Policies and institutions shaping the business enabling environment of agrifood processors in Senegal

AN ANALYTICAL REVIEW OF THE LITERATURE FOR INTEGRATED POLICY MAKING
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by

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Food and Agriculture Organization of the United Nations
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Acronyms

ADEPME  SME Development Agency of Senegal
AfDB  African Development Bank
ANPEJ  National Youth Employment Agency
ATCL  Association of Local Cereals Processors
CNCAS  National Agricultural Credit Fund of Senegal
DPME  Department of Small and Medium Enterprises
ECOWAP  common agricultural policy in West Africa
FAO  Food and Agriculture Organization of the United Nations
FONGIP  Priority Investment Guarantee Fund
FONSIS  Sovereign Fund for Strategic Investments
GDP  gross domestic product
GIE  Group of Economic Interests
GOANA  Grand Agricultural Offensive for Food and Abundance
HR  human resources
IFAD  International Fund for Agricultural Development
IFC  International Finance Corporation
ILO  International Labour Organization
IMF  International Monetary Fund
ISRA  Senegalese Institute of Agricultural Research
LOASP  Agro-Sylvo-Pastoral Orientation Law
MFI  microfinance institutions
NGO  non-governmental organizations
OECD  Organisation for Economic Co-operation and Development
PADAER  Agricultural Development and Rural Entrepreneurship Programme
PAJER  Programme to Support Youth Employment in Rural Areas
PDZP  Project to Open Up Production Areas
PNIA  National Agricultural Investment Programme
PO  producer organizations
PPC  Community Roads Project
PRACAS  Accelerated Programme for Agriculture
PRODAC  National Programme of Community Agriculture
PSAOP  Agricultural Services and Producer Organizations Support Programme
PSE  Emerging Senegal Plan
PSMN  Strategic Multi-Sectoral Nutrition Plan
PwC  PricewaterhouseCoopers
REVA  Return to Agriculture
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAED</td>
<td>Senegal River Valley Irrigation Development Agency</td>
</tr>
<tr>
<td>SENELEC</td>
<td>Senegal National Electricity Agency</td>
</tr>
<tr>
<td>SMAE</td>
<td>small and medium agrifood enterprise</td>
</tr>
<tr>
<td>SME</td>
<td>small and medium enterprise</td>
</tr>
<tr>
<td>SODAGRI</td>
<td>Agricultural and Industrial Organization of Senegal</td>
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<tr>
<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>VAT</td>
<td>value added tax</td>
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<tr>
<td>vTPA</td>
<td>voluntary third-party assurance</td>
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<td>WRS</td>
<td>warehouse receipt systems</td>
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Executive summary

Small and medium agrifood enterprises (SMAEs) such as processors, transporters and other service providers, play an important role in achieving sustainable development objectives. For instance, they connect farmers to urban markets; make significant investments in rural areas; provide employment to vulnerable populations such as women and youth; and propel the modernization of agrifood value chains (Barrett, Reardon, Swinnen and Zilberman, 2020; Reardon et al., 2019). In sub-Saharan Africa where agriculture comprises 53 percent of total employment (LOSTAT, 2021) and 15.5 percent of gross domestic product (GDP) (World Bank, 2020), supporting SMAEs can have great implications for pro-poor growth and rural transformation.

To support SMAEs in fulfilling their potential, the Food and Agriculture Organization of the United Nations (FAO) has been dedicating research to better understand their policy and technical needs. This publication is such an output and aims to provide an assessment of the policy and institutional framework in Senegal shaping the business models of small and medium agrifood processors. This systemic appraisal of Senegal’s business enabling environment for SMAEs was cross-fertilized with an analysis of the business models of three rice millers, resulting in a related FAO technical study The role of small and medium agrifood enterprises in food systems transformation: the case of rice processors in Senegal (Ilie and Kelly, 2021).

The analyses were carried out using a multidisciplinary agrifood systems approach, which looks at policies and institutions related to procurement, operations, logistics, finance, marketing and sales, human resources, and strategic partnerships. Due to its well-articulated policy documents and the extensive research on various aspects of the business enabling environment conducted in the country, Senegal represents a compelling case to illustrate the links between policies and the activities of agrifood processors. The examination of the institutional and policy environment affecting SMAEs in Senegal leads to several conclusions and lessons in relation to each specific business component, as follows.

**Procurement.** The Government of Senegal has shown great commitment to enabling farm-level production; to maximise returns, however, further investments in agricultural production should be paired with attention to the mid and downstream segments of the value chain, including storage, transportation, or marketing. While improved production and better organization of supply will facilitate food processors’ access to higher quality inputs, better value chain coordination is needed to make downstream segments (e.g. manufacturing, transport, branding, retailing) more attractive to investors. To encourage private sector investments, the government can also strengthen agrifood safety and quality control, address land tenure constraints, and promote the role of producer organizations (POs) in the aggregation and commercialization of agricultural produce. Support for agriculture would benefit from the pooling of government resources and capacities of institutions; broader impact can also be achieved through stronger cross-programmatic coordination, particularly given the multitude of policies targeting the sector.

**Logistics.** Quality of infrastructure – which is a key prerequisite for efficient logistics – is prioritised in the country’s policy framework. Nonetheless, assessments can further be conducted to understand the specific logistical constraints of SMAEs in rural areas so that policies and strategies better reflect their needs. In particular, improving transportation infrastructure can yield important returns for the operations of these businesses.

**Operations.** While progress is noted such as with respect improving electricity cut-off time, operating in rural areas brings expenses that make it difficult for businesses to compete against imports. Weaknesses include low electricity rates and high costs, or lower water supply coverage. These constraints are properly identified by the government in its policy documents; it is yet to be seen how these translate at the implementation level. Further, the heavily regulated input and service provision markets still present an important challenge for agrifood enterprises as these impose high costs of electricity, transportation, water and sanitation, especially in rural areas.

**Finance.** The government has established several support structures to stimulate credit to SMEs and agrifood businesses. Literature indicates that the impact of such initiatives is hindered by the firms’ poor financial skills and financial institutions’ lack of knowledge about the agrifood or SME sector. Further, taxes are a great challenge for SMEs and represent the main factor impeding informal enterprises from formalizing. There is also a lack of

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1 This section draws extensively on Wellen and van Melle (2017).
knowledge on financial products such as microcredit, or insurance. Success is noted in providing finance to the rice sector such as through agricultural leasing or warehouse receipt systems (WRS). These schemes can be expanded to other commodity sectors following more in-depth impact assessments.

**Marketing and sales.** Imported food is often preferred by Senegalese consumers as it is perceived to be of higher quality than local products. Further, the high operational and logistics costs incurred by domestic manufacturers make local foodstuffs more expensive than imports. Initiatives promoting the consumption of local food can be supported by the government, and paired with efforts at making products more affordable to the population.

**Human resources.** Enhancing value addition along the agrifood value chain has the potential to create employment in the sector which is currently characterised by unrealized potential. Ensuring the availability of skills is essential for the sector to grow; while capacity-building schemes are in place, these are rather fragmented and do not hold potential for wider, systemic impact. Integrating an agrifood relevant curriculum into the education sector can yield more sustainable results.

**Partnerships.** There are associations representing firms in the country, but agrifood sector representation is rather limited. In this context, the government or the development community can play a convening role, bringing actors together at roundtable discussions or networking events. Efforts could be dedicated to making existing associations more inclusive to SMEs and agribusiness.

**Cross-cutting issues.** Food safety and quality is an area that deserves further attention from authorities and development actors; strengthening compliance across the whole value chain is necessary not only to ensure competitiveness but also to safeguard the health of consumers. The government’s sectoral approach in areas such as nutrition, means that strategies often do not consider the specific needs of SMAEs which are inherently characterised by a lack of resources. Similarly, environmental compliance and gender equality strategies have been established, but lack an SMAE-tailored focus. Overall, since SMAEs experience challenges that differ from those of larger businesses or SMEs in other sectors, they might require a distinct set of incentives to engage in sustainable practices.
1. Introduction

1.1. Background

The importance of small and medium agrifood enterprises (SMAEs) has recently been explored in the literature on the “hidden middle” (Reardon, 2015), which asks for more focus to be placed on this segment of the value chain (including rural and urban traders and retailers, truckers, third-party logistics firms, storage service providers, and processors) in research and policy formulation. Research from developing regions shows that domestic SMAEs in the midstream of value chains are able to make significant grassroots investments in rural areas and to connect farmers with growing urban demand (AGRA, 2020; Reardon, 2015; Reardon et al., 2013). Additionally, these companies can offer a wide range of affordable local products, create employment opportunities inclusive of women and young people, and generate demand for infrastructure upgrades (Kelly and Ilie, 2017). In the context of imperfect markets and poor institutional support, SMAEs can create their own internal micro-enabling environment to overcome constraints and take advantage of opportunities in the chain (Kelly and Ilie, 2017). By doing so, they are not only generating profits but also creating economic and societal value in their local communities. The food processing sector, in particular, can play a strategic role in the growth of developing countries in terms of export earnings, employment opportunities, domestic industry restructuring and dietary issues (FAO, IFAD, UNICEF, WFP and WHO, 2021; FAO, 2020a; Wilkinson, 2004).

These small and medium African agrifood enterprises are faced with a market opportunity that would allow them to fulfill their potential in contributing to rural transformation and making agrifood systems more inclusive. The domestic markets in which SMAEs operate have expanded six-to eight-fold over the past decades and will continue to enlarge considerably in the years to come (Reardon et al., 2013). However, “in order to compete successfully with imports in their own growing domestic and regional agribusiness markets, African farmers and agribusinesses will need to improve value chain efficiency at all levels” (Reardon et al., 2013). The recent transformation of agrifood systems in Africa (e.g., diet and shopping changes, expansion of supermarkets and fast-food chains, growth of rural-urban supply chains) has brought benefits such as income opportunities but is also putting pressure on value chain actors to technologically upgrade in order to keep up with the fast-changing trends (Reardon et al., 2019).

SMAEs in sub-Saharan Africa often face similar constraints as smallholders such as lack of suitable financial products, missing support services, or weak infrastructure and high transaction costs (see Eskesen, Agrawal and Desai, 2014). Being inherently small also means that SMAEs lack economies of scale and have a limited base of internal resources (Welsh and White, 1981). These are all factors that hinder the ability of small and medium food processors in sub-Saharan Africa to respond to an increasingly urbanized market and that expose them to the risks of being excluded from modern agrifood chains (Reardon and Berdegué, 2002; Weatherspoon and Reardon, 2003). So far, however, the development community has focused on increasing farm-level production to meet demands but “equally critical are the supply chains that connect farmers to urban markets” (Reardon, 2016).

Despite the significant potential that these small actors have in linking poor farmers to markets and in contributing to overall rural transformation, they have been neglected in policy formulation and support initiatives (van Manen, 2018; Nagler and Naude, 2017). As policy often highlights the need for small and medium enterprises (SME) to develop competitive business models, especially in the context of increased internationalization, more research is necessary to understand how these are shaped by the inherent characteristics of small firms and the unique conditions provided by developing countries (Child et al., 2017).

Against this background, the Food and Agriculture Organization of the United Nations (FAO) is conducting research on small and medium agrifood processors in different contexts in sub-Saharan Africa to identify the factors that could enable them to survive and compete in an increasingly internationalized market while also fulfilling their role in rural and agrifood systems transformation. This paper represents the first output of the research process; more specifically, this analysis provides an overall assessment of the policies and institutions shaping the business enabling environment of food processing small and medium enterprises (SME) in Senegal up to 2019. The wider research project under which this paper was prepared is concerned with the rice processing sector during the period 2010–2019, resulting in a related country case study for Senegal during that period (see Ilie and Kelly, 2021). As such, the analysis in this paper is also limited to the same period where publicly available
documentation allowed, with the objective of assessing the interplay between different sectoral policies that may impact on the rice sector. The secondary data used in this paper and the primary data collected through semi-structured interviews with rice processors in Senegal are aligned in a final analysis that allows for the formulation of policy recommendations specific to the local context and tailored to the unique features of the examined enterprises (see Ilie and Kelly, 2021).

The paper is organized as follows. The following section presents the methodology of the study and its limitations. This is followed by a general overview of SMEs and agribusiness in the country and their enabling environment to gain an overall understanding of the context in which SMAE processors operate. Section 3 is structured according to various business components (as identified in the methodology section), namely procurement, logistics, operations, finance, marketing and sales, human resources, and partnerships. It looks at the most relevant issues and policies pertaining to each business component. Each section concludes with a discussion based on the identified policy and institutional structures. The paper also includes a summary of the findings derived from the previous sections.

1.2. Research objective and methodology

The objective of this working paper is to identify and discuss institutions and policies in Senegal in order to better understand the external environment in which food processors operate, particularly small and medium ones, and how this might constrain or enable their survival and growth. As the wider project under which this document is prepared is concerned with the rice sector, we also delve into rice sector-specific issues where the availability of data allows. The objective of the analysis was to contribute to the FAO technical study on *The role of small and medium agrifood enterprises in food systems transformation: the case of rice processors in Senegal* (Ilie and Kelly, 2021) published early in 2021 and which mainly covers the period 2010–2019. As such, this paper’s scope is also limited to the same period and some of the issues raised may have well been addressed in updated policies. Nonetheless, the intention of the paper remains to contribute to Senegal’s agrifood systems framework by providing an analysis of how different, but related policy paths, are interrelated, synergetic and at times, duplicated, with a view to strengthening integrated policy making for sustainable agrifood systems transformation.

While the literature provides many definitions of the notions of institutions and policies, this paper is only concerned with two dimensions: (1) the mechanisms designed to influence the behaviour or trajectory of economic actors (i.e., policies); and (2) the institutions empowered with the role of operationalizing these mechanisms. Generally, good institutions can support economic growth by encouraging investment, technical innovation or a more efficient and effective economic organization (Wiggins and Davis, 2006).

As such, desk research is conducted in order to assess the policy and institutional environment in which Senegalese small and medium food processors conduct their business. National policy papers – most of them available on the ministries’ websites (including the Ministry of Agriculture and Rural Equipment; the Ministry of Economy and Finance; the Ministry of Industrial Development and Small and Medium Industries; the Ministry of Education; the Ministry of Youth, Employment and Citizen Construction; the Ministry of Environment and Sustainable Development; the Ministry of Women, Family and Children; the Ministry of Trade and SMEs; and the Ministry of Energy and the Development of Renewable Energies) – are examined to identify those strategies that are relevant to SMAE processors. Many tools meant to operationalize national strategies have been implemented in partnership with development actors; thus, country or industry assessments as well as various project reports developed by these agencies have also been inspected to determine those policy instruments that are linked to SMAE processors.

It is worth noting that since this paper relies on the documents that are publicly available, it is policy objectives that are examined (de jure) rather than their outcomes (de facto). However, efforts have been made to discuss results from impact assessments (which are mostly available for past strategies and less available for more recent ones) and also findings from studies or surveys that assess the realities faced by SMAEs in general.

The conceptual framework guiding the overall study, including the development of this specific paper, is based on Porter’s value chain (Porter, 1985), which classifies the activities that a company undertakes to capture and generate
value into primary – inbound logistics, operations, outbound logistics, marketing and sales, and services – and secondary – procurement, human resource management, technological development, and firm infrastructure, as shown in Figure 1.

Figure 1. Original Porter’s value chain framework


Porter’s framework has been adapted in this study to fit the business model of SMAEs in sub-Saharan Africa (see Box 1 for an overview of the business components included in the analysis). This is to allow for the identification of constraints and enablers through the lens of a sub-Sahara African SMAE (see Figure 2).
The adjusted framework with its respective components is detailed in Box 1. The adapted model classifies activities into value-adding ones (i.e., logistics, procurement and operations), which look at how the commodity flows within the company, and into core management functions (i.e., finance, marketing and sales, human resources and partnerships), which indirectly add value to the product by supporting all other activities.

Notwithstanding the delineation of these classifications for the study, all business components and technical areas are closely interdependent and have an effect on one another during the day-to-day process of running a small business. While the specific business components show the "how" (e.g., how finances are managed), an examination of the business components altogether provide a more contextual understanding. For example, if the financial situation of a company is not well positioned, the firm might choose to design its operations in a way that neglects the product's nutritional content in order to cut costs. Thus, to better understand the business model and have a clear picture of why certain business components are conceived the way they are, an analysis of the whole firm structure is required.

Lastly, as depicted in Figure 2, the framework has also been adjusted to include various FAO priority areas\(^2\) that are linked to the activities in which these firms engage, namely food safety and quality, nutrition, decent employment, rural investment and finance, and farmer-market linkages.

\(^2\) The adjusted conceptual framework based on Porter’s value chain links the business activities of a food manufacturer with several FAO areas of work to assess the implications of these activities on the community and markets where they operate (see Kelly and Ilie, 2021). Understanding the implications of food manufacturing firms’ activities on aspects such as food safety, nutrition, employment, investment, and food losses and waste, will better inform the design of policies that target the business enabling environment for this subsector.
The methodology and conceptual framework guiding the study are described in-depth in Kelly and Ilie (2021). Further, in addition to the policy areas described, the document also looks at general issues in relation to the wider enabling environment for agribusiness and SMEs, including the status of digital technology in the country (see Section 1.3).

Box 1. Framework for analyzing the business model of agrifood small and medium enterprises (SMAEs)

The conceptual framework guiding the study is based on Porter's value chain model, which has been adjusted to fit the business models of SMAEs and consists of the following components:

1. Core management functions

**Procurement.** This component refers to the company's supply strategies, which, together with inbound logistics activities, shape the firm's role in linking farmers to markets.

**Finance.** This business function consists of two elements: access to finance and financial planning, which are essential for business success as the way in which a company manages and allocates its funds can determine its organizational strength and enable it to maximize its commercial value.

**Human resources management.** Human capital, through the knowledge and skills of employees, can provide the basis for building competitive advantage. Human resources management becomes a tool through which this capital is employed to support business strategy.

**Marketing and sales.** A company's sales strategy is instrumental to bridging the gap between consumer needs and products offered, capturing market share and enhancing existing relationships with customers. Marketing ultimately drives sales by raising awareness of what the business offers.

**Partnerships.** This function refers to the firm's efforts to develop and manage relationships with various actors, including development agencies, non-governmental organizations (NGO) or government institutions, to support their activities and create value.

2. Value-adding activities

**Logistics.** Inbound and outbound logistics are those activities that are related to the flow of materials and information such as transportation, warehousing, procurement, packaging and inventory management, which have a direct impact on the products' quality, safety and access to markets.

**Operations.** This component covers those “in-house” activities adding value to the final product, including the actual processing that takes place within the factory.


SCOPE AND LIMITATIONS

This specific paper is concerned with the business enabling environment shaping the role of SMAE processors in agrifood systems transformation in Senegal.

A wide range of papers and reports already discuss the external environment affecting the Senegalese industry (Cissé, Choi and Maurel, 2016), the private sector (IMF, 2017a; IFC, 2020), or even aiming attention at SMEs (Crick et al., 2016) and agribusiness in particular (Matsumoto-Izadifar, 2009) to provide policy recommendations and ideas for reforms. What this working paper does is to pull together the information about policies and institutions that are most relevant to SMAE processors and their role in promoting agrifood systems transformation by also taking into consideration cross-cutting policy issues such as nutrition, decent employment, access to finance, or food safety and quality. Where literature is available at the sector level, this working paper also enters into the analysis of rice chains in the country in order to illustrate the points made and provide more concrete examples. This study, however, is subject to several limitations. As Senegal's private sector is characterized by a high degree of informality, obtaining reliable and representative data is difficult. Most of the enterprises are unregistered and not taken into account in surveys, making it impossible to develop an absolutely illustrative picture of the sector. Such surveys on which this paper builds include the 2014 World Bank Enterprise Surveys as well as Senegal’s 2014 Direction des Petites et Moyennes Entreprises (DPME) National Survey of SMEs.
Second, this paper relies on secondary data; while only publications from reputable organizations or specialists were selected, there is always a risk of bias or poorly used data collection methods made by researchers or authors.

Third, as indicated in the introduction, the inputs for this document were sourced and written while the country was already transitioning to a new policy framework, with most of the analysis taking place before its contents were publicly available. As such, this paper does not look at the Adjusted and Accelerated Priority Action Plan (PAP 2A 2019–2023), the Emerging Senegal Plan II 2019–2023 (which also includes the national recovery plan to tackle the pandemic consequences) or the Accelerated Programme for Agriculture 2018–2022 (PRACAS II), and the policies governed by these strategies. As limited documentation is available online concerning the new strategies at the time of writing this document, it is possible that a number of issues raised in this paper have already been addressed by the government. Nonetheless, the analysis in this paper contributes to informing the cross-fertilization of policies and integrated policy making for agrifood systems transformation.

And last, while a rigorous process has been carried out to identify the most relevant information, providing an exhaustive set of country policies and strategies affecting SMAE processors is difficult, especially as this is contingent on the availability of documentation.
2. Country context – agrifood systems enabling environment and implications for agrifood small and medium enterprises

Senegal’s national development strategy, known as the Emerging Senegal Plan (PSE, 2012–2035), reveals that agriculture ranks high in the country’s development agenda. The strategy acknowledges that the sector is the largest source of income for most of the poor, and its important unrealized gains need to be cultivated. For instance, household survey data shows that investments in agriculture in the Senegal River Valley have significantly contributed to household income growth and poverty reduction (Van den Broeck and Maertens, 2017). More specifically, over the period 2006–13, average income in the region grew with 4.3 percent annually, poverty reduced with 29.5 percentage points, and inequality with 4.2 percentage points; these trends have driven particularly by increased crop and livestock production and the development of a horticultural export sector (Van den Broeck and Maertens, 2017).

The first of the three PSE pillars proposes five critical areas of intervention in relation to agriculture: (1) the initiation of 100–150 projects targeting the high value-added and livestock sectors; (2) the development of three cereal corridors; (3) the initiation of 150–200 projects aimed at supporting family agriculture; (4) the restructuring of the groundnut sector; and (5) the creation of three integrated agro-poles with the purpose of stimulating national and foreign investment, diversifying engines of growth and strengthening the resilience of the economy. These five key activities receive 11.1 percent of government funding under PSE, exceeded only by the infrastructure and energy sectors in terms of budget allocation. Indeed, government expenditure allocated to agriculture has increased by more than 10 percent annually since 2009, when the sector was established as a key driver of economic growth.

THE POLICY FRAMEWORK GOVERNING AGRICULTURAL DEVELOPMENT IN SENEGAL

The agricultural component of the PSE is represented by the Accelerated Programme for Agriculture, also known as Cadence de l’Agriculture Sénégalaise (PRACAS) initiated in 2014. The ten-year plan envisions a “competitive, diversified and sustainable” agricultural sector. Box 2 describes the plan’s main objectives.

<table>
<thead>
<tr>
<th>Box 2. PRACAS objectives</th>
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<tr>
<td>The five objectives of PRACAS are:</td>
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<tr>
<td>• modernizing the family farm through farmer training and equipment financing;</td>
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<tr>
<td>• encouraging an entrepreneurial class that is environmentally conscious, rural, and agriculturally based, and is built around agribusiness and family farm synergy;</td>
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<tr>
<td>• organizing the downstream sub-sectors;</td>
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<tr>
<td>• involving youth and women in the agriculture sector by establishing job-creating agricultural farms, building technical knowledge, and strengthening adapted equipment; and</td>
</tr>
<tr>
<td>• building the resilience of vulnerable populations.</td>
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The first phase of the programme3 (2014–2017) focused on increasing and improving the performance of the groundnuts sector, developing an off-season fruit and vegetable industry, and achieving self-sufficiency in onion and rice. Steady increases were achieved between 2013 and 2017 (160 percent, 74 percent and 108 percent, respectively) (World Bank, 2018a). Projections by AfricaRice also reveal that the country will achieve 113 percent self-sufficiency in rice production by 2025 if it follows the Continental Investment Plan for Accelerating Rice Self-sufficiency in Africa (AfricaRice, 2018). Subsidies on agricultural inputs, especially fertilizers, are one of the

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3 The second phase of the PRACAS (2018–2022) is currently ongoing but limited documentation is available.
government’s preferred tools to support agriculture. Research shows that this has indeed contributed to the increased productivity of farmers (Seck, 2017).

In particular the rice sub-sector has benefited from the largest amount of funding, amounting to USD 702 million, representing 73 percent out of the total budget (USD 960 million) allocated to PRACAS (Senegal Ministry of Agriculture, 2014). An analysis of cost distribution reveals that investments in the rice sector mostly target fertilizers (44.7 percent), followed by irrigation (19.11 percent); with equipment receiving 8.98 percent, and training receiving the least amount of funding at 0.47 percent. Investments in value addition were only considered for the fruit and vegetables sector.

The Senegal River Valley Irrigation Development Agency (SAED) plays an important role in operationalizing the country’s agricultural strategy. SAED represents a semi-public agency promoting rural infrastructure and investment (Matsumoto-Izadifar, 2008). Box 3 provides an overview of the institutions governing PRACAS and development partners.

**Box 3. Institutions governing PRACAS and development partners**

The implementation of PRACAS falls mainly under the mandate of the Ministry of Agriculture and Rural Equipment through the Directorate of Agriculture as well as the Directorate of Analysis, Prevision and Agricultural Statistics.

Cross sectoral collaboration is incumbent in PRACAS with, for instance, the Ministry of Environment also involved in programming due to several overlaps with its mandate. Financial support is provided by partners to the Ministry of Agriculture, which then decides on budget allocation. Important donors include the European Union, the United States Agency for International Development (USAID), FAO, the International Fund for Agricultural Development (IFAD) and the African Development Bank (AfDB). Other relevant agencies include the National Agency for Agricultural Development (ANIDA) as well as the Agricultural and Industrial Organization of Senegal (SODAGRI).

The Government of Senegal acknowledges the need to improve mechanization in order to enhance value addition and this represents a central objective under PRACAS. The strategy for agricultural mechanization is led by the Ministry of Agriculture and Rural Equipment, while technological research is conducted by the Senegalese Institute of Agricultural Research (ISRA), as well as the Institute of Food Technology (ITA), which has an agribusiness focus (Malabo Montpellier Panel, 2018).

More recently, a leasing system, funded by USAID, for agricultural equipment (such as harvesters) in the rice sector has seen an increase in the diversification of activities and stimulated business opportunities in the rice sector (USAID, 2019).

PRACAS has been designed in support of previously initiated strategies also targeting the agricultural sector, more specifically the National Agricultural Investment Programme (PNIA), and the Agro-Sylvo-Pastoral Orientation Law (LOASP). The table below displays the relationship between PNIA, PRACAS and PSE.
Table 1. Relationships between national frameworks for agricultural development.

|-------------------------------|------------------|---------------------|
| 1. Achieve food security and redress food trade balance deficit | 1. Sustainable growth of agricultural production and efficient agricultural development.  
2. Intensification and diversification of irrigated crops.  
3. Modernization of family farms and intensification of agricultural activities to increase export volumes. | 1. Support family farms through intensification, better marketing and better-quality management.  
2. The emergence of an environmentally conscious, rural and agricultural-based entrepreneurship, based on a value-chain approach and built around agribusiness and family farm synergy. |
| 2. Develop competitive, high value-added sectors | 4. Enhance the professionalization of actors, support the process of unionization and initiate a social protection mechanism.  
5. Strengthen the system of prevention and manage food crises. | Rice self-sufficiency in 2017, with a production of 1 600 000 tonnes of paddy.  
Onion self-sufficiency in 2016, with a production of 350 000 tonnes.  
Improving the performance of the groundnut sector, with a production of 1 000 000 tonnes and an export volume of 100 000–150 000 per year.  
Developing the off-season fruit and vegetables sectors, with an exports volume of 157 500 tonnes. |
| 3. Ensure socio-economic equilibrium and control of rural migration by providing employment and stimulating the rural economy | 3. Women and youth involvement.  
4. Building the resilience of vulnerable populations. |  |  |


See Annex for a more comprehensive overview of PNIA and other frameworks that have contributed to the state of agriculture in Senegal up to the year 2017. Additionally, sector-specific development programmes were also launched to complement these nation-wide strategies, mainly targeting maize, cassava, sesame, hibiscus, rice and sunflower.

Figure 3 shows the evolution of Senegal’s priority areas concerning the agricultural sector since 2004.
Figure 3. Main policy frameworks targeting the agricultural sector in Senegal

Historically, Senegal has dedicated important efforts into boosting agricultural production, mainly through area expansion and productivity intensification.

The enabling environment pertaining to farm production is well documented in the literature as outlined in country context Section 1.3. Against this background, Senegal has made notable progress on addressing several challenges aimed at boosting productivity; for example, see, Figure 4 and Figure 5 looking at the yields and area harvested for cereals and rice.

Source: Authors’ own elaboration.
Food manufacturers, including rice millers, have benefited from these notable increases in production, which according to the literature have mainly been driven by the enlargement of cropped areas and enhanced use of inputs, rather than by improvements in total factor productivity (World Bank, 2018a). Also compared to other sectors, and despite improvements, agriculture still has the lowest productivity among sectors in Senegal (World Bank, 2018a). Investments in creating the markets for small and medium-sized local agribusinesses to prosper, as well as in skills development and education for young people, is a way to stem migration and create employment in rural areas, as evidenced by island of success in the rice sector (Glatzel, 2018).

The productivity bottleneck is attributed primarily to land governance, poor infrastructure and logistics (World Bank, 2018d) due to a series of constraints, typical of smallholder farming throughout the region, and widely discussed and analysed in the literature. The World Bank (2017a) carried out a ranking of constraints hindering productivity in Senegal. The assessment found that a lack of access to fertilizer represents a significant weakness, due to a poor regulatory framework governing its importation and distribution, followed closely by access to on-farm machinery and mechanization, as Figure 6 shows (World Bank, 2017a).
Productivity failings are also evidenced by post-harvest losses across three key sectors, including rice, supported by PRACAS where storage rates are significantly inferior to production volumes (OECD, 2017a). The Organisation for Economic Co-operation and Development (OECD) study also attributes productivity weaknesses to a lack of adoption of the value-chain approach under PRACAS, due to a lack of alignment to address common challenges across sectors as well as overlooking the use of the programme to improve the vertical connectivity across value chain partners (OECD, 2017a).

2.1. Senegal’s enabling environment for agribusiness and small food manufacturers

It is against this background that agribusiness firms, which are dependent on the agriculture sector for raw materials, operate. Similar to other country contexts, post-farm-gate enterprises are governed by a different set of policies and institutional mechanisms. Under the PSE, Senegal acknowledges the important links between agriculture and agro-industry or other sectors such as transportation. Focusing on creating and developing agro-poles, the government, under the PSE, intends to converge services and design policies to allow for a developed and coordinated agribusiness sector, in particular for livestock, fruit and vegetables, fisheries and aquaculture (World Bank, 2018a).

Currently for the food manufacturing sector, including rice milling, the most pertinent policy is the Industrial Sectoral Development Policy Paper published in 2016 (Republic of Senegal, 2016a). The plan focusses on improving companies’ management and production in line with international standards, promoting private investment and expanding the industrial base.
Manufacturing represents the most important sector within industries, with food contributing to 5 percent of the economy and accounting for 41 percent of total industrial production (Senegal Agency of Statistics, 2019a). In addition, food and beverage processing represents more than 70 percent of agro-industry value added (FAO, 2017) and is the second most developed in West Africa, after Côte d’Ivoire. The main food exports pertain to the “frozen fish” and “soups and broths” categories, which make up 6 percent and 3 percent respectively of total exports.

While small- and medium-sized food manufacturers play an important role, the fact that very few firms are formally registered in Senegal makes it difficult to provide a detailed picture of the SME sector. It is nonetheless estimated that about two-thirds of firms engage in services, while the rest operate in manufacturing, including agribusiness (Wellen and van Melle, 2017). The SME Agency of Senegal defines SMEs as those companies that have between 5 and 100 employees, and generate an annual turnover of XOF 50 to XOF 200 million (USD 82 600 to USD 330 410) (Direction des Petites et Moyennes Entreprises, 2010 in Wellen and van Melle, 2017). Even though SMEs account for around 90 percent of total formal businesses in Senegal, they provide 40 percent of total employment and account for only 20 percent of total value added (Direction Generale des Impots et des Domaines, 2013). However, most SMEs are primarily informal and are estimated to number 243 000 firms out of 250 000 (Wellen and van Melle, 2017).

The Ministry of Industry implements the industrial policy, which is also supported by the Senegalese Standardization Association and the Agency for Investment and Major Works.

DPME is the public structure established to specifically support the development of SMEs in the country. The agency disseminates best practices but also promotes formalization by providing support and information. The Government of Senegal acknowledges the importance of the country’s SME sector and, as such, has implemented several initiatives. These include creating a bank and guarantee fund (see Financial Management) and initiating several public-private partnerships (Wellen and van Melle, 2017).

Support to the business community in general in Senegal is favourable compared with neighbouring countries in the sub-Saharan region. Since 2013, the government has implemented the Business Environment and Competitiveness Reform Program (PREAC), with policies including the creation of one-stop shops for setting up a business, the dematerialization of customs procedures, the reduction of taxes for investing companies and various tax incentives such as to encourage exporting. As result, the country has made notable progress in improving its business enabling environment, and it was classified as a top ten reformer in 2016 (Senegal Ministry of Economy and Finance, 2021). Today, the country fares relatively well in the ease of doing business, with a score of 54.15, which is higher than the sub-Saharan average of 51.61 (World Bank, 2019a). Significant improvements have been made in the cost and time required to start a business, which have fallen by 43 percent and 90 percent respectively between 2004 and 2013 (World Bank, 2016a).

It takes an average of six days to start a business in Senegal, compared to the Organisation for Economic Co-operation and Development (OECD) countries average of 9.3 and the regional average of 23.3, with a ranking of 31 out of 140 countries (World Bank, 2019b). The government continues to implement measures to improve procedures for setting up a formal business, providing, for instance, a one-stop shop for business registration (Wellen and van Melle, 2017). Senegal has also made improvements in registering property and enforcing contract procedures, and it recently reduced the notary fees required for company incorporation (World Bank, 2018b).

Areas that require improvements, highlighted already in the literature, include the high costs of starting a business, which requires an average of 33.8 percent of gross national income (GNI) per capita (World Economic Forum, 2018a), supply, access to and cost of electricity, trading across borders (World Bank, 2018c), simplifying the taxation system and revamping taxes, as well as improving investor’s protection and property registration (IMF, 2017a).

Land tenure is also emphasized in the literature as one of Senegal’s greatest constraints to rural development and private sector investment, with interventions required to modernize the legal system governing land ownership in order to tackle the expansion of undocumented land market and rights, which have led to other complications such as a lack of property taxes or costly infrastructure construction (World Bank, 2017b). Nonetheless, the country is dedicating efforts into improving its land tenure system; land reform is a key commitment under the new PSE II (2019–2023) and a recent World Bank project is aiming to provide support in putting in place the
prerequisites needed for a national land rights registration operation (i.e., appropriate institutional framework, Land Information System, geodetic infrastructure, and human capacities) (World Bank, 2019c).

The country also takes part in the enterprise upgrading programme (Les programmes de mise à niveau des entreprises – PMN); selected companies receive grants covering 80 percent of a diagnostic study and upgrading plan, 30 percent of equipment and 70 percent of intangible investments. One-hundred-and-thirty firms were approved to receive financing since the programme was initiated. With respect to SMEs specifically, a modernization and upgrading programme was initiated in 2013 that prioritizes those companies in the Casamance region. Financing is provided for 70 percent of intangible investments, and 20 to 30 percent for equipment. Only 17 applications have been approved (WAEMU Secretariat, 2017).

Additionally, companies approved under Senegal’s Investment Code regime can benefit from a three-year tax exemption on imports of equipment on condition that it is not available locally. Manufacturing production or transformation activities are eligible for a minimum of XOF 100 million (USD 165 200). Machinery occupies a large part of Senegal’s import basket (WAEMU Secretariat, 2017).

**ACCESS TO DIGITAL TECHNOLOGY**

Digital technology is an important element in the wider business enabling environment. While many African countries are lagging in terms of technology adoption, progress in terms of digitalization has the potential to transform the continent; more specifically, ICT can improve the efficiency and transparency of government services, leading to significant savings. Technology can also support the development of more inclusive financial services, and better access to finance for SMEs. Additionally, digitalization can support the expansion of the service sector, and thus has the potential to generate more and better jobs (IMF, 2019a).

However, for this to happen, supportive policies need to be implemented. Market competition needs to be stimulated for businesses to adopt technologies and provide output at affordable prices. Better capital is also needed, including human, entrepreneurial and infrastructure for businesses to expand or to enter markets. And last, stronger capacity is needed for governments to increase investment in social protection (Choi, Dutz and Usman, 2019). More research is needed to understand how policies can best support the expansion of ICT in Africa and how the private sector can be leveraged for this purpose.

In Senegal in particular, the development of a digital economy has been slowed down by “inadequate regulatory framework, lack of competition and the complexity of the governance context with overlapping stakeholders’ responsibilities” (World Bank, 2019d). Recently, however, the government has demonstrated a commitment to address weaknesses in the legal and regulatory framework to improve the digital economy ecosystem. Further recommended measures to unleash the potential of a digital economy in Senegal include: enforcing a single governance framework to address the lack of coordination; ensuring affordability by promoting infrastructure-sharing or improving spectrum management and frequency allocation; expanding the adoption of digital financial services such as by updating the law on electronic transactions and setting by decree the cost of access to telecom infrastructure; or improving digital skills by integrating digital technology in all levels of the education system, or promoting the dissemination of a digital culture (World Bank, 2019d).

While the information provided above offers a general picture of the overarching enabling environment for SMEs and the agriculture sector within which food manufacturers operate, there are many gaps pertaining to the regulations, policies and institutions related to the specific governance of food manufacturing. It is against this background that FAO has adopted the methodology described in the introductory section in order to assess in more detail aspects of the enabling environment from the perspective of a food manufacturers business model, described in Figure 2.

The assessment will cover the core management components of a business model (procurement, human resources, finance, marketing, partnerships) and the value addition activities as the commodity flows through a food manufacturer (logistics – inbound and outbound – and operations).

In doing so, the literature review will highlight the policy and institutional environment relevant to each aspect of the business model with the objective of highlighting gaps and opportunities for convergence and synergies, particularly through an agri-food systems lens. Understanding the implications of food manufacturing firms'
activities on development outcomes including food safety, nutrition, employment, investment, and food losses and waste will better inform the design of policies that target the business enabling environment for this subsector and more broadly for SMEs operating in the food sector. The business activities described above are linked with the following policy areas.

FOOD SAFETY AND QUALITY
Ensuring the safety of food starts with the farm and ends with the consumer. It depends on all actors in the value chain contributing towards managing risks by adhering to good practices and carrying out necessary controls. Unsafe food, which is often not detectable by human senses, can have drastic public health consequences and affect trade. Food quality, on the other hand, refers to those attributes of the product that have an effect on its value to the customer or consumer, such as colour, origin, flavour, etc. (FAO and WHO, 2003). Activities performed specifically by millers, which can affect food safety and quality, are logistics (i.e., product handling, transportation, storage and packaging) and operations (i.e., in-house handling and processing of the product). Additionally, a company’s attention to food safety and quality is based on consumer demand, which can motivate or discourage investments in these areas.

Since investments by food businesses in food safety and quality can be cumbersome and costly, government intervention is often needed to guide and oversee SMEs’ adherence to good practices. More research is needed to understand how agrifood processors can respond to food safety and quality requirements, especially given the increasing complexity of standards demanded by globalized food chains. Box 4 provides an overview of the main policies and institutions relevant to food safety and quality in Senegal.

Box 4. Food safety and quality in Senegal
Food safety in Senegal is regulated by Food Law 66-48, signed in 1966, which gives authority to the Food Products Control Commission to regulate the safety of food or feed, including authorization for imported products (USDA, 2017). Senegal is noted as one of only a few low-income countries that have adopted specific regulations to ensure food safety during transportation (World Bank, 2018c).

In addition, the responsible body for overseeing food standards is the semi-state Senegalese Association for Standardization (ASN, 2019). The private sector is involved in the decision-making of the association, which is mainly funded by the government (55 percent). Quality in the food sector is rewarded through the "NS Qualité Sénégal" national mark, which is awarded to products after they are certified (WAEMU Secretariat, 2017).

Senegal has made important progress with respect to assuring food safety and quality, most notably in the fresh fruit and vegetables sector, which has successfully responded to international standards for exporting. Nonetheless, weaknesses remain as food and animal products have the lowest quality among sectors, which has increased only slightly over the past 30 years (IMF, 2017a).

FOOD LOSS AND WASTE
FAO defines food loss as the “decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, excluding retailers, food service providers and consumers”; food waste refers to the same problem but results from decisions and actions by retailers, food service providers and consumers (FAO, 2020b). Countries exhibit patterns of food losses and waste that differ based on their economic levels; as such, in lower and middle-income economies, post-harvest losses are more likely the result of inadequate infrastructure and technology. In developed economies, however, waste is higher because food is discarded by retailers or consumers due to such factors as cosmetic defects (Parfitt, Barthel and Macnaughton, 2010).

At the global level, 14 percent of the food produced is lost during the post-harvest stage of the agrifood system (FAO, 2019e). Both farmers and food processors have a major role to play in ensuring that food is not lost or wasted because of poor practices. In Senegal, food losses and waste, and post-harvest losses in particular, are still issues of major concern (see Box 5).
Box 5. Food losses and waste in Senegal

Food losses and waste are issues of major concern in Senegal. Productivity failings are also evidenced by post-harvest losses across Senegal’s main agricultural sectors, including rice, where storage rates are significantly inferior to production volumes (OECD, 2017a). Further, a lack of balance between up and downstream support leads to an increased likelihood of food losses due to missed value addition, which may also cancel or make redundant the progress made in farm-level production.

The government and donors acknowledge these challenges and various programmes have targeted the development of storage facilities; for instance, the Project to Open Up Production Areas (PDZP), co-founded with the African Development Bank, has developed storage facilities by constructing 30 warehouses for cereals, vegetables and peanuts (AfDB, 2018). While the programmes have primarily targeted storage facilities at the farm or farmer organizational level, the positive impacts on food quality and food loss reduction can also spill-over into benefits for food manufacturers. More recently, the government has aimed to tackle post-harvest losses by developing integrated agro-poles and agro-industrial parks (Bureau Opérationnel du Suivi du Plan Sénégal Emergent, 2020).

DECENT EMPLOYMENT

FAO defines decent employment as “work that provides a living income and reasonable working conditions” (FAO, 2019b). The International Labour Organization (ILO) has developed a set of indicators measuring decent employment that revolve around four main pillars, namely full and productive employment, rights at work, social protection and the promotion of social dialogue (ILO, 2019).

Rural areas are particularly known for poor working conditions as jobs there are mostly informal, with no contracts or protection, requiring long working hours, and providing low or unstable incomes. Those most vulnerable to these weaknesses are children, women, migrants, casual labourers and the elderly.

The analysis of both the human resources and procurement business component will add value to FAO’s work on decent employment as the way in which these two areas are designed by the SMAE can directly affect aspects such as working conditions among employers and suppliers, child labour or gender equality issues. Box 6 provides an overview of policies and institutions that concern aspects of decent employment in Senegal.

Box 6. Decent employment in Senegal

With respect to skills development, Senegal has dedicated important efforts both toward developing the capacity of SMEs and improving the skills of those seeking employment. However, weaknesses are noted with respect to pay and productivity and active labour policies. Many activities and programmes have been implemented in isolation, which has limited their impact. More collaboration with the educational sector is necessary to ensure the sustainability of training and educational activities.

With regard to gender equality and inclusion of young people, Senegal explicitly acknowledges the need to facilitate women’s and youth’s access to markets and to support their involvement in processing, agribusiness or rural entrepreneurial activities. This is reflected in its many projects targeting women and youth, often implemented with development partners, such as the Programme National des Domaines Agricoles Communautaires (PRODAC), which aims to establish agropoles to create employment for young people, the Programme d'appui à la promotion de l'emploi des jeunes en milieu rural (PAJER), supporting the promotion of youth entrepreneurship in rural areas, or the Appui à la Promotion de l’Emploi des Jeunes et des Femmes (PAPEJF) programme, which seeks to create decent jobs for women and youth by developing their skills and promoting SMEs. The relevant institutions for implementing these initiatives are the Ministry of Youth, Employment and Promotion of Civic Values, The National Youth Employment Agency (ANPEJ), the National Agency for Agricultural Development (ANIDA) and the Ministry of Women, Family, and Childhood.

RURAL FINANCE AND INVESTMENT

Investment is reliant on access to financial services, which are generally limited in rural areas where they involve more risks, higher transaction costs and historically low returns. Increases in food commodity prices, however, have opened up opportunities for profitable investments in agriculture and thus for poverty reduction in rural areas (FAO, 2008). Development actors concerned with rural finance are working towards ensuring that rural populations and agrifood actors have access to financial services such as commercial loans, microfinance products or money transfer facilities.

This FAO priority area is related to the finance component of SMAEs, which have been found to drive important grassroots investments in rural areas (Reardon, 2015); their ability to do this, however, depends on the availability of financial services that match their needs. Box 7 outlines several policies and institutions touching on rural finance and investment aspects in Senegal.

Box 7. Rural finance and investment in Senegal

Senegal acknowledges the lack of finance tailored to the specific needs of SMEs (Direction Generale des Impots et des Domaines, 2013), thus prioritizing the increase in credit options for these companies. It is for this reason that three lending and loan guarantee schemes for SMEs were initiated in 2013: the Priority Investment Guarantee Fund (FONGIP); the Sovereign Fund for Strategic Investments (FONSIS); and the National Bank for Economic Development (BNDE) (WAEMU Secretariat, 2017). Small manufacturing companies can also avail themselves of support from the Industrial Upgrading and Modernization Office (BMN). SME-specific banks include Orabank and Cofina; concerning rural finance specifically, the National Agricultural Credit Fund of Senegal (CNCAS),4 which represents the financial arm of the government, is the main player in the sector. The agency provides more favourable loan terms than commercial banks or microfinance institutions (IFAD and UNIDO, 2015).

Nonetheless, paying taxes remains extremely challenging for SMEs in Senegal as they are perceived as too high and the tax processes too cumbersome. This constrains the formalization of the small business sector (Wellen and van Melle, 2017), especially in rural areas where firms incur higher operational costs.

FARMER-MARKET LINKAGES

Approaches that connect smallholders to markets have been a primary focus of development actors as part of rural transformation programmes. Generally, research points to the fact that different farmer segments are suited to different markets due to their heterogeneity and distinct needs (Ferris et al., 2014). Contract farming, for instance, is a popular approach promoted by development actors and adopted by businesses. When done correctly, contract farming can lower risks for both parties, ensure quality, quantity and fair payment. In the context of poor enabling environments, creative contract farming can even overcome legal or institutional constraints (FAO, 2013).

Nonetheless, analysing linkage models in different contexts is important for designing more appropriate policies aimed at providing various smallholders with access to markets. Examining the procurement and inbound logistics component of an SMAE can reveal what works for buyers in terms of smallholder integration and how their role in linking farmers to markets can be improved. Box 8 provides a brief overview of the main policies and institutions governing farmer-market linkages in Senegal.

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4 Currently known as La Banque Agricole.
Box 8. Farmer-market linkages in Senegal

The implementation of Senegal’s agricultural development strategy falls under the mandate of the Ministry of Agriculture and Rural Equipment. The Ministry of Environment is also involved in programme discussions as there are many overlaps with its mandate. Development partners include the European Union, the United States Agency for International Development (USAID), FAO, the International Fund for Agricultural Development (IFAD) and the African Development Bank (AfDB). The Senegal River Valley Irrigation Development Agency (SAED) also plays an important role in operationalizing the country’s agricultural strategy. It represents a semi-public agency promoting rural infrastructure and investment (Matsumoto-Izadifar, 2008). Other relevant agencies include the National Agency for Agricultural Development (ANIDA) as well as the Agricultural and Industrial Organization of Senegal (SODAGRI).

There were some notable improvements in the production of several strategic commodities due to Senegal’s extensive investments in agricultural infrastructure. However, the failure of applying an integrated value-chain approach has translated into challenges for actors further down the chain; for instance, quality control is still not well defined and there is no traceability mechanism among producers, processors and traders (Hathie and Ndiaye, 2015). This explains Senegal’s continued need to import food commodities despite major investments in domestic production.

The country’s agricultural development strategy is also criticized for dedicating only limited attention to the organization of agricultural producers and the presence of a large number of intermediaries. This discourages financial institutions, for example, from working with actors in the sector (OECD, 2017a). Dedicating more attention to these challenges and targeting not only production intensification but also the middle and downstream segment of the sector, could help improve farmer-market linkages.

Nonetheless, Senegal has dedicated efforts into improving farmer-market linkages, most notably by enabling contract farming in certain key sectors. A notable intervention, driven by USAID, CNCAS and SAED, was the introduction of marketing contracts in the rice sector of the Senegal River Valley region. Through these contracts, farmers – through producer organizations – receive credit from CNCAS upon fulfilling certain criteria, which is then repaid in paddy through a warehouse receipt system. Millers pay the farmer organizations and get hold of the paddy from the warehouses.

Another such initiative takes place in the onion sector where FAO provides support to the government for the adoption of comprehensive contract farming arrangements, in order to improve its quality and overall competitiveness vis-à-vis imported products (FAO, 2018a). The Market Regulation Agency of the Ministry of Trade also plays an important role in the commercialization of key agrifood products; placed under the authority of the Ministry of Trade, the ARM provides support to agrifood value chain actors including weekly/monthly market bulletins; storage and marketing platforms; or value chain coordination.
3. Policies and institutions

3.1. Procurement

Procurement involves a series of activities and processes that a firm, large or small, engages in to acquire the necessary products or services, at the right quality for the best price. For the food manufacturing sector, inputs can include agriculture commodities, crates, storage bags, retail food packaging and technical processing equipment. Procurement services can also include technical maintenance services if they are unavailable onsite.

The buying decisions of food manufacturers procuring agriculture commodities is not only affected by on-farm practices, but also by a range of circumstances off-farm, including post-harvest handling, the structure of the supply chain between the farm-gate and the factory gate, such as how commodities are collected from farms (e.g., by traders and transported to the factory). The state of public infrastructure, such as feeder roads, and the transport services available can also have an effect on a manufacturer’s ability to procure inputs. As such, the enabling environment governing product and post-production aspects of agricultural commodities has an elemental role in the success or otherwise of a food manufacturer’s procurement strategies. These factors are summarised in Figure 7.

Figure 7. External factors affecting the procurement strategy of small and medium agrifood enterprises

- Land tenure
- Access to market information
- Access to resources:
  - Finance
  - Inputs (fertilizer, seeds, pesticides, water)
  - Extension
  - Technology/equipment
  - Storage
- Environmental issues
- Taxation and regulations on imports
- Contract farming legislation
- Organization of agricultural produce
- Presence of intermediaries


PRODUCTION ASPECTS

The implications of challenges related to productivity, discussed in Section 2, have become quality problems for food manufacturers, including rice millers, as quality assurance and control can only be defined and maintained via strong, value-chain coordination between producers, traders and processors (Hathie and Ndiaye, 2015; Bernard et al., 2018). The weaknesses of applying an integrated value-chain approach are reflected in Senegal’s continued need to import food commodities despite major investments in domestic production (Bernard et al., 2018).

The argument can be made that agricultural strategies have relied wholly on intensifying production, assuming that local crops, such as rice, would be able to compete with imports in terms of quality and quantity, which has not been the case (Fiamohe et al., 2018). They have failed to keep pace with rapid urbanization and increasing demographics (Demont and Neven, 2013).

In addition to the need for more emphasis in programmes on up and downstream coordination, it can be argued that this requires efforts at the national strategic level between the strategic programmes targeting the food and agriculture sector, which require an aggregation of technical and financial investments with similar objectives, and which align overall to a common vision in order to achieve more notable results (CIRAD, 2015 in OECD, 2017).
An example of the need to align strategies is evident from the absence of the strategic objectives outlined in LOASP. Even though LOASP prioritized the formal recognition of agricultural professions or organizations, this objective was not addressed by PNIA despite this being a weakness in the enabling environment for agriculture in Senegal.

Access to irrigated water supplies also remains a challenge for most smallholders in a large part of the country due to costs and a lack of technical advice (FAO and IFC, 2016). However, rice irrigation in the Senegal River Valley has brought notable improvements under the country’s quest to achieve rice self-sufficiency, an objective that has been overseen by the National Agricultural Credit Fund of Senegal (CNCAS) and the national agricultural irrigation company (SAED). The Agricultural and Industrial Organization of Senegal (SODAGRI) also promotes irrigated agriculture, mainly rice in southern Senegal (Franzel, Ndiaye and Tata, 2018).

Other constraints to production, as identified by FAO and the International Finance Corporation (IFC), include:

- land tenure insecurity, which also represents a barrier to capital investment;
- lack of access to financing particularly for small farmers facing land tenure issues;
- climate change affecting production patterns and yields; and
- marketing information systems and infrastructure connecting producers to markets.

**ORGANIZATION OF SUPPLY**

In addition to the quantity and quality of on-farm production, food manufacturers’ procurement efforts will also be affected by the organization of supply between the farm gate and the factory gate. The organization of farmers, in particular smallholders, to supply the market can be arranged in a number of ways including traditional marketing cooperatives that are vertically integrated into value chains, farmer associations mandated to bargain on behalf of members, registered producer groups and informal farmer groups (FAO, 2015).

In Senegal, farmer organizations play a prominent role in the country’s enabling environment. The National Council for Rural Coordination and Cooperation (CNCR), the national umbrella association of producer and farmer organizations, is considered a strategic interlocutor in the formulation and implementation of development strategies, such as the Agricultural Development Policy Letter (LPDA) (1995) (Mercoiret, undated) and the LOASP, which was established in 2004 to focus on decentralization, also by formally recognising producer organizations. Farmer forums established with the help of donors have been successfully employed by CNCR to consult with producer organizations (PO) and involve farmers in policy discussions (World Bank, 2008). POs in Senegal also have important decision-making authority in the National Agricultural Research Fund.

The World Bank reports that 69 percent of Senegal’s rural households were members of POs in 2008, and the country can be characterized as having a strong national PO presence (Bernard and Wouterse, 2015 in Bernard et al., 2015).

Despite the role of POs in improving access to credit and to inputs for their members, the literature maintains that their ability to aggregate output has been declining over the years, impeding them from developing economies of scale and bargaining power (Bernard et al., 2015).

Some studies have explored the role of farmer organizations in supply chains, covering benefits, risks and constraints. A study covering a sample of rural POs selected in 2010–2011 found that, despite their mandate, only one-third were engaged in collective commercialization. Producers cited three reasons for not engaging in collective commercialization: risk of doing business in groups, price being perceived as the same as that from individual sales, and lengthy arrangements (Bernard et al., 2015). Another study on horticultural organizations found that only 10 percent were formed with the objective of achieving vertical integration (i.e. collective marketing/processing); the remaining 90 percent were started with the objective of protecting individual farm assets (Wouterse and Francesconi, 2016).

The Group of Economic Interests (GIE) in Senegal has emerged as a more general collective arrangement for production, as the procedures to initiate a GIE are more straightforward than the legislation governing cooperatives. Box 9 provides an overview of the main benefits of adopting GIE status.
Box 9. The Group of Economic Interests

The Group of Economic Interests (GIE) also have the status of an enterprise that can obtain a licence to import or export (Euricse, 2017). The GIE can be created without starting capital and it can opt out of paying corporate tax. In this case, its members are liable for the payment of income tax or the corporate tax equivalent to their benefits. GIE members can jointly apply for loans and are also responsible for the group’s debts (Journal du Net, 2019). The cost of setting up a GIE is XOF 115 500, which is around USD 190 (Euricse, 2017). To access credit from the National Agricultural Credit Fund of Senegal (CNCAS), it is necessary to be a member of a GIE.

Against the governance and policy background relating to the organization of farmers, linkages to markets and entrepreneurial initiatives, there are a number of public and donor related programmes that target the institutional strengthening of the farmer organization. Examples include the Agricultural Services and Producer Organizations Support Programme (PSAOP) initiated in 2000 (see Annex), and the International Fund for Agricultural Development (IFAD) funded Support to Agricultural Development and Rural Entrepreneurship Programme (PADAER). Both programmes target POs to support their professionalization and increase their access to agricultural markets. This has been done by providing market information, extension services, storage facilities and processing equipment, with the objectives of enhancing food security, increasing the incomes of smallholders, and creating employment for rural populations, especially for women and youth (IFAD, 2015, 2016). Rice represents one of the priority sectors of PADAER (IFAD, 2015).

Senegal has also dedicated efforts into improving farmer-market linkages, most notably by enabling contract farming in certain key sectors. An important intervention, driven by USAID, CNCAS and SAED, was the introduction of marketing contracts in the rice sector of the Senegal River Valley region. Through these contracts, farmers – through producer organizations – receive credit from CNCAS upon fulfilling certain criteria, which is then repaid in paddy through a warehouse receipt system. Millers pay the farmer organizations and get hold of the paddy from the warehouses.

Another such initiative takes place in the onion sector where FAO provides support to the government for the adoption of comprehensive contract farming arrangements, in order to improve its quality and overall competitiveness vis-à-vis imported products (FAO, 2018a). The Market Regulation Agency of the Ministry of Trade also plays an important role in the commercialization of key agrifood products; placed under the authority of the Ministry of Trade, the ARM provides support to agrifood value chain actors including weekly/monthly market bulletins; storage and marketing platforms; or value chain coordination.

REGULATIONS FOR IMPORTERS

Food manufacturers in Senegal import, on average, 72 percent of its industrial input needs, most of which comes from Europe and Asia (Osinski and Sylla, 2018). The import of foodstuffs requires an import declaration for food products from the Directorate of Internal Trade. Documents required for its issue include a certificate of origin, a sanitary and health certificate, a phytosanitary certificate, a certificate that the product is not radioactive, and a certificate that it is not contaminated by dioxin (WAEMU Secretariat, 2017). The import of plant products requires a phytosanitary permit for plants and their by-products; the Plant Protection Directorate checks the phytosanitary certificate and examines the quality of the products at the border. The import of animal products requires a sanitary permit (WAEMU Secretariat, 2017). In general, the enabling environment has facilitated access to imported inputs, with a positive correlation between firm competitiveness and access to imports (Marchat and Von Uexkull, 2016). The country is in line with the sub-Saharan average of 15 days to obtain an import licence, which is less than the average for lower middle income economies (World Bank, 2014a). Senegal also applies two special regimes to facilitate access to imported inputs and capital goods: the investment code (IC) and the free exporter status (FES). The IC exempts customs duties for equipment and materials required for production, but that are not manufactured in Senegal. The FES targets companies that generate at least 80 percent of their sales from exports and allows inputs, equipment and supplies to be imported duty free (Marchat and Von Uexkull, 2016).

However, about 60 percent of firms in Senegal do not make substantial use of imports, owing to the comparatively high tariff of 8 percent for industrial inputs set regionally by the Economic Community of West African States
and procedures. Food safety compliance and certification and other enabling environment processes controlled infrastructure, which is often weak in rural areas, as well as on the integration of public and private sector services and procedures. Food safety compliance and certification and other enabling environment processes controlled

SECTION CONCLUSION

The agriculture-related programmes cited in the sections above have respectively delivered notable results, particularly on the intensification of production, contributing to an improved supply of raw materials for food processors including rice millers. The Grand Agricultural Offensive for Food and Abundance (GOANA), PNIA and PRACAS programmes also focus on specific priority commodities that have shown potential for commercialization.

Overall, several studies refer to missed opportunities from integrated policy making and cross-coordination of programming stretching from production to downstream activities, which include food manufacturing (OECD, 2017; FAO, 2021b). For example, an OECD (2017) report discusses the need for the PRACAS programme to emphasize the organization of multiple small producers and traders and a consolidation of supply side actors, in addition to increasing production, if the target commodities are to attract investment across the value chains. Studies have also noted (Demont and Neven, 2013; Fiamohe et al., 2018; Top, Fr and Kim, 2017) that improved alignment in the agriculture enabling environment would translate into vertical and horizontal linkages, which tend to encourage downstream private investment in areas such as processing.

A review of the programmes listed under Figure 3 highlights that support to production is reiterated throughout the programmatic framework, but it also highlights gaps related to downstream support and that are impeding investment for opportunities in areas such as food manufacturing. A lack of balance between up and downstream support risks, for example, an increased likelihood of food losses due to missed value addition and storage investment opportunities, which may also cancel or make redundant the progress made in farm-level production.

CIRAD (2015) in OECD (2017) also note that the targeted commodities under the LOASP programmes, which largely face many of the same production-related and supply-chain organization challenges, would have benefited from cross-programmatic coordination and pooling resources and technical assistance. It has also been proposed that a stronger-cross programmatic vision, that incorporates the formal recognition of professions along agrifood value chains, including processing associations, and the integration of the LOASP’s objectives into the PNIA would improve investment targeting across nodes in the middle segment of the value chain under the range of programmes.

A more recent study (FAO, 2021b) also notes that there has been a lack of coordination and coherence among agrifood policies; further, these measures are dependent on political objectives which are only short-term and do not consider the structural problems faced by various agrifood sectors. Again, the study notes that the focus has been on expanding agricultural production through investments in irrigation and agricultural inputs subsidies, while storage, processing and marketing have been neglected.

To summarize, upstream investments are well addressed, notably production, although it is not well coordinated for synergies across the multiple programmes, missing out on opportunities to pool resources. There is support for organizing farmers but not for other small and fragmented downstream actors, for instance micro and small food traders, processors or retailers. Improved production yields and organization of supply will improve food processors access to important higher-quality inputs, but the lack of coordination is impeding the attraction of investment in areas such as manufacturing and other downstream opportunities including food transport, branding and retailing.

3.2. Logistics

Logistics has been extensively studied in the supply chain management literature as it refers to activities related to the flow of materials and information such as transportation, warehousing, procurement, packaging and inventory management. Effective logistics is critical for the development of the agrifood sector because it directly impacts on the quality and safety of the products and on access to markets. Logistical activities largely depend on infrastructure, which is often weak in rural areas, as well as on the integration of public and private sector services and procedures. Food safety compliance and certification and other enabling environment processes controlled
by the public sector, such as quality assurance related services (pest control or transport), will have an effect on the value that a firm’s logistical activities add to the end product. Figure 8 lists the main factors affecting logistics, with this section discussing their relevance for food processing.

**Figure 8. External factors affecting the logistics strategy of small and medium agrifood enterprises**

- **Infrastructure and access to support services**
  - Transportation
  - Storage
  - Cold chain
  - Packaging and traceability
- **Legislation on food quality and safety**


In response to Senegal’s goal to become a regional industrial logistics hub, strategy infrastructure and transportation occupy the first position in terms of priorities and receive 23.6 percent of total financing under the national development plan (2014–2018) (Senegal Ministry of Economy and Finance, 2014). Major projects to achieve this goal have included restoring railways, modernizing the port of Dakar and establishing storage platforms (Senegal Ministry of Economy and Finance, 2014).

Senegal’s Logistics Performance Index (LPI) demonstrates that the country’s infrastructure (i.e., roads, railroads and ports) rank slightly better than its sub-Saharan counterparts. However, gaps still remain in the transportation networks that connect the production of agricultural commodities to value adding processes and on to consumers, and they are noted in studies as a major hindrance to developing the agrifood sector (FAO and IFC, 2016).

The infrastructure in the capital Dakar, including its proximity to the port and airport, is the best in the country. The benefits of the capital city’s assets are reflected in the fact that 80 percent of the country’s formal food processing industry is located there (Osinski and Sylla, 2018).

As a consequence, the private sector is weaker in rural areas because of the lack of services and investment opportunities that an absence of infrastructure implies, despite agricultural produce ranking as the most active business activity in rural areas (IFAD and UNIDO, 2015). The section below describes efforts taken by the government to redress this imbalance.

**TRANSPORTATION AND ROAD INFRASTRUCTURE**

Senegal’s LPI shows that the country ranks poorly with respect to areas such as infrastructure quality and customs performance. Even more, its score has significantly decreased over time; while Senegal ranked 58 (out of 155 countries) in 2010, its position declined to 132 (out of 160 countries) in 2016 (World Bank, 2016b). While its infrastructure (i.e., roads, railroads, ports) is only slightly better than sub-Saharan Africa, it is much lower than its lower-income counterparts. A study examining policy options for the agricultural sector in the second phase of the Emerging Senegal Plan (ESP) over the period 2019–2023, reveals that an increase in expenditures on rural transportation infrastructure will lead to significant effects in terms of increased food production, lower food retail prices, and increased food consumption (JRC, 2018).

Poor transportation infrastructure has been improved significantly with investments such as the Roads Rehabilitation Project introduced by the government in 2010 to restore several strategic national roads (IMPAQ, 2014). The transportation sector has also benefited from a number of other projects supported by donors that are most active in the sector, namely the World Bank, European Union and French Development Agency (AfDB, 2014).
Two important road infrastructure projects\(^5\) undertaken between 2010 and 2018 have significantly improved access to rural production zones with the construction of approximately 2,000 km of rural roads in 184 local council areas. These projects specifically targeted the most remote rural communities spread over 11 out of the 14 regions of the country. The Agricultural Value Chain Support Project (PAFA) has also contributed towards rehabilitating and constructing 132.5 km of road.

Coordination between the projects has also been aligned with Senegal’s decentralization strategy, with capacity-building for local authorities and farmer organizations (AfDB, 2013). In addition, the Project to Open Up Production Areas (PDZP), co-founded with the African Development Bank, will build on these efforts and further develop or rehabilitate 500 km of roads by 2023 in more disadvantaged rural communities (AfDB, 2018).

However, the transportation services sector is characterized by a lack of competition and high services costs, with road freight transport, for instance, subject to price controls and retail price caps for petrol and fuel oil (World Bank, 2018d).

**WAREHOUSING AND COLD STORAGE SERVICES**

In addition to infrastructure, warehouse management, services and costs are also integral to the building’s contribution to food quality, manufacturing processes and overall competitiveness. Food commodity storage is featured strongly in Senegal’s agriculture policy framework, particularly in the PRACAS, which prioritizes expanding storage for rice, fertilizer, onions and peanuts. Improving storage capacity is also briefly mentioned in the PSE document as a sub-activity for transforming Dakar into a logistics and industrial hub.

The enabling environment for warehouse construction compares with the sub-Saharan and OECD average of 14.8 and 12.5 procedures respectively, with companies in Senegal obliged to complete 14 procedures to build a store. The number of days required is 177, which is above the sub-Saharan average of 147.5 and the OECD average of 154.6. Construction costs also rank higher representing 10.1 percent of warehouse value, compared to 1.6 percent in OECD high-income countries (World Bank, 2018b).

The construction of storage infrastructure has been mainly addressed by the PPC/PNDL with studies appraising the impact on vegetables, peanuts and millet evidencing a significant reduction in post-harvest losses from 30–35 percent to below 15 percent (AfDB, 2018).

PAFA, implemented between 2010 and 2016, has also built 82 storage units, targeting eight value chains in the Groundnut Basin: millet/sorghum, maize, niebe, bissap, sesame, rice, horticulture and aviculture. Combined with investments in feeder roads, agricultural production for actors, in particular farmers, has become more profitable (IFAD, 2019).

The PDZP has also developed storage facilities by constructing 30 warehouses for cereals, vegetables and peanuts (AfDB, 2018). While the programmes have primarily targeted storage facilities at the farm or farmer organizational level, the positive impacts on food quality and food loss reduction will also spill-over into benefits for food manufacturers.

Cold storage and transport facilities are essential services for food processing activities that rely on perishable commodities such as fish, dairy and fruit and vegetables. Support for developing cold chain infrastructure is acknowledged as a constraint in PSE for the fisheries sector, and by PRACAS for the fruit and vegetables destined for export. Other research also finds that cold chains are weak in the diary sector (Ferrari, 2016). Further research on cold chain infrastructure is required to inform policy making, to guide investments and to acquire suitable technology for food manufacturers.

**SECTION CONCLUSION**

The nexus between infrastructure, transportation and competitiveness in the agrifood sector are emphasized under Senegal’s national strategy, represented by the allocation of the largest amount of funding in the budget. Agro-industry development projects for the most part have focused on infrastructure in rural areas, targeting production zones and strategic value chains such as cereals and peanuts. As a result, evidence shows that

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\(^5\) The Community Roads Project (PPC) of the National Local Development Programme (PNDL) ended in 2018, and the PPC of the National Rural Infrastructure Programme (PNIR) ended in 2009.
production and commercialization of the sector have benefitted from a road network that connects the country’s main arteries and urban areas with the rural towns and production zones in rural areas and hinterlands in most regions of the country.

Increasing the potential of higher-value commodities such as fish, dairy, and fruit and vegetables will require more research on the enabling environment reforms needed to attract investments in cold chain infrastructure, management and services.

Logistics in the sector has also benefited from synergies derived from coordination across programmes managing infrastructure, decentralization and institutional capacity building of local government and farmer organizations. Extrapolating process lessons from cross-programmatic efforts and applying them to other aspects of the food value chain development would conserve resources and investments and accelerate progress in the long-term.

3.3. Operations

Operations in the manufacturing sector covers a range of activities from storage and warehouse management through to supply and distribution. Maintenance and production processes represent a core activity under a firms’ operations function. This paper will concentrate on the in-house activities that contribute to product value addition for a food manufacturer, covering processing activities and accompanying the flow of the product through the manufacturing process. In doing so, the appraisal can capture where value might be added or deleted, particularly where it is relative to food safety and nutrition. In this regard, equipment technology, as well as the skills of employees, are the main factors influencing these activities. As in the case of logistics, operational activities are highly dependent on infrastructural assets, which affect access to, and the efficient running of, water and energy utilities, described below.

In addition, the intention of the discussion is also to assess the operational activities that influence food safety and nutrition, and to identify disincentives that can be addressed and potential incentives that can be encouraged, and to assess which may require state support in adjusting business model operations.

**Figure 9. External factors affecting the operations strategy of small and medium agrifood enterprises**

- Access to equipment and technology
- Infrastructure
  - Access to electricity
  - Access to water
  - Sanitation
- Environmental compliance
- Legislation on nutrition
- Legislation on food safety and quality


**ACCESS TO ELECTRICITY**

Food processing utilizes significant amounts of machinery and energy to convert edible raw material into higher value food products. In general, food processing involves different unit operations such as drying and cooling, and energy consumption and energy use may differ significantly based on the process followed, the initial physical properties of the food and the desired properties of the final product. For instance, around 9 385 and 9 870 MJ of energy is required to produce 1 tonne of milk and whey powder while around 2 MJ is required to produce around 1 tonne of pasta (Wang, 2014 in Puri, 2016). Fuels are mainly used for process heat and space heating while electricity is mainly used for refrigeration, motor drives and automations.
Energy plays an important role in the drying process to reduce humidity levels from raw food commodities before further processing. This is an essential activity for rice, or other grains such as maize, in order to avoid food losses or compromising food safety with fungal diseases. In the absence of suitable natural sun or ambient controlled drying processes, energy-run machine drying will be required.

The rice milling industry is one of the most energy consuming industries. Electricity is used to run motors, pumps, blowers, conveyors, fans, lights, etc. The paddy milling consumes a significant quantity of fuels and electricity. The major energy consuming equipment in the rice milling units are boilers and steam distribution, blowers, pumps, conveyers, elevators, motors, transmission systems, weighing, etc. While a wide variety of technologies has been evolving for efficient use of energy for various types of equipment in rice mills, so far only a few have improved their energy efficiency levels. Most of the rice mills in developing countries are old and use locally available technologies (Goyal, Jogdand and Agrawal, 2014).

To provide an industry benchmark for the importance of energy in food processing, in the European Union for instance, the food and tobacco sector account for around 9 percent of the total industrial energy demand and 23 percent of the industrial value added (Ramirez et al., 2006 in Puri, 2016) where technologies employed are more efficient than in Africa.

In Senegal, electricity represents the third ranked major obstacle to conducting business as reported by small firms (World Bank, 2014a). The country’s rate of access to electricity is 64.5 percent and considerably less for rural areas where the rate is 38 percent (World Bank, 2016c). This compares to a 43 percent average access rate for the Africa region, and 87 percent for the global access rate (Cissé, Choi and Maurel, 2016).

As a result of policies and investments, important improvements have been made in recent years in the energy sector. For instance the average cut-off time has decreased from 912 hours in 2011 to 72 hours in 2016 (Ba, 2018), with Senegal experiencing about six power outages in a typical month, compared to the sub-Saharan average of 8.5 (World Bank, 2014a). Box 10 provides an overview of the main institutions governing access to electricity in Senegal.

Despite this progress, enterprise surveys conducted in 2013 revealed that 41 percent of SMEs will stop production during outages. Those that continue to operate during outages, most likely with access to privately run generators, report 80.5 percent reduced capacity and 27.4 percent report that product quality suffers due to outages.

Capital for wage labour is also incurred during production halts, with 25 percent of SMEs in Senegal reporting that hiring decisions are affected by power outages (Cissokho, 2015). This data is in line with research at the regional level showing a strong negative relationship between outages and employment rates. As shown in Figure 10, electricity outages reduce the probability of an individual being employed by approximately 35 percent in general and by 55 percent for the off-farm sector, including food manufacturing.
Institutions overseeing electricity infrastructure provisions in Senegal

In Senegal, energy governance falls under the aegis of the Energy Sector Development Policy Letter (2012) and the PSE (Ba, 2018). The PSE’s aim is to reduce the cost of energy and to improve its supply. The sector is overseen by the Ministry of Energy and the Development of Renewable Energies, while the Regulatory Commission for the Electricity Sector (CRSE) is responsible for licensing, operating and selling electricity, including providing tariffs (Ba, 2018). The private sector can get expertise, advice and even financial assistance from Agence Sénégalaise d’Electrification Rurale (ASER) on rural electrification initiatives, or from Agence Nationale pour l’Economie et la Maitrise de l’Energie (AEME) on efficiency and sustainable energy usage (Ba, 2018).

The Senegal National Electricity Agency (SENELEC) is the national utility authority, which is a monopoly. It owns and runs the country’s largest electricity generator. Under the sector’s governance framework, the Senegalese Rural Electrification Action Plan (PASER) was introduced in 2002 as a 20-year programme to achieve an access rate of 60 percent by 2017. Several measures have also been introduced more recently, including a financial and operational restructuring plan for SENELEC, an action plan to compensate for the national utility’s reduction in income, as well as the construction of coal and natural gas power plants (Ba, 2018). A World Bank project was also designed to improve SENELEC’s commercial losses and reliability of supply, focussing on Dakar (World Bank, 2016d).

Compared to other sectors, the energy sector is well funded. For the period 2014–2018, the energy sector received 13 percent of the total budget, only exceeded by infrastructure (Senegal Ministry of Economy and Finance, 2014).

Figure 10. Effects of electricity outages on employment in Africa

Note: The reported coefficients are of outages in a community using the instrumental variable regression approach. *** p < 0.01.

As implied in Box 10, the business models of agro-processors, and SMEs in general, are compromised due to a lack of competition in the electricity market, caused by the restriction of new entrants (World Bank, 2018d). The monopolistic structure is reflected in low efficiency rates, compounded by outdated or poor technology across sectors, including agro-processing, also exacerbated by a lack of investment finance and incentives for technology upgrading (Ba, 2018), which is discussed in more detail under the finance section. Ultimately the findings emphasize the urgent role of the Rural Electrification Action Plan, referred to in Box 10, in improving access to electricity and its reliability for the competitiveness and sustainability of the food processing industry and for other SMEs reliant on electricity to power their operations.

WATER SUPPLY AND SANITATION

Water is used in food processing for a wide range of purposes. These include direct contact with the food or food contact surfaces (as an ingredient, steam, etc) or indirectly as a processing aid (e.g., washing, rinsing, fluming, chilling, cooling, and for general cleaning, sanitation and disinfection) as well as fresh cut/freeze value-added operations (New Food, 2012). Fresh-cut produce processing and frozen fruit and vegetable manufacturing for instance are among the most water-intensive practices, due to the large consumption of potable water (FAO and WHO, 2019).

In the rice milling industry, after electricity and labour, water, air and steam are the most important utilities, used for cleaning, soaking and generating steam. Therefore, water quality in a food manufacturing plant has to be managed not only with respect to product safety, but also in view of the capability of production processes (e.g., cooling, heating and cleaning).

To conserve related water utility costs most post-harvest processors will also consider reusing water (e.g., for bin dumping, hydrocooling, flume recirculation and washing). This practice means that dirt, organic matter, pathogens and chemical residues can accumulate in the process water, causing cross-contamination between different batches, which is a major concern for food safety (FAO and WHO, 2019).

The Sahelian desert location of Senegal means that as a country it has limited water resources, and it requires acute water management strategies to protect scarce reserves. In Senegal, food processors will have access to rural multi-village boreholes with motorized pumps that are highly functional. Nonetheless, the quality of water is a significant concern especially in the Groundnut Basin, which hosts a third of Senegal’s rural population (AMCOW, 2011; World Bank, 2018e). Attempts to improve water quality are currently being made by various projects6 (AMCOW, 2011); Box 11 describes the governance environment for the water sector, recent progress and remaining challenges. For instance, the food processing industry, particularly those companies located in urban areas where supply is at 100 percent, will have benefitted from investments in hydraulic infrastructure (FAO and IFC, 2016). Some companies in rural settings will struggle with supply at 83 percent. In general, water supply and sanitation have been steadily improving, especially due to the Millennium Drinking Water and Sanitation Programme (PEPAM 2005–2015).

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6 The National Hygiene Service has partnered with UNICEF to monitor the quality of water used in domestic consumption. Additionally, another World Bank-led project aims to reduce the gap between rural and urban areas by upgrading piped water systems, developing sewer services, providing adequate wastewater and sludge disposal, etc. (World Bank, 2018e).
Box 11. Institutions overseeing water and sanitation infrastructure in Senegal

Water supply and sanitation is under the mandate of two ministries: the Ministry of Urban Development, Housing, Construction, and Water; and the Ministry of Sanitation and Public Hygiene. Water services in urban areas and several villages are provided by the public company Société Nationale des Eaux du Sénégal (SONES) and the private company Sénégalaise des Eaux (SDE). While communes and rural communities undertake small- and medium-scale projects aimed at improving supply and sanitation of water, large-scale facilities such as boreholes or treatment plants are initiated by the central government (AMCOW, 2011).

Hydraulic infrastructure in Senegal has benefitted from large public investments, and its river valleys benefit from good accessible water resources (FAO and IFC, 2016). Water supply and sanitation have been steadily improving in Senegal, especially due to the Millennium Drinking Water and Sanitation Programme (PEPAM 2005–2015). Rural sanitation, however, is still an area that needs to be addressed as it is below the target laid out in the Millennium Development Goals. While the urban supply of water has attained 100 percent coverage, rural supply is only 82 percent, and sanitation coverage is lower, with 78 percent in the cities and 63 percent in rural areas (AMCOW, 2011).

An important ongoing process is transferring borehole management in rural areas from the Operation and Maintenance Directorate (DEM) to a private operator. The effects that this process will have on water tariffs is an area of concern. Additionally, the supply of water in rural areas is characterized by inconsistent interventions implemented by a large number of actors which impedes the formation of a sense of ownership and good governance (AMCOW, 2011).

ENVIRONMENTAL COMPLIANCE

Interrelated to policy making for the energy, water supply and sanitation sectors is the vision that Senegal pursues towards a transition to a green economy, a pledge that is highlighted in its PSE plan and laid out in its Environment and Natural Resources Sector Policy Letter (Nachmany et al., 2015).

The country acknowledges that agro-industry is one of its main sources of pollution, and only 10 percent of its electricity comes from renewable resources (CESE, 2016). As such, the Renewable Energy Law was initiated to regulate incentives to develop the sector, which include tax exemptions for the purchase of equipment required for generating renewable energy. Similarly, the biofuels law grants tax exemptions for revenues generated from biofuel activities (e.g., farming) and sets specific by-laws to create attractive biofuel prices (Nachmany et al., 2015). The country has also implemented a National Bioenergy Strategy producing jatropha, also known as nettle spurge, for biodiesel and sugarcane for ethanol production (Dafrallah and Ackom, 2006).

Environmental protection instruments are laid out in the country's Environment Code, which addresses biodiversity, desertification, forest management, air pollution, urban planning and hazardous waste disposal. Activities under these areas require a permit and any infringements are subject to penalties such as fines or imprisonment (Nachmany et al., 2015).

Apart from the above, there is no legislation or initiative directly targeting SMEs or the agrifood sector with respect to climate change or environmental protection.

NUTRITION AND MANUFACTURING

Traditional food processing dates back to pre-historic times, but during the second half of the twentieth century industrialization brought the onset of modern food processing targeting middle-class households for convenience products such as soups, cereals and prepared foods. However, the food manufacturing industry globally is facing numerous challenges due to its role in overnutrition and obesity and related non-communicable diseases compared with its potential role in improving undernutrition and access to nutritious food products against major demographic trends and population growth (Barclay and Haschke, 2014).

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7 Jatropha is a shrub that produces non-edible seed oil suitable for biodiesel fuel.
Human nutrition falls into the remit of the Ministry of Health and Social Action and the country’s strategic plan concerning nutrition for the period 2013–2018 is laid out in the “Lettre de Politique de Nutrition” (UNSCN, 2013). Another important institution is the Cell Against Malnutrition, which coordinates policies and relevant ministries to tackle malnutrition in the country. Additionally, development organizations complement the government’s efforts towards improving nutrition. For instance, the United States Agency for International Development’s (USAID) Yaajeende programme aims to scale-up nutrition-led agriculture approaches through local institutions (Poulsen, 2015).

Due to its nutrition-sensitive policy and service delivery framework, the country has made notable improvements in the area of malnutrition; however, anaemia is still a serious threat, and even more concerning, over-nutrition and related non-communicable diseases are on the rise (USAID, 2018b). As such, “promoting agrifood development that fosters optimal nutrition is important in order to avoid replacing the undernutrition problem with an over-nutrition problem” (USAID, 2018a, p. 9). Overall, food production in Senegal is not very cost effective or efficient, especially in rural areas, making it difficult for the population to access affordable, diverse, local food, with negative results for their nutrition status.

Senegal acknowledges the importance of coherence across sectors for improving its nutrition status and its multi-sectoral strategy is laid out in the National Nutrition Policy or Politique Nationale de Développement de la Nutrition (PNDN) 2015–2025. One of the plan’s objectives is to mainstream nutrition across sectors; its intervention pillars also include the “adequate processing, distribution, and tariffication (appropriate distribution and import-export taxation schemes) of nutritionally rich foods” (Ruel-Bergeron, 2018). The Strategic Multi-Sectoral Nutrition Plan (PSMN) is based on the PNDN and defines 12 sectoral action plans that guide the implementation (USAID, 2018b). Nutrition activities envisioned under the agricultural sector include the increase in production, transport, and processing of agricultural products, training activities for agricultural producers on both nutrition and agricultural practices, and proper handling of food products and food safety.

Under the industry action plan financing has targeted the establishment of salt iodization plants, and the development of local quality-control groups. Activities affecting agrifood businesses are implemented under the commerce sector pillar: maintenance of food fortification equipment; routine analysis of fortified foods to ensure compliance; support of local food processing, transport and marketing initiatives; implementation of a food information network (detailing geographically driven food prices and stocks); and food labelling research and guidelines (Ruel-Bergeron, 2018).

The cross-sectoral nature of the PSMN is commendable, providing a good foundation on which to base investments in a nascent agro-processing sector that is nutrition sensitive. In addition to the pillars identified, appraisals of the PSMN have also highlighted the need for increased private sector inclusion in its design and implementation to promote the production, processing and marketing of more nutritional foodstuffs, as well as improved capacities within the public and private sectors on nutrition (Ruel-Bergeron, 2018). The inclusion of institutional strengthening of consumer groups with linkages to nutrition education in the strategy will also support the creation of sufficient market demand for locally produced nutritious food brands that can be served by domestic processors.

**FOOD QUALITY AND SAFETY**

In addition to the essential enabling factors discussed in Section 2.1, FAO 2013b, also identifies food safety and quality standards as notable factors required to promote a conducive business environment to foster private sector investment in the agrifood sector. The associated food control infrastructure, institutions and support services that ensure that these standards are not only set but also enforced in order to ensure transparency, consistency and compliance have been widely addressed in the literature (Konig, da Silva and Mhlanga, 2013).

Against the challenges of enabling the food safety apparatus for food value chains at a national level, it is also generally recognized that small-scale producers and SMAEs face greater constraints and pay a proportionally higher cost for a poor business environment compared to large firms.

For example, larger firms are better equipped to absorb the costs associated with regulatory compliance, and, if not well designed and monitored, these regulations can become unmanageable for smaller firms. SMAEs may also struggle to obtain the needed product certifications or standards compliance due to the lack of public testing
laboratories, which larger companies are more able to establish in-house. It is, therefore, important that the policies, institutional and regulatory framework be adequately designed to take the needs of small actors into consideration (Kelly and Njie, 2019; Mbithi, 2019; White, 2018).

Food businesses of all kinds are subject to regulations that involve the compliance of risk-based or hazard-based management systems. Ensuring the safety of food starts at the farm and ends with the consumer, and it depends on all actors in the value chain contributing to the management of risks by adhering to good practices and carrying out the necessary controls. Unsafe food, which is often undetectable by human senses, can have dire public health consequences and repercussions for public trust in the agrifood sector and for commodities and food products dependent on exports to markets with stringent food safety regulations. National policy requirements and resource allocations pertaining to food safety, therefore, require an assessment of the broad range of risks that are created by foodborne hazards (FAO, 2014).

Food quality, on the other hand, refers to those attributes of the product that affect its value to the customer or consumer, such as colour, origin, flavour and other characteristics (FAO and WHO, 2003). Activities performed specifically by millers, which can affect food safety and quality, are logistics (i.e., product handling, transportation, storage and packaging) and operations (i.e., in-house handling and processing of the product). Additionally, a company's attention to food safety and quality is based on consumer demand, which can motivate or not investments in these areas.

Since investments by food businesses in food safety and quality can be cumbersome and costly, government intervention is often needed to guide and oversee SMAEs' adherence to good practices. More research is needed to understand how agrifood processors can adhere to food safety and quality requirements, especially given the increasing complexity of standards demanded by globalized food chains.

In Senegal, food safety is regulated by Food Law 66-48, signed in 1966 (USDA, 2017) with Senegal noted as one of only a few low-income countries that have adopted specific regulations to ensure food safety during transportation (World Bank, 2018c). For the rice milling sector, Senegalese Standard NS 03-029 on milled rice also applies to transportation, among others (ASN, 2013).

For food quality and standards, the responsible body is the semi-state Senegalese Association for Standardization (ASN, 2019). The private sector is involved in the decision-making of the association, which is mainly funded by the government (55 percent) but also through member subscriptions (15 percent), advisory services (15 percent), and publications on standards (10 percent). In 2017, there were 518 standards listed in Senegal’s catalogue, most of them pertaining to the agrifood industry (WAEMU Secretariat, 2017). Quality in the food sector is rewarded through the ‘NS Qualité Sénégal’ national mark, which products can receive after they are certified (WAEMU Secretariat, 2017).

The fresh fruit and vegetables sector in Senegal has led the way in demonstrating the potential merits for growth from adhering to food safety regulations. In recent years, the sector has progressively responded to the increasingly stringent European Union standards required to access the lucrative regional markets, which impose: (1) common marketing standards for fresh fruit and vegetables; (2) sanitary and phytosanitary (SPS) measures; (3) general hygiene rules based on Hazard Analysis Critical Control Points (HACCP) mechanisms; and (4) traceability standards. As a result, Senegal has increased its horticulture export earnings, proving that developing countries can keep up with the tightening standards in international food markets (Maertens and Swinnen, 2009).

More recently, the Government of Senegal in collaboration with FAO, the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO) and other partners have applied to the Standards and Trade Development Facility for funding for pilot projects that aim to improve food safety within the food sector. One such project is a proposal for the voluntary third-party assurance (vTPA) programme (see Box 12) for the horticulture sector. vTPAs are designed to better inform their risk profiling of food businesses, to support the targeting of resources within national food control systems. vTPA programmes can help competent authorities and food businesses improve food safety outcomes (Standards and Trade Development Facility, 2020).
Box 12. Voluntary third-party assurance programmes

The Codex Committee on Food Import-Export Inspection and Certification Systems (CCFICS) defines a vTPA programme as "a non-governmental or autonomous scheme compromising of the ownership of a standard that utilizes national/international requirements; a governance structure for certification and enforcement, and in which food-business operator participation is voluntary”. CCFICS is developing principles and guidelines to assess and use vTPA programmes.


At the broader food sector level though, an International Monetary Fund (IMF) study in 2017 underscored that more work is required, with research showing that over a 30-year period, compared to other sector exports, food and animal products have consistently demonstrated weak performance due to food safety factors (IMF, 2017b). IFC (2020) notes that the Directorate of Plant Protection and Technical Controls which is mandated to control sanitary and phytosanitary hazards linked to agricultural exports, faces a lack of human, financial and technological resources needed to ensure access of Senegalese products to high-value markets.

The rice sector, for instance, is a key sector which can benefit from attention to food safety and quality aspects; the sector is highly fragmented, with hundreds of micro-scale or artisanal mills, providing rice of lower quality than the more commercially-oriented millers largely due to obsolete machinery and lack of regulatory supervision. It is for this reason that urban consumers have developed a preference for imported rice, which is perceived as higher quality than the local variety. The high costs of inbound logistics, combined with increased availability of supply, has led to the emergence of micro-scale mills close to the farmers, further contributing to a fragmented sector filled with inefficient players (Miklyaev, Hashemi and Schultz, 2017). This reiterates that attention to the production side should be combined with efforts to address constraints further down the chain – see Ilie and Kelly (2021) for a more in-depth discussion on quality and safety in the rice sector of Senegal.

SECTION CONCLUSION

Overall, the current regulatory restrictiveness in input markets (e.g., electricity, water, fuel) hinders competition and leads to high costs for the manufacturing industry, including the food processing sector. Quantitative analysis reveals that opening up these markets will translate into a GDP growth of 0.2 to 0.5 percent due to economic development in the relevant industries (World Bank, 2018d).

Rural areas are particularly affected by these issues as they experience shortfalls in both electricity, water and sanitation supply, hindering the development of the agrifood sector close to the farming community. Lowering electricity costs is something that needs to be further addressed. There are policies targeting costs reduction and improved supply but these have to be significantly amplified (Marchat and Von Uexkull, 2016). Food safety and quality also suffer from these operational constraints as firms might chose to forego important practices in order to keep costs low.

3.4. Finance

Access to finance is a long-standing, and repeatedly cited, obstacle in the way of growth for SMEs across all types of economies, but in sub-Saharan Africa it is compounded by the general lack of financial resources for SMEs (Fjose, et al., 2010). The lack of a reliable stream of affordable finance is blamed for inhibiting innovation, growth and employment generation (OECD, 2017b). Given that SMEs face significantly more challenges to their operations and growth potential than larger companies, the issue of finance looms large among these obstacles (Beck and Cull, 2014).

There is a vast amount of literature analysing the evidence of the impact of rural finance on poverty reduction in developing countries (Levine, 2005 in Beck and Cull, 2014) and the growing interest in the development community in the role of SMEs in emerging and developing countries is increasing the evidence that access to finance for small companies forms an important part of poverty reduction (Beck and Cull, 2014).
The complaint made by SMEs that a lack of access to credit and finance is stifling growth is supported in the research (Beck, Demirgüç-Kunt and Maksimovic, 2005 in Beck and Cull, 2014), which shows it to be one of the most salient determinants of success in small entrepreneurial enterprises (Evans and Jovanoic, 1989; Hurst and Lusardi, 2004 in Nagler and Naude, 2017). Figures also show that it is even more constraining than, for instance, corruption or infrastructure (Ayyagari, Demirgüç-Kunt and Maksimovic, 2008 in Nagler and Naude, 2017).

There are several country-specific factors affecting the firm’s finance component, which will be discussed in detail in this section (see Figure 11). These are either related to how the firm manages its finances or the status of financing access in the country.

**Figure 11. External factors affecting the finance of small and medium agrifood enterprises**


**INSURANCE SERVICES**

The Insurance Directorate of the Ministry of Economy and Finance is responsible for the regulation of the insurance market. In 2016, there were 27 insurance providers in Senegal, out of which only one offers agriculture-tailored insurance services (WAEMU Secretariat, 2017). The penetration of the insurance sector was only 1.46 percent in 2015 and is only determined by income levels. Similar to the case of microfinance (see section below), knowledge on insurance products in Senegal is low (World Bank, 2016e).

**ACCESS TO FINANCE**

The DPME survey reveals that out of 31 percent of SMEs that had access to finance, 14 percent took out commercial loans, and 10 percent made use of microfinance (Wellen and van Melle, 2017). Nonetheless, for the estimated 80 percent of informal SMEs, family and friends, as well as a few microfinance institutions (MFI) or informal investors, are the usual external source of capital. The traditional scenario for Senegalese SMEs is to start off with the owner’s own capital or financing from family and friends, sometimes aided by donor-funded initiatives (Wellen and van Melle, 2017).

Senegal acknowledges the lack of finance tailored to the specific needs of SMEs (*Direction Generale des Impots et des Domaines*, 2013); the country scores only 3.5 out of 7 on the “financing of SMEs” indicator (World Economic Forum, 2018b), and access to finance is also the top business obstacle reported by Senegalese companies in 2014 (World Bank, 2014a) and in 2016 (World Economic Forum, 2017). Additionally, obtaining loans is very difficult in Senegal because of the high collateral requirements which are, on average, 271 percent of the loan amount. This is especially true for SMEs (Marchat and Von Uexkull, 2016). These are the result of illiquid asset markets, absent credit registration, and a weak legal infrastructure (Wellen and van Melle, 2017). Only a few firms have undergone an independent audit of their accounts, which would allow banks to assess the viability of applicants.

Wellen and van Melle (2017) explore the financing landscape for SMEs in Senegal and find that, even though there are a wide range of providers, there is still a financial gap for those enterprises with needs above EUR 15 000 and

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*This section draws extensively on the work of Wellen and van Melle (2017).*
a revenue below EUR 750 000. Since 2015, a ceiling has been applied to financial services and so, interest rates on loans cannot exceed 15 percent, which is still perceived as too high by SMEs. Since the effective costs of providing credit to SMEs can be as high as 20 percent, the cap discourages banks from expanding lending to these enterprises.

Given all the financial constraints, Senegal has prioritized the increase in credit options for SMEs. It is for this reason that three lending and loan guarantee schemes for SMEs were initiated in 2013: the Priority Investment Guarantee Fund (FONGIP); the Sovereign Fund for Strategic Investments (FONSIS); and the National Bank for Economic Development (BNDE) (WAEMU Secretariat, 2017).

Small manufacturing companies can also avail themselves of support from the Industrial Upgrading and Modernization Office (BMN) (Cissé, Choi and Maurel, 2016; WAEMU Secretariat, 2017), which oversees a modernization programme launched in 2013 targeting companies with a turnover of less than XOF 500 million (USD 826 000) and that have been operational for at least two years (WAEMU Secretariat, 2017).

SME-specific banks include Orabank and Cofina. Concerning rural finance specifically, CNCAS, which represents the financial arm of the government, is the main player in the sector. The agency provides more favourable loan terms than commercial banks or MFIs (IFAD and UNIDO, 2015). While the average interest rate in Senegal is 12 percent, CNCAS applies a subsidized rate of 7.5 percent (FAO and IFC, 2016). The fund is financing mainly smallholders, followed by GIEs, credit associations and NGOs. The bank also accepts commodities as collateral (Wellen and van Melle, 2017).

The SME Development Agency (ADEPME) has also played a significant role in improving financial access to SMEs through the development of an e-rating tool assessing the financial eligibility of enterprises. Due to this tool, financing offered to SMEs has increased from XOF 1.3 billion (USD 2.2 million) in 2015 to XOF 3 billion (USD 5 million) in 2017 (IMF, 2019b). The Banque Centrale des États de l’Afrique de l’Ouest (BCEAO), which is the regional Central Bank, has also implemented a project aiming to support SMEs to access credit. This involves banks providing credit to SMEs, which can then be used as collateral at the BCEAO refinancing window (IMF, 2019b).

Microfinance comprises 10 percent of the banking sector’s total assets, and MFIs are regulated by the Ministry of Economy and Finance, as opposed to larger institutions, which are supervised by the banking commission (WAEMU Secretariat, 2017). These generally offer finance to small trade activities in agricultural production (IFAD and UNIDO, 2015). Micro-enterprises can access microfinance (up to EUR 20 000) to cover working capital needs. MFIs apply an interest rate of up to 24 percent (Wellen and van Melle, 2017).

The penetration rate of MFIs is around 16 percent of the population (Direction de la Microfinance, 2019). The government has implemented reforms to professionalize MFIs but knowledge of their products remains low, and their entrance into more remote areas is impeded by low income levels, lack of infrastructure or job insecurity (World Bank, 2016c). Even more, the microfinance sector is designed in such a way that it does not encourage entrepreneurship but rather low-risk investments (Scanlon et al., 2017). MFIs are governed by the PARMEC law, or Projet d’Appui à la Réglementation sur les Mutuelles d’Epargne et de Crédit, which is adopted in the whole UMOA/WAMU region.

Box 13. Making collaterals work for SMAEs

The United States Agency for International Development (USAID) has been an important actor in finance in Senegal. It has supported local financial institutions to reduce collateral requirements on both leases and loans, and it has helped to extend their services to rural communities.

A Development Credit Authority (DCA) partial credit guarantee was signed in 2017, for instance, with Locafrique in order to finance investments in irrigation, processing, storage and mechanization. As part of the agreement, both the lender and the borrower were also provided with technical assistance.

Leasing represents 9 percent of total financial assets and, in addition to banks, it can also be provided by Locafrique and Alios Finance (WAEMU Secretariat, 2017). There are dedicated efforts being made to expand the availability of leasing to SMEs by a partnership between IFC and ADEPME. This involves building awareness on leasing as an alternative financial mechanism, as well as capacity building and strengthening or creating leasing associations in the country (IFC, 2019). USAID has also played an important role in expanding agricultural leasing in Senegal (see Box 13).

As concerns equity, there are few formal investors, and these usually price their capital offer around 20 percent per year. SMEs generally have little understanding of investors’ financial products, and they fear that they have excessively high return expectations (Wellen and van Melle, 2017).

Entrepreneurs in Senegal reveal that they are generally seeking long-term loans with a maximum interest of 7 percent, which is a product that is as yet unavailable on the financial market. However, the closest offer to demand seems to be CNCAS, which offers an interest rate of 7.5 percent, as well as the state SME bank, which provides loans at 8 percent but requires high collateral. Even Cofina, a financial institution acting as a bank and which focuses on meso-finance, has a client portfolio comprising only 30 percent SMEs; this is because of the SMEs’ poor financial records or weak management (Wellen and van Melle, 2017).

Owners also feel that banks lack the necessary skills for working with SMEs, which often experience lengthy and complicated application processes. In this context, FONGIP, the state guarantee fund, found itself sending back about one-third of applications from partner banks because of their errors or incompleteness (Wellen and van Melle, 2017).

Concerning the public SME-specific initiatives described above, enterprises also report that these interventions are actually characterized by long and slow processes. Additionally, informality is still not being addressed, impeding financial actors to take advantage of this market opportunity (Wellen and van Melle, 2017). While progress has been made in terms of financing impediments, further significant efforts are needed to increase lending to SMEs (IMF, 2019b). This is even more important as research finds that access to a loan or to lines of credit have a significant positive impact on Senegalese firms’ total factor productivity (Cissokho, 2015).

Other initiatives aimed at improving finance in the agrifood sector are also warehouse receipt systems (WRS) (see Box 14) and insurance services. A study carried out in 2016 of 27 insurance providers showed that only one offers agriculture-tailored insurance services (WAEMU Secretariat, 2017). The penetration of the insurance sector in Senegal, determined by income levels, was only 1.46 percent in 2015, which is comparable with rates of access to microfinance (see section below). Skills and knowledge related to insurance products and their relevance for sector growth, including the agriculture and agribusiness sector, is also a factor attributed to the insurance industry’s absence in Senegal (World Bank, 2016e).

In addition to financial services and tools made available by the commercial banking sector or the public sector, enterprises’ finances are also directly affected by the country’s tax regime.

**CORPORATE TAXES**

Senegal is ranked 171st out of 190 economies for ease of paying taxes, with firms making 58 payments in the fiscal year, reflecting 45.1 percent of the country’s total tax contribution, and compared to the world average of 23.8 payments and 40.4 percent, respectively. Currently, it takes 441 hours per year to pay taxes, which is above the sub-Saharan average of 280.6 (World Bank, 2019e), with government plans underway to make the tax payment process more efficient by expanding, for instance, e-procedures and offering them to medium-sized enterprises, and by using the system of SMS and voice message reminders of tax obligations.

Simplification of the tax code and raising taxpayer compliance levels for SMEs is also in progress (IMF, 2019b). Additional priority areas requiring action include improved collection, enforcement and redirecting tax audits towards taxpayers with the highest risks (IMF, 2019b).

Such reforms are welcome given that surveys conducted in 2016 indicated that tax rates are the second most problematic factor for doing business in Senegal (World Economic Forum, 2017) with SMEs perceiving taxes as too high and tax processes too cumbersome to comply with, constraining the formalization of the small business sector.

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sector (Wellen and van Melle, 2017). These factors also encourage parallel bookkeeping, for instance, which is used to avoid paying taxes, further hindering realistic assessments of the financial capacity and needs of SMEs by the banking sector.

Instead the Valued Added Tax\(^9\) (VAT), which is a standard rate of 18 percent (with several exceptions) (Deloitte, 2019), requires 34 hours to comply with processes for a refund, with a law introduced in 2018 requiring that refunds be paid within 90 days from the date of the taxpayer’s submission (World Bank, 2018b), an improvement over the 16.9 weeks previously reported to process the refund (World Bank, 2019e). This same report also shows that only 24 percent of cases undergo a corporate income tax audit (World Bank, 2019e). In Senegal, registered companies comply with the following tax regime:

- corporate tax rate at 30 percent of taxable profit, with small businesses paying a single global contribution based on their turnover;
- export companies with more than 80 percent of foreign sales are granted a reduced rate of 15 percent;
- companies without profits are liable to pay a 0.5 percent rate of the turnover from the previous year (El Houda, 2018); and
- GIEs\(^{10}\) – which are often a form of PO – also benefit from a special tax regime (see Box 9).

In addition to tax and VAT obligations, all registered employers are expected to pay tax and contributions for employees with formal contracts. Details related to these obligations are discussed under the human resources section.

**SECTION CONCLUSION**

Senegal has made important progress on improving financial inclusion and expanding finance to SMEs. However, the literature reviewed for this section infers that initiatives, on the whole, are fragmented, and target larger-sized commercial high-growth companies such as those operating in IT.

Recommendations suggest that islands of success, such as the IT sector, can be appraised to extract lessons to inform the formalization of other sectors, such as agrifood, adjusting reforms to cater to the needs of small and medium moderate-growth SMEs. More critical literature suggests that government policy does not encourage formalization, but rather compels companies to operate informally, either through cumbersome administration or growth-penalizing tax regulations. As a result, the number of “registered” credit-worthy enterprises qualified for formal finance is reduced, further stunting the flow of investment capital around the economy (Wellen and van Melle, 2017). This scenario hinders even further, investment options for the SMAE sector, which already battles with a finance and investment sector that have limited knowledge and skills of agriculture and food sector trends and financing needs.

Weaknesses in the enabling environment for agrifood sector investment opportunities are also exacerbated by small companies’ lack of proficiency in financial literacy, including the financial management of a company’s books and the nexus with understanding which financial services and products are needed, and how to evaluate the benefits of those on offer by the banking sector. For instance, 85 percent of the population in rural settings does not have an own-name account, compared with the 60 percent sub-Saharan African average (Demirgüç-Kunt, et al., 2018). Generally, Senegal is still highly reliant on “over-the-counter-cash” as it provides the most straightforward type of transaction, without requiring any additional knowledge or tools (UNCDF, 2016) in addition to technology, fees or transparency.

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\(^9\) Exemptions relate to health care, education, banking, insurance and reinsurance, farming and transportation.

\(^{10}\) For an overview of the GIE status, see Box 9.
Box 14. Improving access to finance through warehouse receipt systems

The Ministry of Commerce with support from the International Finance Corporation (IFC) and other donors, has initiated a taskforce consisting of various stakeholders (financial institutions, ministries and collateral management companies) to work on developing the regulatory framework for warehouse receipt systems (WRS). The bill was adopted in 2017 and the programme was piloted on the rice sector and will later be expanded to other agricultural commodities. The scheme involves recognizing agricultural products as collateral. It also focuses on building the capacity of POs to engage in collective marketing and guarantee the quality and quantity of produce.

USAID has also been active in expanding the WRS in Senegal. Two monitoring and tracking systems were developed under its Naatal Mbay project in order to support POs and banks to monitor yields, quality and repayment of loans.


3.5. Marketing and sales

A company’s marketing activities bridge the gap between consumer needs and products on offer with the objective of retaining or capturing market share, generating profits and maintaining relationships with existing customers and identifying new markets if needed. A marketing strategy looks at how firms strategize to make their products known, how they compete, and how they retain or gain market share, with related activities falling under the “four Ps” of marketing, which refer to product (what and how much to produce), place (where to sell the product), price (sales price point and profit margin), and promotion (sales and advertising). A marketing strategy is generally associated with a large company or a multinational but all companies, no matter the size, at some stage will reflect on the areas of their business associated with the “four Ps”. Nonetheless, small enterprises operating in the agrifood sector in developing countries will typically be spontaneous and informal. As such, a better understanding of the external factors shaping the day-to-day marketing and sales strategy of SMAEs can allow for the identification of best practices related to capturing market share in the context of limited company resources and increasing demand for food. Figure 12 describes the factors affecting the marketing and sales activities and decisions of a small food company in developing economies.

Figure 12. External factors affecting the marketing and sales strategy of small and medium agrifood enterprises

- Domestic market characteristics
- Availability and use of marketing tools
- Presence of marketing boards
- Government-led promotional initiatives
- Intellectual property rights
- Legislation on labelling and packaging
- Legislation on exports
- Market regulation and legislation on pricing
- Industry characteristics

DOMESTIC MARKETING CHARACTERISTICS AND PROMOTION OF LOCAL FOOD

Senegal’s small domestic market is characterized by a growing middle to upper class consumer-base with an increasing preference for high-value imported food (Osinski and Sylla, 2018). Similar to other developing countries, growing urbanization has led to increased consumer preference for processed food (Del Pozo-Vergnes and Vorley, 2015). While imports are controlled by sanitary authorities at arrival, local food production and processing does not undergo the same stringent controls with institutional capacity gaps to enforce regulations. In addition to implications for food safety, the consumer perception that imported food is safer and of better quality undermines the market value of locally produced food on the Senegalese market (Del Pozo-Vergnes and Vorley, 2015).

As previously mentioned, 50 percent of food needs are fulfilled by imports, which are led by rice and wheat. Bread and cereals constitute the largest share of the Senegalese diet, with rice being consumed at least at one meal per day, adding up to around 90–100 kg per year (Osinski and Sylla, 2018). Rice represents 54 percent of urban consumption of cereals and 24 percent in rural areas (USAID, 2009).

Given the preference of consumers for imports, campaigns have been introduced by universities and civil society organizations to promote local, healthier food. Additionally, the government has also initiated the AfroEats festival to promote local cuisine (Del Pozo-Vergnes and Vorley, 2015). The rice sector should also be mentioned as it has benefitted from several notable promotional initiatives (see Box 15 for more details). The challenge is, however, in ensuring that these local food options are also affordable for the poorer populations (Del Pozo-Vergnes and Vorley, 2015).

It is the artisanal processor who provides affordable foodstuff to the low-income population in cities, which are still primarily distributed at “corner kiosks” (Del Pozo-Vergnes and Vorley, 2015). In the case of rice, however, anecdotal evidence suggests that, while local rice is readily available in the supermarkets of Dakar, it is not widely available in smaller shops, which are preferred by low-income households (Farm Radio International, 2018).

Addressing the issue is even more important as research shows that a reduction in the price of rice can result in a 0.2 percent decrease in poverty (World Bank, 2018d).

**Box 15. Promotion of local rice**

The rice sector represents a special case in the sense that the government and various actors have joined efforts to stimulate local rice consumption.

The government and development agencies have implemented national initiatives that aim to promote local rice. Workshops have been conducted to connect rice millers, distributors and retailers in urban areas, leading to an increase in sales channels (JICA, 2014).

Another initiative includes the introduction of a high-quality broken-rice brand called Rival (Riz de la Vallée) by local producers, with quality aspects and micro-financing overseen by the Oxfam-funded platform Plateforme d’Appui aux Initiatives du Nord (PINORD). Along with other initiatives, this experience has shown that it is possible to produce and market local rice that responds to domestic urban demand (Colen, Demont and Swinnen, 2013).

**PRICING AND COMPETITION**

Well-functioning domestic markets are essential for integrating regional and global value chains, allowing countries to increase their share of value-added exports (World Bank, 2018d). In general, state control of markets in Senegal is significant. Government involvement in business operations is estimated at 42 percent and is driven by price controls and use of regulation.

Ensuring the normal, transparent and competitive functioning of the domestic market is the responsibility of the WAEMU Commission, while the National Competition Commission can only undertake preliminary investigations and market studies based on instructions from the former (World Bank, 2018d). However, the World Bank finds that competition law enforcement in Senegal is weak and advises that transferring authority to national competition institutions on domestic anticompetitive practices will result in a more effective competition policy framework.
While generally the price of products is determined by competition, several markets are subject to price controls and coercive regulations, particularly food staples, agricultural products and network industries such as the energy sector (see Operations), favouring monopolistic positions (Marchat and Von Uexkull, 2016; World Bank, 2018d). Retail trade is also heavily regulated, with a high number of licences and permits required for commercializing food products (World Bank, 2018d), favouring larger outlets that can afford the burden of becoming formal. Anecdotal evidence indicates that the government needs to direct more effort towards protecting small, local retailers and ensuring fair competition under the prospect of supermarket diffusion (RFI, 2018). The rice industry is another example of a regulated sector; for instance, since 2013, the government has imposed a price ceiling on imported non-aromatic broken rice for importers, wholesalers, and the retail sector. Further, in 2017, the government introduced an import ban on whole grain aromatic and non-aromatic rice to prevent competition with local rice. With respect to broken rice, buyers must obtain authorization from the Ministry of Commerce which decides on the quantity; the importer must also agree to buy a specific quantity of locally-produced rice (Osinsky and Sylla, 2018). As discussed in Section 3.4, competition from the informal sector represents an important constraint for Senegalese companies, being ranked as the second biggest obstacle to doing business (World Bank, 2014a). As the share of informal companies is too high (approximately 80 percent), a significant tax burden falls on the limited number of formally-registered businesses, which further decreases the incentive of becoming formal (Wellen and van Melle, 2017).

Most informal activities are in trading and major constraints cited by informal businesses are lack of customers (60.4 percent), high competition (36.7 percent) and access to credit (27.3 percent) (Republic of Senegal, 2014).

LABELLING AND PACKAGING

Wrapping, packaging, labelling and marking are covered by Decree No. 68-507 of 1968, and by the relevant standards in the Codex Alimentarius. The trade and production of processed food is regulated by Decree No. 68-507, passed by the government in 1968. According to the Decree, labelling on products that are destined for human consumption should include the following:

a) name and address of the manufacturer (or company name);
b) name of the product;
c) brand of the product (if applicable);
d) net weight (or gross weight, with indication of the tare) or the capacity of the container; and
e) manufacture and sale licence number, though the name and address of the manufacturer may be replaced by those of a reseller or brand, subject to a standard reference being affixed as ordered by the Anti-Fraud Service.

With respect to packaging, specific standards exist for various agrifood products which are made available to the public through the ASN.

INNOVATION AND INTELLECTUAL PROPERTY RIGHTS

The protection of trade marks, patents and copyrights is administered by the African Organization for Intellectual Property (OAPI), while the Ministry of Industry is in charge of overseeing industrial and intellectual property rights through its Industrial Property and Technology Service Office (IPTS) (Stads and Sène, 2011).

Senegal scores moderately on the Intellectual Property Protection Index, ranking 56 out of 140 countries and experiencing a positive trend over the years (World Economic Forum, 2018a). The country performs poorly on patent applications, positioning itself at the 111th place, and slightly better on the overall innovation capability (97th).

The government is criticized for its lack of a clear vision concerning agricultural innovation policies, as well as its weak coordination among ministries concerning research. Linkages are more efficient, however, at the level of research and development agencies. This is also due to the National Agricultural and Agro-Alimentary Research Fund (FNRAA) which, promotes cooperation in the sector. The country has many innovation-related policies in place but many of them have only a limited effect (Stads and Sène, 2011).

There are nine public agencies conducting agricultural R&D in Senegal, out of which the Senegalese Agricultural Research Institute (ISRA) is by far the largest (CGIAR, 2014). ISRA falls under the Ministry of Agriculture and Rural
Equipment, and its funding is administered by the Ministry of Economy and Finance. In 2014, CGIAR noted that agricultural R&D was financially too dependent on donors and development banks (CGIAR, 2014).

The private sector is underrepresented in the country’s agricultural research and development spending, with a share of only 14 percent in 2008. This is due to many reasons including limited or unfair competition in certain sectors, lack of knowledge on the benefits of research, complex procedures required to import agricultural inputs, tough regulation on registering and releasing new products, lack of tax incentives, and so forth. It is for these reasons that innovation in the agrifood sector of the country remains weak. Nonetheless, despite these challenges, innovative companies exist, particularly in the groundnut and cotton sectors for the release of new varieties and crop disease management, as well as in the fisheries and horticultural sectors for their novel practices in processing, storage and packaging (Stads and Sène, 2011).

**EXPORTING**

Senegal’s trade policy design and implementation falls under the remit of the Ministry of Trade, which aims for a competitive economy that will create decent jobs and inclusive development. To conduct negotiations, the Ministry relies on the National Committee on International Trade Negotiations (NCITN), which consists of representatives from various sectoral departments, the private sector, and professional associations. Its sub-committees include trade in goods, trade in agricultural produce, trade facilitation, trade in services, trade and environment, trade, investment and development, and trade-related intellectual property rights.

Exporting is still an activity mainly pursued by larger and foreign-owned enterprises, with less than 15 percent of Senegalese businesses engaged in selling abroad, a share that is lower than the world average of 19 percent (World Bank, 2014a). Marchat and Von Uexkull (2016, p. 25) examine the integration of Senegalese firms into global value chains and find that both the import and export patterns of these enterprises are “mainly opportunistic and based on informal channels and personal knowledge.” As such, to stimulate engagement into formal global value chains, public institutions should take on a more active role in disseminating knowledge about international market opportunities as well as about standards and practices. Agencies that could fulfil such a role include the Agency for Investment Promotion and Major Projects (APIX), the Senegalese Export Promotion Agency (ASEPEX) or the agency for the development and training of SMEs (AEPME) (Marchat and Von Uexkull, 2016).

ASEPEX has been operating since 2005 and is in charge of encouraging and supporting exporting among businesses. Its activities include organizing fairs, providing export guarantees and offering loans on favourable terms for enterprises with potential. VAT is not charged for exports, and financial transactions to fund exporting activities are charged at the reduced rate of 7 percent instead of the usual 17 percent.

Senegal provides several other incentives to stimulate exports. Offshore exporting companies, for instance, are exempted from registration fees or certain taxes such as that on gains from securities, on labour or trade (APIX, 2006). Tax credits are also available for a minimum investment of XOF 100 million (USD 165 000), a threshold that decreases to XOF 15 million (USD 24 800) for companies in the primary sector (WAEMU Secretariat, 2017).

To engage in exporting, companies need to have the status of trader and to possess a relevant permit. Additionally, documents required might include a phytosanitary certificate or a certificate of origin, and export formalities do not usually exceed half a day (WAEMU Secretariat, 2017).

**DISCUSSION**

Supermarket diffusion is still limited in Senegal where traditional retail dominates selling most of the food on the market (Soullier, 2017). It is these small local shops and kiosks, most of them informal, that make available most of the affordable foodstuffs to the local, low-income population. However, as urbanization continues to increase, modern retailer outlets will further spread to the detriment of traditional outlets. This is concerning as the current framework governing the retail sector in Senegal does not promote competition and favours the presence of large and foreign supermarkets that can bear the costs of becoming formal.

The high costs experienced by manufacturers in Senegal (see Operations and Logistics) means that certain processed local food will only be made available by these outlets to higher-income consumers, leaving the traditional small processors out of the value chain as they will not be able to respond to the stringent requirements of the modern supermarkets.
Concerning foreign markets, the Government of Senegal is dedicating efforts to encourage exports, but this is still not often pursued by SMEs. As discussed in earlier sections, Senegalese exports reach international markets with low value addition. This is not surprising as, along with the high costs of formalization, processors also face considerable operational and logistics expenses as discussed in earlier sections.

3.6. Human resources

Human capital, through the knowledge and skills of employees, can provide the basis for building competitive advantage; in this context, human resources (HR) management becomes a tool through which this capital is employed to support a business strategy. By ensuring employee satisfaction, HR practices can also contribute to labour productivity and firm performance. The HR component of a company takes shape not only according to internal dynamics but is also influenced by external factors, most of them pertaining to policies that have an effect on the welfare of employees, and the quality of education.

The way an SMAE shapes its HR strategy has implications for creating decent employment opportunities in rural areas. Examining HR, as such, can help to identify current weaknesses or strengths in terms of decent employment practices, and provide cues on what needs to be addressed in the enabling environment so that SMAEs become better rural employers.

The HR system of a company will take shape according to the employment regulations in the country, and it will be influenced by the factors shaping the knowledge and know-how of staff, such as the quality of the education sector or the availability of corporate training.

Figure 13. External factors affecting the human resources strategy of an SMAE

- Welfare of employees
  - Employment regulations (e.g. gender equality)
- Knowledge and know-how
  - Availability of skills
  - Corporate-level capacity-building initiatives


EMPLOYMENT REGULATIONS

Concerning the labour market, Senegal ranks 92nd, faring slightly better than the sub-Saharan average (World Economic Forum, 2018b). The country receives a relatively good score on the labour tax rate indicator (78.3 out of 100), while pay and productivity, as well as active labour policies, measure weakest among labour market indicators (39.6 and 24.9 respectively).

Senegal’s labour code requires enterprises to offer a fixed contract after two years, which is considered financially risky by business owners (Wellen and van Melle, 2017). For most occupations, the law mandates a standard workweek of 40 to 48 hours as well as at least one 24-hour rest period per week, one month of annual leave, and enrolment in social security and retirement plans. Excessive or compulsory overtime is not prohibited but premium pay is required (United States Department of State, 2017).

From 1996 to 2018, the hourly minimum wage in Senegal was XOF 182.95 (USD 0.3) for agricultural workers, and XOF 209.10 (USD 0.35) in non-agricultural sectors. In 2019, the new minimum wages increased to XOF 213 (USD 0.35) and 317 (USD 0.35) respectively (Wage Indicator Foundation, 2016, 2019).

Employers also have to pay a 3 percent tax based on the total gross salaries paid to employees. Social security contributions of 10 percent are also the exclusive responsibility of the employer (World Bank, 2019e), while retirement contributions are payable both by employers (8.4 percent) and employees (5.6 percent). Employers...
have to subscribe their employees in a medical insurance programme, which usually covers 80 percent of medical expenses. According to PricewaterhouseCoopers (PwC), “the maximum monthly rate is 15 percent, to be levied on a contribution rate that cannot exceed XOF 250 000,\textsuperscript{11} for both the employee and the employer” (PwC, 2019).

IFC (2020) notes that the high labour costs and rigid labour market conditions impede formal agribusinesses from growing; stringent provisions on employment contracts, rigid wage setting mechanisms that disconnect remuneration from individual productivity, layoffs, and working conditions, have resulted in firms often hiring contractual labour to avoid keeping staff on long-term contracts.

GENDER EQUALITY POLICIES

Senegal’s objective of achieving gender equality is laid out in its National Strategy for Equity and Gender Equality (2016 to 2026). The main institution responsible for promoting equality between genders is the Ministry of Women, Family, and Childhood. The government acknowledges the need to facilitate women’s access to markets and support their involvement in processing, agribusiness or rural entrepreneurial activities (Republic of Senegal, 2016b). As such, the country is implementing several projects to achieve these objectives, most of them targeting both women and youth (see section below). Priority is also given to women in the country’s PSE projects and programmes.

In 2017, Senegal’s Gender Inequality Index was 0.515, which ranks the country 124 out of 160. Only 11.1 percent of women have completed secondary level of education, compared to 20.1 percent of men. Another measure of gender equality is the ratio of female to male Human Development Index, also known as the Gender Development Index. For Senegal, this was 0.911 in 2017, which places the country in the medium-low equality group (UNDP, 2018).

While the labour force participation rate for men in Senegal is 69.9 percent, for women it is only 45.5 percent (UNDP, 2018). Additionally, both World Bank and DPME surveys indicate that female participation in enterprise ownership is very low, more specifically, 23 percent and 19 percent respectively (Wellen and van Melle, 2017).

Concerning agricultural labour, women and men are about equally active but often in different capacities. While men are more involved in raising large livestock, it is women who are significantly more engaged in post-harvest activities, and mostly in cereals processing and small-scale marketing (Poulser, 2015). In this context, it is estimated that up to 80 percent of SMAE food processors are women (Anwer and Senghor, 2005 in Matsumoto-Izadifar, 2008).

With regards to the private sector, this is significantly male dominated, with women accounting for only 6.4 percent of managers. Women are most involved as managers in dairy, fruit and vegetables processing and in other food manufacturing sectors, at 14.9 percent. Additionally, the National Survey of SMEs in Senegal reveals that the private sector employs more men than women at the bottom of the ladder, with the latter outnumbering the former as technicians and supervisors (Sarr and Wade, 2017).

AVAILABILITY OF SKILLS AND LINKS WITH THE EDUCATION SECTOR

Improving the relevance of education for the job market is a focus area under the PSE. Social protection and the development of human capital comes second under PSE’s priority actions for 2014–2018, and benefits from 26 percent of the total budget. PRACAS envisions increasing rural incomes, creating agricultural and non-agricultural employment, promoting rural and agricultural entrepreneurship, as well as bringing more young people and women into agriculture by creating modern farms.

Currently, human capital scores poorly in Senegal, the country ranks 118\textsuperscript{th} out of 140 on the skills of the workforce and the quality of education. This poor status is due mainly to only 29 percent of the population having completed secondary school and only a little more than one-third of the population being literate (World Economic Forum, 2018a).

In the fourth quarter of 2017, Senegal had an unemployment rate of 15.7 percent (Senegal Agency of Statistics, 2017). As already discussed, most employment opportunities (53.6 percent in 2016) are in agriculture, while industry accounts for 20.1 percent of employment; however, agricultural productivity is low, contributing only

\textsuperscript{11} Approximately USD 413.
9 percent to GDP. The fact that the country imports processed products that could be produced domestically and exports commodities with low value addition means that Senegal is not realizing its income and employment generation potential (infoDev, 2011).

There is an excess of tertiary graduates, forcing some to take jobs in the informal sector (Cissé, Choi and Maurel, 2016). This is in line with research conducted in developing countries that finds that higher level degrees do not necessarily translate into better employment prospects. In Senegal, while household heads with university education have the lowest unemployment rate, dependents find themselves in the opposite situation. Additionally, it is youths (15 to 35 years old) that are most affected by unemployment. In 2015, unemployment among people with advanced education was 20.9 percent while unemployment with intermediate education was 14.5 percent (World Bank, 2015). Improved quality of tertiary education has been found to lead to higher employment rates, suggesting that this phenomenon is due to a mismatch between the quality of high-skilled labour demanded and supplied (Boccanfuso, Larouche and Trandafir, 2015).

There are several programmes aimed at creating employment for youth and women, often by supporting micro and small enterprises, and even processing activities. Employment and entrepreneurship in rural areas is mainly addressed by the country’s flagship Programme National des Domaines Agricoles Communautaires (PRODAC), which represents one of the PSE’s priorities and is implemented by the Ministry of Youth, Employment and Promotion of Civic Values. PRODAC aims to achieve its employment-creation objective by establishing ten agro-poles, 2 000 groups of agricultural entrepreneurs and 2 000 farms of 5 to 25 hectares each.

The National Youth Employment Agency (ANPEJ) is responsible for ensuring that education matches employment requirements in the market for labour (ANPEJ, 2019). Among the initiatives under its mandate is the Programme d’appui à la promotion de l’emploi des jeunes en milieu rural (PAJER), the project to support youth entrepreneurship in rural areas, which runs from 2015 to 2020. Its activities include training 25 000 young people, implementing 260 modern farms, 210 non-agricultural micro enterprises, 15 packing units and 35 processing plants, as well as strengthening PO partners. PAJER is implemented in collaboration with the National Agency for Agricultural Development (ANIDA) and is meant to complement other similar programmes targeting youth and women (FAO, 2019c). One of them is the Appui à la Promotion de l’Emploi des Jeunes et des Femmes (PAPEJF) programme, which covers other regions than those covered by PAJER. The first phase of the IFAD-funded PADAER project (see Section 3.2) also targeted 200 micro-enterprises or small businesses in the rural areas of four regions. PADAER provided technical, financial and commercialization training to these enterprises in order to facilitate the inclusion of women and youth into agricultural value chains.

While the country does not integrate agribusiness-specific educational initiatives under its PSE strategies, there are isolated efforts to upgrade education in a way that responds to the needs of the sector, often initiated by development actors. For instance, an agribusiness institute has been established in Dakar, the Institut Supérieur d’Agriculture et d’Entrepreneuriat (ISAE), which is the result of a partnership between Africa Lead and a local university (Africa Lead, 2017). The collaboration is part of USAID’s aim to reach agriculture and agribusiness students in the region. FAO is also dedicating efforts to engaging youth in agrifood systems by providing support in launching agribusiness activities through the Modèle d’Insertion de Jeunes dans l’Agriculture et les Chaînes de Valeur Agricole (MIJA) platforms. It is through these platforms that rural young people can learn about agricultural production, aggregation, transformation and service provision (FAO, 2018b). While the project ended in 2018, ANPEJ has committed to investing more than USD 500 000 to ensure the long-term sustainability of the initiative.

Another such project is the Apprentissage pour le développement des territoires ruraux (Adeter) implemented by GRET, an international development NGO, during 2014 and 2017. It provided training in non-farm activities, including processing, in a way that responds to the needs of micro and small enterprises (FAO, 2019d).

Concerning agro-processing-specific educational or capacity-building initiatives under the PSE, these target only the fishing sector by constructing a training centre for adding value to fish products (Senegal Ministry of Economy and Finance, 2014).

**SME Capacity-Building**

Entrepreneurs indicate that it is not difficult to obtain support for developing business plans, accounting or marketing; however, the bulk of support is directed towards high-growth companies, even from ADEPME, the
government's SME development agency. The market for professional business support has a greater reach than public initiatives, even though it is still in its early stages; additionally, the various initiatives from the government, development organizations or commercial actors are implemented in isolation, significantly limiting their potential (Wellen and van Melle, 2017).

SECTION CONCLUSION
From an enterprise perspective, the Senegalese education system is seen as impractical and not business-oriented; additionally, those few highly trained graduates are seen by SMEs as too costly and risky in terms of staff turnover (Wellen and van Melle, 2017).

There are numerous initiatives aimed at including women and youth into agribusiness by making their skills relevant to the sector. These often target small agricultural companies, including food processors, in rural areas, and mainly involve ad-hoc training. The sustainability of these efforts requires more engagement with the education sector. Indeed, evidence reveals that curricula needs to be updated based on feedback from and collaboration with businesses, and more business-oriented modules need to be introduced such as entrepreneurship or market courses.

Senegal should dedicate more effort to developing collaborations with universities and training providers to ensure that the modern curricula matches the needs of agribusiness, especially as the country is aiming to further create employment opportunities in the sector, as seen above.

3.7. Partnerships
As discussed, building partnerships is often a strategy itself for SMAEs as these collaborations can support any of the other business components discussed. External factors that might have an effect on the partnerships component include the intensity of competition in the industry as well as the presence of donors or NGOs in the country, as detailed below.

BUSINESS ASSOCIATIONS
The National Union of Traders and Industrialists in Senegal (UNACOIS) began in the 1990s in response to traders’ dissatisfaction with state-controlled monopoly in certain agrifood sectors. Its mission is to help to promote its members’ activities and develop partnerships (www.unacois.org). It is one of the best established agribusiness organizations in the country, representing traders and retailers – both formal and informal - and undertaking an advisory role to the government’s economic council (NEPAD, 2016; Del Pozo-Vergnes and Vorley, 2015). Promoting business interests is also under the mandate of the Dakar Chamber of Commerce, Industry and Agriculture but it is perceived as an exclusive club for the more influential traders (Lyons and Snoxell, 2005 in Del Pozo-Vergnes and Vorley, 2015). Despite the work of these organizations, the representation of the agribusiness sector is not in line with its actual size and there is no platform bringing together all value chains in the agricultural sector (NEPAD, 2016).

The Association of Local Cereals Processors (ATCL) in 2012 had 24 members milling maize, millet, sorghum, rice and fonio and they provided more than 100 000 tonnes of supply in a year. ATCL aims to improve food security and poverty reduction by facilitating responses to market demand; as such, ATCL initiated contracts between members and farmers or distributors, including European ones, and it also partners with development organizations such as IFAD and USAID (Seck, 2012).

Other business associations have emerged in Senegal but generally these have not taken off, which is likely due to competing attitudes among entrepreneurs, low advocacy capacity or the concerns of informal actors about being exposed to authorities (Wellen and van Melle, 2017).

DONOR AND NGO SUPPORT
International agencies operating in Senegal have historically acknowledged the need to invest in downstream activities in agricultural value chains. In 2007, for instance, four times more budget was dedicated to transforming production-focused agriculture into commercial agribusiness than to production-level activities. The World Bank
was the lead donor financing these efforts, but agricultural processing has also been supported by the African Development Bank (AfDB), BOAD, France, IFAD, USAID, Canada and the European Union. Investment by these actors in production, processing and marketing in 2007 was estimated at USD 27.3 million, while the total commitments from the donor community was estimated at USD 322.8 million. Transport and infrastructure receive the largest amount of funding, estimated at USD 159.8 million, meaning almost half of total donor investments. Environmental protection is also a donor priority with 6 percent of total support (Matsumoto-Izadifar, 2008).
4. Conclusions

Due to its well-articulated national development strategies and the extensive research on the business enabling environment conducted in the country, Senegal represents a compelling case to illustrate the links between policies and the various components of an agrifood processor including procurement, finance, operations, human resources and management, as well as marketing and sales.

The private sector in Senegal still faces serious constraints, the most urgent of them relating to infrastructure, human capital, ICT adoption and financial systems. Nonetheless, the country is addressing these challenges, which are laid out in its strategy and are prioritized accordingly, supported by the donor community complements the government’s efforts. The Adjusted and Accelerated Priority Action Plan (PAP 2A) is envisioned to address weaknesses identified in this paper such as: access to electricity or improved water sources, particularly in rural areas; inclusive and sustainable industrialization; improving educational programmes to match socio-economic needs; enhancing agricultural production in general, and rice in particular (Republic of Senegal, 2018).

Despite large investments in infrastructure, the heavily regulated input and service provision markets still present an important challenge for agrifood enterprises. As such, the high costs of electricity, transportation, and water and sanitation, especially in rural areas, makes local food more expensive than imports which are already preferred by local consumers.

The government’s sectoral approach in areas such as nutrition, means that strategies often do not accommodate the needs of SMAEs that generally undertake activities pertaining to several sectors including agriculture, industry and commerce. This holds true for the segmented approach of the agricultural development strategy which hinders the pooling of resources and capacities of various institutions, and the development of horizontal and vertical linkages. Additionally, many agrifood business initiatives target farmers or POs (e.g., providing processing equipment, developing storage), overlooking existing entrepreneurs who have already made important investments, taken risks in the sector and have the acquired skills and business acumen to connect producers with markets.

Even though the Government of Senegal adopts an SME-oriented strategy, especially from a financial perspective, its actions are not yet reaching a wide range of these enterprises, “favouring high growth entrepreneurs and SMEs in certain sectors” (Wellen and van Melle, 2017). The presence of many informal actors means that a wide range of initiatives will only have an impact on those businesses that are already better off. Nonetheless, current success stories could provide lessons for developing more inclusive strategies. The heterogeneity of SMEs and customized strategies, according to type (e.g., formal/informal, high/moderate-growth, family, etc.) and specific needs and challenges would facilitate growth. Mainstreaming cross-cutting issues, including environmental protection, gender and nutrition, in initiatives that target SMAEs will make sure that these initiatives leverage the role that these actors can play in agrifood systems transformation.

The government has shown a commitment to developing the agrifood sector despite challenges coordinating across many different ministries, donors and actors. This often means that initiatives are implemented in isolation, preventing the sustainability of efforts, such as in the case of developing the human capacity that the sector needs. Better alignment among actors will ensure the wide-reach, scalability and sustainability of efforts needed for the agrifood sector to grow sustainably.

Figure 14 depicts a map of the main actors in Senegal shaping the enabling environment of SMAE processors as drawn from the development of this paper.
Figure 14. Main actors involved in enabling the business environment for SMAE processors

The examination of the institutional and policy environment affecting SMAE processors in Senegal leads to several conclusions and lessons in relation to the country, as follows.

**Procurement.** The government has historically focused on enhancing farm-level production. While these efforts have been successful to some extent, various assessments highlight those investments in agricultural production should be balanced with investments further mid and downstream to maximize the potential of the whole value chain. Area of further improvement include, for instance, enhancing the role of POs in aggregating and commercializing produce, strengthening quality control over local produce, which currently lags behind imports, as well as weak land regime. All these weaknesses are currently discouraging private sector investment, thus hindering various commodity sectors from achieving their full commercialization potential.

**Logistics.** Senegal has dedicated important investments in infrastructure and transportation, an area that is prioritized in its wide national development strategy. However, it is not clear to what extent the logistical needs of rural enterprises (i.e., farm to factory transportation, storage, quality and safety control aspects) have been
addressed, especially given their weak presence in rural areas. Areas of further improvement include the uncompetitive characteristics of support service markets such as transportation, which raise the costs for local producers.

**Operations.** Improvements are noted in electricity cut-off time but again, the high costs in services and inputs markets such as electricity and fuel make it difficult for local manufacturers to compete against imports. The issue is even more prevalent in rural areas, which benefit from lower electricity rates as well as less water supply coverage and quality services than urban areas. Senegal acknowledges its weaknesses in the energy sector and makes it a priority in its national plan.

**Finance.** The need for SME-tailored finance is acknowledged by the government, which has established support institutions such as FONGIP, FONSIS and the National Agricultural Credit Fund of Senegal, specifically serving the agrifood sector. However, poor availability of financial skills along with the financial sector’s limited knowledge about SMEs restrict the impact of such initiatives. Taxes, in terms of both costs and management, represent the most prominent financial challenge for SMEs. Taxes discourage an already large informal sector from formalizing. Another area that deserves attention is also the prevalent lack of information about microfinance, insurance or investors’ financial products. More recent initiatives to improve finance for actors in the rice sector are noted with respect to warehouse receipt systems and agricultural leasing. After proper impact assessments, these could be expanded to other commodity chains.

**Marketing and sales.** The high costs of manufacturing means that certain local manufactured food products will only be available in those stores that cater to the higher income population of Senegal. Additionally, the Senegalese consumers have already developed a preference for imported food, which is perceived to be of higher quality. If these underlying constraints are not addressed, initiatives aimed at promoting local food will only have a limited impact.

**Human resources.** The focus on agricultural production and insufficient attention dedicated to commercialization and value addition along the agrifood value chain also translate into an unrealized employment potential in the sector. Investments in the mid and downstream segments will also need to be paired with efforts towards improving the availability of skills needed in these areas. Capacity-building initiatives are being implemented, many of them specifically aimed at improving gender equality or promoting youth employment in the agrifood sector. However, their fragmented nature means that the effect will be limited, and more efforts are needed to integrate an agrifood relevant curriculum into the overall education sector.

**Partnerships.** There is significant scope for improving collaboration in the agrifood sector and achieving better representation. Roundtable discussions or networking events could be convened by moderators such as governmental agencies or donors who are widely esteemed. Efforts could be dedicated to making existing associations more inclusive to SMEs and agribusiness.

**Cross-cutting issues.** There is room for further engagement from authorities, development actors or trade associations in terms of food safety and quality control. Efforts in mainstreaming nutrition are well noted but investment from the private sector itself is an area that still needs to be addressed. Similarly, environmental compliance and gender equality policies are in place, but these lack an SMAE-tailored focus. Since SMAEs face a different set of challenges from larger businesses or SMEs in other sectors, they might require a distinct bundle of incentives to engage in sustainable practices.

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12 This section draws extensively on Wellen and van Melle, 2017.
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Annex

THE NATIONAL AGRICULTURAL INVESTMENT PROGRAMME – 2011–2015

The National Agricultural Investment Programme (PNIA), initiated in 2011, represents Senegal’s efforts to operationalize the common agricultural policy in West Africa (ECOWAP) and the Comprehensive Plan for Agriculture Development (CAADP) at the national level.

The specific objectives of PNIA, with their assigned priorities, are as follows:

| 1. Reduction of climate risks through water management | i. water management systems;  
| | ii. transfer of excess water to central regions;  
| | iii. constructing and exploiting retention basins, particularly by involving the private sector;  
| | iv. promoting a drip irrigation system for efficient water utilization; and  
| | v. establishing agro-pastoral farms around boreholes. |

| 2. Sustainable preservation and management of natural resources | i. restoring the production base in the groundnut-producing region, as well as protecting and exploiting saline soil;  
| | ii. developing and managing fisheries, terrestrial ecosystems and the seabed; and  
| | iii. fighting bushfires and invasive aquatic plants, creating sustainable forest management, reforesting irrigated areas, constructing the Great Green Wall. |

| 3. Increased agricultural production and improvement of total factor productivity | i. protecting crops;  
| | ii. controlling priority species diseases;  
| | iii. producing seeds;  
| | iv. modernizing farms and equipment;  
| | v. developing traditional agricultural sectors and providing support for new ones; and  
| | vi. developing the dairy, poultry and equine industry. |

| 4. Added value to agricultural products through processing | i. adding value to fish products;  
| | ii. modernizing artisanal processing; and  
| | iii. adding value to agricultural products. |

| 5. Improved access to agricultural markets | i. restoring and constructing roads;  
| | ii. constructing storage infrastructure for cereals;  
| | iii. managing food quality;  
| | iv. construction and restoring storage infrastructure; and  
| | v. adding value to non-timber forest products. |

| 6. Enhanced research to generate and transfer new technologies in production, processing and marketing | i. enhancing potential of fruit by setting up national collections and gardens for mother plants; and  
| | ii. supporting research brought about by investment programmes. |

| 7. Improved capacity of actors | i. revitalizing and sustainably managing agricultural education;  
| | ii. strengthening agricultural and rural extension services; and  
| | iii. building capacity of private and public actors. |
8. Ensure effective piloting and coordination of investment plans

i. strengthening agricultural statistics and creating an agricultural information system;
ii. identification and national census of livestock;
iii. establishing a monitoring-evaluation system;
iv. strengthening food crisis prevention and management; and
v. initiating the necessary learning required for implementing the investment programmes.

Priority is given to boosting agricultural production with 59.4 percent of total PNIA investments, followed by reducing climate risks through better water management with 19.9 percent of the budget. Together with the conservation and sustainable management of natural resources, these three objectives receive 90.4 percent of total financing (Africa Portal, 2011). As such, investment in programmes targeting processing is minimal (0.6 percent), along with commercialization, research, capacity-building and programme coordination, these areas receive only 9.6 percent of the total budget under PNIA. Concerning the 0.6 percent of the budget dedicated to augmenting agricultural products processing, most of the financing is assigned to the Projet d’Appui à la Valorisation des Produits Agricoles (PAVIPA),

Concerning agricultural sub-sectors, millet, maize, sorghum (18 percent) and rice (17 percent) benefit from the largest amount of financing. While investments in the cereals sector largely target intensifying production, for the rice sector financing is directed towards managing water. Given the focus on boosting agricultural production, the types of expenses prioritized are agricultural inputs and equipment (53.4 percent) and hydro-agricultural facilities (15.8 percent) (Republic of Senegal, 2011).

THE AGRO-SYLVEO-PASTORAL ORIENTATION LAW

The Agro-Sylvéo-Pastoral Orientation Law (LOASP) was voted into law in 2004 as a response to the weaknesses of the law governing land tenure at that time. LOASP was meant to provide the main agricultural development regulatory framework of the country for the following 20 years. Several of its strategic axes include, among other things:

- formal recognition of agricultural professions and professional agricultural organizations;
- social protection of people engaged in agricultural professions;
- legal status of farms;
- diversification of agricultural products and the regulation of the market;
- water management; and
- development of rural infrastructure and public services (Republic of Senegal, 2004).

Its vision focuses on increasing exports and incentivizing private investments in agriculture and rural areas (Stads and Sène, 2011). One of the most important contributions of the law was the legal recognition and social protection of agricultural professions. Additionally, the law provided legal recognition to the Senegal Agricultural Services and Producer Organizations Support Programme (PSAOP) and its institutional reforms. The first phase of PSAOP (2000–2005), initiated and financed by the World Bank, has led to several notable results (World Bank, 2010), specifically:

- establishing the National Agency for Agricultural and Rural Advice (ANCAR), jointly governed with producer organizations (PO) and private agribusinesses;
- setting up a network of rural consultative fora (CLCOP) to help organize producers and demand – the CLCOPs now represent the entry point for many initiatives from the government or development actors;
- promoting the involvement of producers in formulating policy;
- refocusing the functions of the Ministry of Agriculture and the Ministry of Livestock from productive and marketing activities to formulating and elevating policy;
- replacing “top-down” extension services with a demand-driven private provision of agricultural services – this was facilitated by creating the semi-private ANCAR; and

13 There are no available documents on PAVIPA.
• setting up FNRAA as a transparent and competitive research financing mechanism for agricultural and agro-processing research projects.

It is important to note that LOASP and PSAOP have made public services more active in their collaboration with POs. However, weaknesses of the first phase of PSAOP included a lack of proper active involvement with the ministries in its coordination and monitoring. Moreover, only 142 out of 320 rural council areas benefited from the intervention and, at the end of the first phase, productivity remained low and food insecurity was prevalent among rural households (World Bank, 2006).

Thus, the second phase of PSAOP (2006–2010), co-funded by the World Bank and the International Fund for Agricultural Development (IFAD), focused on enhancing agricultural productivity and food security by providing agricultural services and innovations to smallholders. Additionally, PSAOP further strengthened the emergence of POs as local partners in developing and formulating policy. Although the programme was to be implemented in three phases, the third did not emerge as the government has not requested funding for a further phase (World Bank, 2013).

While the law is well-articulated and seems to provide an appropriate framework for transforming the agricultural sector, it has also been criticized for the lack of implementation. The National Agricultural Development Programme (PNDA) was created as one of the operational tools of LOASP, aiming to increase and enhance productivity in the sector. However, a lack of oversight and periodic reviews led to only a few activities being realized (IMF, 2006; USAID, 2013). There is also a lack of available data on its results and activities, making it difficult for this report to assess its contribution to the state of agriculture. Nonetheless, the objectives of LOASP were to improve agricultural productivity, increase production and enhance efficiency in the sector.

RETURN TO AGRICULTURE (2006)

REVA, which was started in 2006, represents the operational tool of the Poverty Reduction Strategy and the Accelerated Growth Strategy of Senegal, focusing on combating emigration and rural exodus, especially of women, youth, migrants and returnees, by modernizing farming and engaging people in agriculture. As such, the plan aimed to develop agricultural infrastructure and to institute farming areas outfitted with modern technical methods and irrigated land (Oxford Business Group, 2008). In addition to government financing, REVA received important funding and technical assistance from the Spanish and Moroccan governments (Sall, 2012).

GRAND AGRICULTURAL OFFENSIVE FOR FOOD AND ABUNDANCE (2008)

GOANA emerged as the government’s response to the 2007–2008 food crisis, which was caused by two consecutive rainy seasons with low rainfall. GOANA set ambitious production targets for its main crops, aiming to achieve food self-sufficiency by 2015. For instance, rice was set to reach an annual production of 500,000 tonnes (256 percent increase), maize 2 million tonnes (1250 percent increase), and cassava 3 million tonnes (968 percent increase). To achieve its objective, GOANA provided farmers with equipment, subsidized seeds (75 percent) and fertilizer (50 percent) as well as free shared irrigated agricultural area (500,000 hectares) (Stads and Séné, 2011), for a total cost of approximately USD 803.85 million (Oxford Business Group, 2009).

The plan was criticized for setting short-term and unrealistic targets, as well as for its lack of focus on post-production activities such as processing and commercialization; however, even though the plan did not achieve all its objectives, production in 2009 significantly increased from the previous year for crops such as rice (56 percent), fonio (242 percent), sorghum (60 percent) and overall cereals (125 percent), also aided by increased rainfall (Resnick, 2014).

AGRICULTURAL MARKETS DEVELOPMENT PROJECT (2007)

The Agricultural Markets Development Project (AgMarkets or PDMAS) was introduced in 2007 in collaboration with the World Bank, and it represented the operational tool of the Accelerated Growth Strategy (AGS) in agriculture and agribusiness. The programme aimed to increase farm revenue and non-traditional agricultural exports, including processed products, through the improved competitiveness of supply chains, upgraded irrigation and better infrastructure (Bocoum, 2005). Increased rice production was also added in 2010 as a priority (World Bank, 2014b). The development of irrigation to promote expanding agribusiness has received
most of the funding, amounting to USD 32.58 million, followed by the improvement of market conditions at USD 7.25 million. The development of agricultural exports came to a cost of USD 4.45 million, which was dedicated to activities such as diversifying products and production zones, improving post-harvest infrastructure or services, and strengthening the capacity of POs or exporter organizations.

The World Bank concludes that the project has significantly contributed to the increase of exports, especially those of horticultural products. However, the project's results concerning improved market competitiveness were modest or unclear for certain supply chains including those of processed food.
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