resources

(a) Number of hectares of land re-forested: PNISA established as target to reduce deforested area by 100% to 250,000 ha in 2017. Total land reforested of 43,994 ha (2013 to 2016) is significantly lower than the initial ambitious target.

(b) Percentage of farmers with ownership or secured land rights: PNISA did not establish a clear target for this indicator. MALABO established as target to have 100% of farmers with land rights by 2018. There is significant shortfall (10% in2016 vs 100% target in 2018)

(c) Percentage of households resilient to climate chocks**:** PNISA and MALABO did not establish a clear target for this indicator. Absence of data is key challenge and data is available for only one year. Only 0.31% of households in 2016 were resilient to climate and weather related shocks, revealing serious gaps and that the climate change initiatives in Mozambique are in very incipient stage.

(v) Result Area 5: Institutional Strengthening

(a) Public agricultural expenditure as percent of total public expenditure: The implied target for this indicator is 10% under PNISA. The MALABO target is to increase to at least 10% from 2015 to 2025. Relatively good progress towards achieving the 10% target has been made, although with erratic fluctuation (ranging from 6% to 9%), coupled with variable quality and impact of the agriculture expenditure.

(b) ODA disbursed to agriculture as percent of the commitments for the agricultural sector: PNISA did not establish this indicator and the respective target. MALABO target is 100% of ODA disbursed annually from 2015 to 2025. Relatively low ODA disbursement rate (38% in 2015), due to withdraw of Development Partners.

(c) Index and capacity to generate and use agricultural statistical data and information: PNISA did not establish this indicator and the respective target. MALABO established a target of giving at least 63% of the index and capacity to generate and use agricultural statistical data and information by 2025.Target exceeded: This index was 70% in 2015. However, there is need of re-assessing the realism of this figure given the following factors: (i) General weakness of agricultural database and the components of this index (eg. infrastructures for data analysis processing) and capacity for analysis; and (ii) MASA has generated many strategies and action plans to support the development of agricultural sector, which are not being fully and effectively utilized due to several factors, including weak accountability for ensuring follow-up and the required results.

(d) Index of inclusive institutionalized mechanisms for mutual accountability and peer review: PNISA recognized the need of mutual accountability and peer review and propose to be done through CCSA; however not specific targets were indicated. The MALABO target is to reach 100% of institutionalized mechanisms and platforms for mutual accountability and peer review. Absence of data is key challenge to draw robust conclusion on the strengths and weaknesses of the mutual accountability in the agricultural sector. Existence of limited coordination effectiveness and uneven PNISA results towards meeting its targets, which suggest the need to further strengthen coordination and mutual accountability mechanisms and processes.

(e) Number of full-time researchers: PNISA and MALABO did not establish this indicator and the respective target. There is absence of data on yearly basis. Data from IIAM reveal that 1.8%, 6.2%, and 16% of employees have a PhD, MSc and BSc degrees, which show limited human resource for knowledge production.

(f) While there is consensus on the urgency of significantly strengthening coordination (within MASA and especially with other Ministries/stakeholders), and support for the establishment of the CCSA, there is little evidence of tangible progress.

c) Conclusions According to Strategic Crosscutting themes

(i) Decentralization

1) Growing commitment by Provincial and district stakeholders to promote inclusive agricultural development;
2) Financial, staffing, M&E, work plans, budgetary cycle, and capacity constraints at Provincial and District levels, limiting their capacity to contribute to PNISA targets.
3) Limited knowledge of PNISA and its targets at Provincial and District levels
4) Severe underfunding of PNISA (85%) has impeded MASA's capacity to allocate funds directly to the Provinces;
5) Agricultural programs/activities at Province and District level reflect their on-going program without explicit linkages toward achieving the PNISA targets; in summary: "business as usual"

ii) Monitoring & Evaluation

1) MASA has relied on using its existing monitoring system to meet its internal and external requirements, especially with respect to meeting the PES requirements;
2) MASA has not been able to track and assess systematically the progress, performance and results, especially at outcome and impact levels, of PNISA's specific programs and targets.
3) These M&E constraints are due to a combination of factors, including:
    - absence of a detailed operational design of PNISA's M&E system, from the outset;
    - inadequate human resources and capacities (numbers of professional staff and skills/experience), and inadequate external technical support;
    - negligible funding to generate required data to track key indicators, especially at outcome and impact levels; and
    - weak linkages with Provincial M&E systems and other CCSA stakeholders.
4) Weak M&E has resulted in deficient mutual accountability at various levels and among key stakeholders

4) PNISA's Major Financing Shortfalls: The most notable finding of the MTR is that the required financing was not mobilized and released to implement the envisioned PNISA programs. During the period 2013-2016, there are 5 financing indicators which reveal different dimensions of the financing challenges: (a) the level of agricultural expenditures as a % of total government expenditures was only 2-3% during the period 2013-2016, well below the 10% expenditure target agreed by African Governments, including Mozambique; (b) the actual expenditures were only 15% of the required funding; (c) the approved budget was only 26% of the required funding; and (d) the actual expenditures were only 57% of the approved budget; (e) disbursed budget (releases from the Ministry of Economy and Finance) was only 57% of the approved budget. Moreover, during the implementation period, MASA did not adjust downwards the envisioned and ambitious targets, at the Program Development Objectives (PDO) level, and for each of the 21 programs. Therefore, it is not surprising that there are significant shortfalls in meeting many of the targets, while also recognizing that some of the targets are on track (e.g., yields for some crops; generation of improved crop varieties);

5) Limited and incipient role of the VITAL inclusive private sector and Promising Potential in Value Chain Development (VCD) initiatives: There is increasing recognition of the VITAL role of promoting an inclusive and broad-based private sector role to contribute to CAADP's broader vision of agricultural transformation. The role of the private sector in Mozambique is at an incipient stage, and needs to be promoted through a combination of policy, institutional and investment interventions.

There are some emerging promising experiences involving private sector-driven value chain development (VCD) for commodities for which Mozambique can become competitive. For example, several government entities (e.g., MASA through CEPAGRI, Zambezi Valley Development Agency, MITADER) have carried out promising VCD initiatives through supporting the formulation of business plans and expanding access to finance and land by smallholders. These initiatives offer MASA the opportunity to forge a close collaboration with the relevant entities, and therefore generate positive synergies for tapping this vital source of agricultural growth and poverty reduction. There is some emerging success stories of VCDs, but these need to be scaled up, especially to ensure inclusion of smallholders (e.g., sugarcane; tobacco; cotton; soybean; poultry).

6) PNISA's Limited Effective Coordination. While there is consensus on the urgency of significantly strengthening coordination (within MASA and especially with other Ministries/stakeholders), thus far there is little evidence of tangible progress. Hence, there is an urgent need for strengthening appropriate coordination mechanisms/processes (e.g., building on existing coordination mechanisms, such as fully activating the CCSA, and providing it with the needed M&E information and technical support for systematic follow-up and enhanced mutual accountability);

7) Core Drivers for Agricultural Transformation are at early stage of Activation: The theory of change developed for the PNISA MTE provides a roadmap for helping to prioritize the main types and mix of prioritized interventions, involving policies, institutional reforms and investments, especially by an expanded and strengthened private sector. Available evidence from PNISA implementation seems to validate the soundness of the proposed roadmap. However, this assessment shows that there are some strategic programs which comprise key drivers and which need further strengthening and adequate funding to ensure they generate the potential results which will contribute toward agricultural transformation. For example, the following are core driver interventions, but which need to be boosted significantly to achieve the desired results: some crops are meeting yield targets; agricultural research, agricultural extension, agricultural research-extension linkages are moving in the right direction; access to finance, including guarantee fund is at very incipient stages; expanded and prioritized irrigation and rural roads, with improved operational and maintenance need greater attention and funding support; farmer organizations and apex bodies are at incipient stages of development, in order to better access enhanced quality of services and expanded market access; expanded, inclusive and competitive VCD, supported by rural electrification, post-harvest storage enhancements and expanded agricultural trade are all at very incipient stages. Given limited resources, there will need to be a phased and prioritized approach to activating these drivers of transformation.

4.2 Core Recommendations

As highlighted above, the emerging gaps (technical, capacity, financial, coordination) in achieving PNISA's strategic objectives and targets highlights the need for Government, led by MASA, in close collaboration with key stakeholders, to:

- enhance the strategic content and/or targets of the 21 programs;
- intensify implementation, with tangible results;
- improve significantly the effectiveness of coordination, at various levels;
- strengthen and operationalize a sector-wide M&E system, which will support more efficient, effective and timely decision-making.

Accordingly, the section below summarizes the 32 "core"[15] recommendations (and supporting actions) to help achieve enhanced results from PNISA during the extended period of PNISA (through 2019). Annex 2 provides a roadmap which indicates key milestones (by end 2018 and 2019), primary implementation responsibilities, and the types of required resources to implement the recommendations.

[15] "Core" actions reflect the key "drivers" for agricultural transformation, based on the theory of change and results framework summarized in Chapter 3. These "core" actions are further supported/operationalized by component sub-actions which are outlined below, to enable effective and focused implementation, tracking and generation of tanbible results.

4.2.1 Core Recommendations For On-going PNISA: Consolidating and Securing Strategic Results

A) Overall and Program Development (6 Core Actions)

O.1: Extend PNISA: MASA, in consultation and endorsement of Consultative Council, to seek formal approval of the extension of PNISA to the end of 2019.
The rationale for the extension is to enable more time to generate key results and meet key targets, and to enable a PNISA phase 2 to coincide with the launching of the next PQG (2020).

O.2: Update Agricultural Growth Rate: MASA to update (decrease) 7% agricultural growth rate (based on more realistic assumptions, and possible funding scenarios)

O.3: Update realistic Nutritional Targets: MASA, together with other members of the Malnutrition Steering Group, to re-assess PNISA's ambitious targets on stunting and wasting-20% (by 2020), and to derive updated and realistic targets

O.4: Prepare/implement Private Sector Strategy and Road-map:
MASA:
(i) to carry out comprehensive and operational strategy and road-map for expanding inclusive private sector development;
(ii) Work out an appropriate institutional roles and arrangements for spearheading expanded and inclusive domestic and foreign private sector development, supported by a sound road-map;
(iii) together with MIC, establish appropriate and reliable data collection system and roadmap of private sector investment, analyses, and utilization.

O.5: Enhance PNISA Structure and Increase level of agricultural expenditures
MASA to:
(i) rename Program 11 ("Agribusiness Development Program" --- to "Competitive Value Chain Development and Agricultural Trade Program";
(ii) enhance the strategy and road map to promote enhanced agricultural trade;
(iii) MASA to establish indicators and targets for the PNISA programs (e.g. Market access, food security, natural resources, institutional strengthening) taking into account the current trends and available resources; and
(iv) MASA, with the support from the MOF, to increase the level of agricultural expenditures, in accordance with the 10% target and according to explicit priorities.

O.6: Disseminate and Utilize Relevant Sector Analyses/Evidence:
MASA, in collaboration with and support by the AGRED, to develop and carry out a road map for wide dissemination, discussion and effective utilization of relevant sector studies, including follow-up actions (key sector studies to be identified and compiled).

B) BY RESULT AREA (RA)

RA1: INCREASED PRODUCTION AND PRODUCTIVITY (7 core actions)

1.1: Enhance Crop Programs:
MASA:
(i) to prioritize recommended cropping patterns according to agro-ecological zones, and addressing other relevant constraints;
(ii) MASA to promote the use of enhanced yield inputs, in partnership with the private sector (eg. seed, fertilizer, irrigation, and tractor services);
useful for MASA to develop road map & formulate possible Memo of Understanding/MOU.

1.2: Increase Fish Inputs:
MMAIP to promote the establishment of fingerling and fish feed factories across the country with participation of private sector; MASA to develop supporting road map and explore possible MOU;

1.3: Improve Livestock infrastructure, inputs and service markets:
MASA to:

(i) promote the construction of livestock infrastructures, mainly for benefiting the smallholder producers, and with involvement of private sector;

(ii) ensure the establishment of livestock input and service markets, with active involvement of private sector

1.4: Enhance Agricultural Research Actions:

MASA to:

(i) develop and implement a roadmap that will aim to expanded degree and non-degree training to strengthen the research capacity of relevant staff at all levels (central, provincial and district);

(ii) provide appropriate incentives and support to:

- reduce high staff turnover;
- promote improved efficiency and effectiveness of research production;
- develop/implement sound road-map;
- ensure efficiency-based unit cost of major expenditures to help ensure value- for-money;

1.5: Strengthen Agricultural Extension Program:

MASA to formulate realistic road-map (including realistic targets for Mozambique) involving private sector and NGOs by exploring possible public/NGO/private extension service partnerships for closing the extension coverage gap.

1.6: Improve Irrigation Program coverage and impacts:

MASA to:

(i) formulate realistic action plan involving private sector to cover the gap of the irrigation target;

(ii) re-assess the unit costs of irrigation works, with the aim of developing efficiency-based unit costs, low-cost irrigation investment options, which together can increase the number of direct beneficiaries.

1.7 Strengthen agricultural mechanization:

MASA to organize farmers in blocks to facilitate the use of machinery and extension services, with increasing role of private sector; Simplify the mechanisms for obtaining fuel subsidy, while developing more sustainable approaches to expand access to the mechanization services.

RESULT AREA 2: EXPANDED ACCESS TO MARKETS (3 core actions)

2.1: Strengthen Post-harvest management:

MASA:

(i) together with MIC, to develop a strategy and supporting road map which would promote inclusive and competitive small and medium-scale enterprises post-harvest management including agro-processing;

(ii) to increase actual expenditure on this program given its pivotal role in increasing farmers' income and consequently reducing poverty;

(iii) to expand storage capacities and improve post-harvest technologies at household and community level.

2.2: Expand Rural Roads Program:

(i) ANE, in collaboration with MASA, to prioritize expenditures for rural paved roads in areas with "high" agricultural potential, and rural roads which connecting production areas to populated consumption canters;

(ii) ANE would improve coordination mechanisms and processes between MASA and the Ministry of Transport and Communication in determining priority road networks (with convergence on prioritization criteria).

2.3: Strengthen data systems to support enhanced evidenced-based policy formulation:

MASA:

(i) in collaboration with INE, to utilize collected data through TIA and IAI to strengthen evidence-based policy formulation; collect through TIA and IAI income data more frequently to help monitor income at household (HH) level and assess impact of various policy options, contributing to evidence-based policy formulation;

(ii) MASA to develop a roadmap to strengthen and expand the existing agricultural data collection frameworks, to include additional key data, such as post-harvest losses; sustainable land management; climate change resilience, with the aim of supporting improved evidenced-based decision–making.

RESULTS AREA 3: ENHANCED FOOD AND NUTRITION SECURITY (1 core action)

3.1: Enhance Multi-Sectoral nutritional coordination
MASA, through SETSAN, to prepare sound action plan to strengthen effective multisectorial coordination in food and nutritional security;

RESULTS AREA 4: IMPROVED NATURAL RESOURCES (2 core actions)

4.1: Improve land security:
(i) MITADER to revise downwards the target of 100% of farmers with secure land by 2018, while updating and implementing a road-map for achieving a more realistic target;
(ii) MITADER, with support from MEF, to ensure that MITADER obtains adequate funding (via budgetary cycle) to enable the *Terra Segura Program* to meet the target of issuing 5 million DUATs by 2019.

4.2: Promote Sustainable use of natural resources: MITADER, in collaboration with MASA, to develop a roadmap for promoting sustainable use of natural resource, with emphasis on commercial logging;

RESULTS AREA 5: INSTITUTIONAL REFORM AND STRENGTHENING (4 core actions)

5.1: Institutional Reform Program
5.1.1: Enhance Coordination Arrangements/Mechanisms:
MASA, in consultation with the Prime Minister's Office, to:
(i) explore the most suitable option(s) for enhancing the efficiency and effectiveness of the coordination arrangements and mechanisms of PNISA;
(ii) proceed to implement the preferred and agreed option;

5.1.2: Enhanced & Sustainable Incentives:
MASA to prepare and carry out an action plan for formulating appropriate financial and non-financial measures/incentives to: (a) reduce high staff turnover; (b) promote improved efficiency and utilization of relevant evidence based studies, (c) ensure greater accountability to deliver on strategic results with respect to PNISA.

5.2: Institutional Strengthening Program
5.2.1: Strengthen key staff for enhanced evidenced-based capacities and decisions:
MASA to carry out relevant training workshops to strengthen the capacity of relevant MASA, MITADER planning and management human resources at all levels (central, provincial and district) to use statistical data to guide policy formulation and implementation;
5.2.2: Strengthen CCSA role and effectiveness:
(i) MASA to develop an action plan proposal to strengthen the role and effectiveness of CCSA, including support from a CCSA secretariat (including the option of MASA's DPCI;
(ii) CCSA to review, approve and implement the roadmap (with the support of the CCSA secretariat);

6.0: CROSS-CUTTING THEMES (9 core actions)

6.1 Decentralization: (2 core actions)

6.1.1: Socialize PNISA at Provincial/District levels:
MASA to carry out as soon as possible a socialization initiative of PNISA, based on a road-map, to enhance their engagement via work plans and budgetary cycle;

6.1.2: Provide technical support to Provinces in their budgetary cycle

(i) This socialization activity should be complemented by ensuring MASA's more active engagement in providing direct support to Provinces (especially the Departments of Agriculture) in the formulation of their annual work plans/budgets to help ensure strong alignment and support to key PNISA targets;

(ii) MASA to help ensure the Provincial agricultural officers include relevant PNISA indicators and targets in the Provincial and District work plans/budgets and M&E system (including as part of mid-year review for FY18);

6.2: Monitoring and Evaluation System (1 core action)

6.2.1: Enhance operational Ag. Sector M&E System

(i) MASA to formulate road-map for enhancing a dedicated M&E team (in terms of numbers and skills) for carrying out effectively the enhanced PNISA/sector M&E system, supported by appropriate technical assistance which would provide capacity development and technical accompaniment, at both MASA and Provincial levels;

(ii) MASA, with the support of the AGRED, to formulate road-map for ensuring regular assessments and follow-up, including: (a) the carrying out of a Joint Sector Review on an annual basis (b) adequate funding and technical support to generate a quality JSR report; (c) systematic follow up of agreed actions;

(iii) CCSA needs to take an active role in demanding the M&E information and results from strategic studies such as JSR, and other strategic thematic assessment studies to be carried out.

6.3 Financing and Budgetary Aspects (6 core actions)

6.3.1: Enhance MASA's Budget Structure:

MASA to structure its budget according to PNISA's 5 components (result areas) and 21 programs; the rationale is that the enhanced budget structure will facilitate management by results/targets, enhanced "value-for-money", and strengthened accountability.

6.3.2: Enhance level and quality of agriculture public expenditures:

MASA and Provinces, in collaboration with the Ministry of Economy and Finance (MEF), to increase the level of agricultural expenditures (toward the 10% target), and to enhance key qualitative aspects of the budgetary/financing processes and of budgetary allocations for PNISA would include the following key elements:

(i) Sharpen Agricultural Expenditure Prioritization Criteria:

MASA to adopt and apply enhanced prioritization criteria for the improved allocation of public funds as part of the medium and annual budgetary planning for PNISA, especially in the light of severe budgetary/financing constraints; enhanced criteria would include:

a) Core Drivers: Programs/interventions which comprise "core drivers of agricultural transformation", and are strongly aligned with and contribute to strategic targets of the PQG and PEDSA;

b) Numbers of Direct Beneficiaries: Programs which benefit large numbers of beneficiaries, with special focus on smallholders, and the scope of benefits (and their unit cost);

c) Viability: Programs which demonstrate attractive financial returns and enhanced incomes to smallholders and sound economic viability, especially with respect to lumpy investments and key services (e.g., irrigation, rural roads, technology development and dissemination);

d) Balance: Enhanced "balance" of allocations between the PNISA result areas and programs, and between capital and recurrent expenditures, especially some which are severely underfunded and contribute to strategic targets (e.g., food security and nutrition, technology);

e) Subsidies: Rationalization and phasing out of subsidies for "private" goods and services, based on an assessment and action plan (involving seeds, fertilizers, mechanization)

(ii) Close budgetary Execution/Gaps: formulate an action plan which will help reduce the identified gaps between the budgetary approvals, releases and expenditures, including the

delayed releases of funds in the fourth quarter; this would include increasing the level of agricultural expenditures, taking into the account the agreed 10% target;

6.3.3: Improve DP expenditure funding support

Development partners, in close consultation with MASA and MEF, to support improved expenditure efficiencies and allocations:

(i) to identify and take the appropriate actions to expedite disbursements of approved funds to support the timely implementation of agreed programs/activities;

(ii) where relevant, the DPs may wish to re-allocate approved funds for on-going programs/projects, in line with the enhanced expenditure priorities; this review/adjustments can be made during each DP's next review of its program/project.

6.3.4: Close PNISA's Funding Gap:

MASA, in collaboration with the MEF and development partners, to formulate and implement a strategy and action plan to close PNISA's financing/budgetary gap for FY18 – FY 20 (including upward adjustment of budgetary ceilings, for both central and provincial entities); these increases also are in line with the MALABO 10% expenditure target;

6.3.5: Update Costs, Financing Plan and Targets of PNISA:

MASA, in close collaboration with the MEF, to update the:

(i) costs of PNISA, based on actual expenditures/budgetary approvals (2013 – 2017), and likely financing for FY18 – 20, and to generate 3 financing scenarios (high, medium and low, with the "low" scenario reflecting the current situation and funding trends);

(ii) key targets for priority programs. This updating should reflect the results of the above relevant items/findings;

It is understood that the results of the resource mobilization strategy/action plan will help adjust the most likely financing scenario and updated targets;

6.3.6: Provide technical & financial support to provinces:

MASA to provide technical and financial support to the Provinces, with an emphasis on:

(i) enhancing their planning/budgetary cycle;MASA to help ensure the Provincial agricultural officers include relevant PNISA indicators and targets in the Provincial and District work plans/budgets and M&E system (including as part of mid-year review for FY18);

(ii) helping the provinces to develop a sound, integrated and operational M&E system for the agricultural sector (and key targets of PNISA); this M&E system needs to build on and complement the reconstructed results framework developed to support the PNISA MTE; these enhanced tools will help provinces meet in a coherent manner the various reporting requirements for the agricultural sector (e.g., PES, PNISA, MALABO, other relevant initiatives).

4.2.2 Core Recommendations for PEDSA 2 and PNISA 2: Forward-Looking Roadmap

Finally, Table 13 outlines the key elements of a roadmap for the formulation of a new PEDSA (say, 2020 – 2030) and a PNISA Phase 2 (2020 – 2024). It is proposed that these two inter-related tasks be carried out in parallel to carrying out the enhanced implementation/completion of PNISA. This approach would help ensure a seamless transition to sound and timely launching of PNISA Phase 2, building on the positive results and momentum of PNISA Phase 1, and guided by PEDSA II.

Table 12 Proposed Roadmap for Formulation of PEDSA 2 and PNISA 2

Proposed Priority Activity (ies)	Proposed Main Outputs	Proposed Timeframe B: begin C: completion	Primary Responsibility(ies) (assumes close collaboration with other relevant stakeholders)
1.0 Complete Assessment of PNISA I (reflecting relevant multi-stakeholder feedback)	1.1: Draft and Final Assessment Report; 1.2: final and "agreed" roadmap for implementing agreed recommendations;	B: June, 2017; C: Final report: by mid-Nov., 2017; (to include agreed/approved Roadmap)	1.1: Consultant team: to prepare and complete the assessment report, roadmap; 1.2: MASA/DPCI: to secure formal approval (from the Consultative Council) of assessment study, including roadmap of agreed recommendations;
2.0 Formulate and Agree on draft TOR, work plan and budget for mid-term review of PEDSA; Mobilize and recruit/select consultants	2.1 TOR prepared, approved, & finalized; 2.2: Work plan and budget prepared and approved, and funds mobilized 2.3: Consultants recruited and selected	2.1: B: by end-Oct., 2017 C: by mid-Nov., 2017 2.2: by mid-Dec. 2017 C: by end-Jan. 2018 2.3: C: by end-Jan., 2018	2.1: MASA/DPCI 2.2: MASA/DPCI, together with AGRED 2.3: MASA/DPCI, together with AGRED
3.0 Carry out mid-term review of PEDSA	3.1: Inception Report Prepared 3.2: Draft Report Prepared and Discussed (consultation workshop) 3.3: Final Report (issued and disseminated)	3.1: by end-Feb., 2018; 3.2: by end April, 2018 3.3: by end May, 2018	3.1: Consultant team, in consultation with MASA DPCI and DPs; 3.2: Consultant team, , in consultation with MASA DPCI and DPs; 3.3: Consultant Team, together with MASA/DPCI
4.0 Prepare and Discuss/Agree on Concept Note/CN for PEDSA 2 (2020-2030) note: need to use mid-term review of PEDSA to expedite preparation of PEDSA II.	4.1: draft CN prepared; 4.2: draft CN reviewed and approved 4.3: CN finalized& Issued	4.1: B: By end-May, 2018 C: By mid-June, 2018 4.2: C: By end-June, 2018 4.3: By end-July, 2018	4.1: MASA/DPCI (with ST consultant inputs) 4.2: MASA Technical Council & Consultative Council, coordinated by DPCI 4.3: MASA/DPCI
5.0 Formulate and Agree on draft TOR, work plan and budget for preparation of PEDSA 2; mobilize funds (grant); Recruit/select consultants	5.1 TOR, work plan and budget prepared (DPCI staff and consultants to work as one team); 5.2: TOR, work plan and budget reviewed and approved 5.3: Consultants mobilized and selected (to work with the MASA "core" team)	5.1: By mid-August, 2018 5.2: By end-August, 2018; 5.3: by end-Sept., 2018	5.1: MASA/DPCI (in close collaboration with AGREDD); 5.2: MASA/DPCI, with technical council; 5.3: MASA/DPCI
6.0 Prepare PEDSA 2 and seek consensus and formal approval	6.1: PEDSA 2 draft document prepared; 6.2: PEDSA 2 document reviewed and approved	6.1: By end-Nov., 2018 6.2: By mid-Jan., 2019	6.1: MASA DPCI (core staff & consultants) 6.2: MASA Technical Committee (TC); and Consultative Council (CC)

7.0 Prepare Joint Sector Review/JSR for PNISA (for 2018)	7.1 TOR for JSR prepared and approved 7.2: JSR for 2018 prepared, validated, and distributed	7.1: By end-Feb., 2019 7.2: By end-March, 2019	7.1: MASA/DPCI, together with technical Committee 7.2: MASA/DPCI team, with consultant support;
8.0 Prepare and Discuss/Agree on Concept Note/CN for PNISA Phase 2	8.1: draft CN prepared; 8.2: draft CN reviewed and approved 8.3: CN finalized	8.1: By end-March, 2019; 8.2: By mid-April, 2019; 8.3: By end-April, 2019	MASA/DPCI, in close collaboration with MEF and AGRED
9.0 Formulate and Agree on draft TOR, work plan and budget for preparation of PNISA Phase 2 (including relevant analytical tools and strategic studies to be specified/carried out)	9.1 TOR, work plan and budget prepared (DPCI staff and consultants to work as one team); 9.2: TOR, work plan and budget reviewed and approved 9.3: Consultants mobilized and selected (to work with the MASA "core" team)	9.1: By mid-May, 2019 9.2: By end-May, 2019 9.3: By end-June, 2019	MASA/DPCI, in close collaboration with MEF and AGRED
10.0 Mobilize the funding for preparation of PNISA 2.	Funding mobilized (grant funds)	By end-May, 2019 (parallel activity)	MASA/DPCI, in close collaboration with MEF and AGRED
11.0: Carry out the Preparation work of PNISA II (based on agreed TOR)	11.1: PNISA 2 draft Preparation Document prepared	11.1: By end-September, 2019 (preparation of budget for 2020 will be needed earlier, hence 2020 to be "transition year")	MASA, in close collaboration with relevant departments, other Ministries and Provinces
12.0: Review and discuss findings and recommendations of PNISA 2 Preparation Report (based on stakeholder consultations)	12.1: PNISA 2 preparation Document reviewed and discussed/validated (including consultation workshops)	12.1: By end-October, 2019	Technical Council and Consultative Council, facilitated by MASA/DPCI
13.0 Finalize Agreed PNISA II Document/Proposal; and ensure integration in the medium term PQG and annual budgetary cycle and processes)	13.1: PNISA 2 document formally endorsed 13.2: PNISA 2 programmatic structure incorporated in the budget structure & processes of MASA	13.1: By mid-December, 2019 13.2: By end-June, 2019 (initial, to ensure timing with budget cycle)	13.1 Technical Council and Consultative Council, facilitated by MASA/DPCI; 13.2 MASA/DPCI, in collaboration with relevant departments and MEF
14.0 Launch PNISA Phase 2	14.1: PNISA Phase 2 launched, and reflected in the FY20 budget of MASA, Provinces, and participating agencies)	By end-January, 2020	MASA/DPCI, in collaboration with relevant departments and Provinces, AGRED
15.0: Conduct Annual Reviews and Relevant Adjustments (as part of pro-active JSR process)	15.1: Prepare TOR for Annual JSR of PNISA 2; 15.2: Conduct JSR (and recruit consultant(s), as needed 15.3: Review and endorse findings and recommendations, and approved action plan;	By April, of each year, to ensure inputs for the planning of the next fiscal year budget	MASA/DPCI, in collaboration with relevant departments and Provinces, AGRED
16.0 Conduct MTR of PNISA II	16.1: Prepare TOR for MTR of PNISA 2; 16.2: Conduct MTR (and recruit consultant(s), as needed); 16.3: Review and endorse findings and recommendations, and approved action plan (in time for budget cycle of 2023);	16.1: By Jan., mid-2022 16.2: Complete by mid-April, 2022 16.3: By end-April, 2022	MASA/DPCI, in collaboration with relevant departments and Provinces, AGRED