



# MECHANIZED

## Transforming Africa's Agriculture Value Chains



Between 2005 and 2014, Senegal observed average agricultural machinery and agricultural output growth rates of three percent each. According to the 2018 Biennial Review Report by the African Union, Senegal is not currently on track for meeting the Malabo Commitment area #3.1, "Access to Agriculture inputs and technologies," with a score of 3.11 out of a minimum score of 5.53. The overall commitment category score is 10. However, institutional and programmatic interventions by the government reflect its commitment to enhance mechanization along the agriculture value chain.

### INSTITUTIONAL COMMITMENTS

The Ministry of Agriculture and Rural Equipment leads on agricultural mechanization in terms of program design and implementation, while the national agricultural research institute—the Senegalese Institute of Agricultural Research (ISRA), created in 1974—leads on the research into new technologies and machines. Further research in agricultural mechanization is led by the Agricultural Research Center (CRA) in Saint-Louis. CRA-Saint-Louis aims to contribute to the socioeconomic development of northern Senegal through the design and development of new technologies and knowledge generation.<sup>1</sup> The Institute of Food Technology (ITA), an R&D center dedicated to agribusiness technologies is situated under the Ministry of Industry and Mining.<sup>2</sup>

Agricultural mechanization is also promoted by the National Agency for Integration and Agricultural Development (ANIDA), previously known as the National Agency for the Plan of Return to Agriculture (ANREVA), which was created in 2006. Its mission is to promote integrated, competitive, profitable and environmentally friendly agricultural practices to establish viable agribusinesses and make the sector a more attractive business, in particular for young people.<sup>3</sup>

Moreover, the National Agency for Agricultural and Rural Council (ANCAR) was created in 1997 under the Agricultural Services and Producer Organizations Program to promote, conduct and pilot a decentralized agricultural and rural advisory service, helping smallholder farmers to improve their agricultural productivity and increase their incomes. ANCAR actively promotes agricultural technology innovation, the development of good agricultural practices, and provides training and skill development to farmers.<sup>4</sup>

### POLICY AND PROGRAMMATIC COMMITMENTS

In response to the global food price crisis of 2007 and 2008, the government set up a subsidy program for agricultural equipment through the Great Offensive for Food and Abundance (GOANA). Subsidies peaked at US\$36 million in 2012, up from US\$9 million in 2004. The government subsidized tractors at a rate of up to 40 percent.<sup>5</sup>

Agricultural mechanization is also at the heart of the Senegalese Agriculture Pace Acceleration Program (PRACAS), which started in 2012 and aims to modernize family farms through training of farmers and access to finance and locally appropriate equipment. The program also seeks to generate employment opportunities for young people and women in the agricultural sector and provides them with the necessary training and skill development to operate farms machinery and tools. As part of the program, hundreds of tractors, tillers and combine harvesters were acquired and subsidized at a rate of 60 percent.

At the research level, ITA has developed a peanut oil treatment table to reduce the levels of aflatoxins and increase the capacity of peanut processing. This technology has been disseminated throughout Senegal by ANCAR. Largely due to this new tool, the groundnut sector is undergoing profound changes, with a sharp increase in consumption. In 2016, about 350,000 tons were consumed out of a production of one million tons of groundnuts.<sup>6</sup>

The government also promotes mechanization as a way to make agriculture more attractive for young people. Between 2008 and 2015, 79 village and family farms were created or rehabilitated by ANIDA with a budget of about US\$34 million.<sup>7</sup> Approximately 10,000 young farmers benefitted from the program. One of the farms rehabilitated by ANIDA is a horticulture farm, which had originally been established in the 1990s. Following rehabilitation by ANIDA, the farm now covers 13 hectares. It has a borehole and is equipped with an electric pump and two generators. Moreover, a drip irrigation system was installed on five hectares with a rate of two liters per hour. A filtration and



fertigation station was also installed at the head of each plot, which distributes water and nutrients at the plant level.<sup>8</sup>

Since 2015, Syngenta Foundation (SFSA) has been working with farmers in northern Senegal to raise rice production by adding a growing season aided by access to mechanization services (in particular harvesters) through the *Centre d'exploitation des machines agricoles*, a Center for Mechanized Services (CEMA). The idea of each center is to aggregate demand and supply. This enables profitable provision of services that require larger machinery and thus considerable upfront investment. The equipment includes tractors and combine harvesters. Depending on local needs, it can also involve grain processing and storage facilities. Typical CEMA owners are farmer cooperatives or produce aggregators. The aim is for each CEMA is to achieve a return on investment within two to three years. Starting with the

first CEMA established in 1999 with 320 members, the number of CEMAs has grown to reach approximately 4,000 smallholders in 2017.<sup>9</sup>

The recent institutional and programmatic commitments related to mechanization reflect the government's renewed attention to mechanization for agriculture value chain development. Importantly, the government and its partners have placed an emphasis on access to mechanization services for enhancing production and processing, as well as employment creation for youth and entrepreneurship to increase value addition at the post-harvest stages. However, more needs to be done to meet continental and international targets on agricultural transformation. In particular, lessons learned from progress in the rice valley region of the North need to be applied to other value chains in other parts of the country.

Preferred citation: Malabo Montpellier Panel (2018). Mechanized: Transforming Africa's Agriculture Value Chains: Senegal. Dakar. June 2018.

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