



# FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



## SENEGAL Naatal Mbay

Cereal Value Chains

### IMPACT ASSESSMENT

#### Highlights

In the final year of the Feed the Future Senegal Naatal Mbay Project, USAID Senegal commissioned a team of independent experts from Gaston Berger University (UGB) in Saint-Louis, Senegal, to conduct an evaluation measuring the impact of the project's interventions on farmers targeted by the project. The findings of the study, summarized in this brief, show a positive evolution for farmers, as expressed through Naatal Mbay outcomes, namely increased income, food security, resilience, and women's empowerment.

2019

**METHODOLOGY**

The Feed the Future Senegal Baseline Survey, conducted in 2014 by USAID, provided the starting point for this review, which focused on the USAID Economic Growth Project’s (PCE) targeted intervention areas. This impact evaluation then considered PCE communities that were part of both the initial PCE sample and targeted by Naatal Mbay as the sample of project beneficiaries for the evaluation. UGB’s expert panel used the double difference approach to compare a control group (non-project beneficiaries) and a target group (project beneficiaries) before and after project interventions, to measure the difference in progress between the two groups during that period.

Sample	
8.....	Regions
21.....	Focus groups
113.....	Producer Networks
121.....	Villages
1,001.....	Households
15,697.....	People

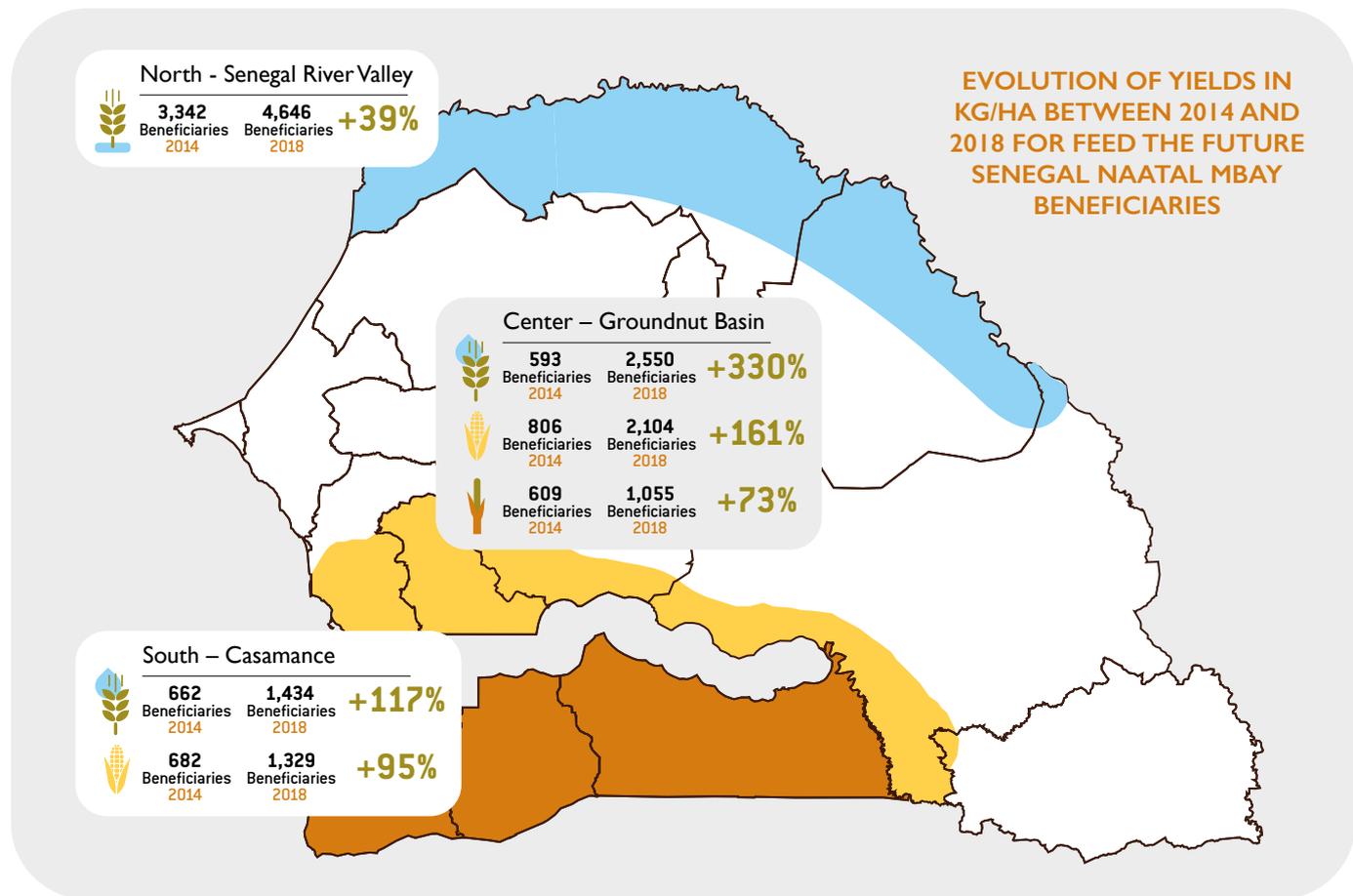
**NAATAL MBAY, MAKING AGRICULTURE PROSPEROUS IN SENEGAL**

Agriculture is a vital sector for Senegal. Its development and food self-sufficiency are major objectives the country has placed at the heart of the Plan for an Emerging Senegal (PSE) via the Program for Restarting and Accelerating the Pace of Senegalese Agriculture (PRACAS). In this context and capitalizing on its previous Economic Growth Project (PCE), USAID implemented from 2015 until 2019, the Feed the Future Senegal Naatal Mbay project. Using a value chain approach, this initiative promoted the wide-scale adoption of innovative technologies and practices by facilitating inclusive development that empowers producers and private stakeholders in the cereal sector in Senegal. The project aimed at improving food security and the revenues of the most vulnerable households living in the intervention areas: the Senegal River Valley in the north of the country, the groundnut basin in the center, and the Casamance in the south.

**PROJECT IMPACTS**

**Sharp Increase in Rice, Millet and Maize Yields**

Across the Feed the Future Senegal Naatal Mbay Zone of Influence (ZOI), for all crops supported by the project, beneficiary producers registered a sharp increase in yields between 2014 and 2018, while non-benefiting farmers remained, overall, at their initial level. The study’s qualitative findings link this strong performance to the project’s capacity building approach, working through partnerships with 123 producer networks, which covered farming techniques, agricultural extension and the use of climate information to adjust to weather variations. Interestingly, the study also showed a slight decrease in the areas cultivated by the beneficiary group, especially for millet and maize. This is a consequence of farmers being able to produce the necessary quantity of food for consumption and surpluses for the market on less land. Many respondents declared that their increased yields have allowed them to diversify into other income-generating activities making use of the freed up land.



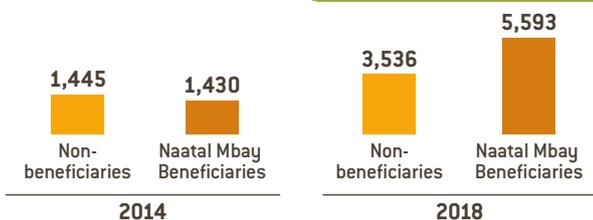
Exchange Rate : Financial data originally presented in this note has been converted at the standard project exchange rate of US\$ 1.00 = 500 FCFA.

### A Significant Increase in Household Incomes

These productivity gains have translated into beneficiary households reducing the share of production intended for household consumption by 50 points. The reduction in share of household consumption thereby increased the surplus sold on the local market, leading to increased revenue. With maize for example, the percentage consumed went from 80 percent in 2014 to 31 percent in 2018. Overall, in the zone covered by the study, the average annual household income in 2018 reached US\$ 4,874 (2,437,147 CFA francs) in 2018, an increase of 46 percent compared to the 2014 baseline. In the beneficiary areas, the average household income increase is 67 percent compared to five percent for the control group. Beneficiary households, in all zones, recorded an average annual total income of US\$ 5,593 (2,796,722 CFA francs), US\$ 2,000 (1,000,000 CFA francs) higher than that of the control group.

#### EVOLUTION OF HOUSEHOLD INCOME IN US\$ BETWEEN 2014 AND 2018

**+ US\$ 1,020** (510,000 CFA francs) annually  
Average impact of the project on income of beneficiary households vs non-beneficiary households



Source : Impact Assessment of the Feed the Future Senegal Naatal Mbay project, UGB (Gaston Berger University) 2019

### An Improvement in Food Security and Community Resilience

In Senegal, cereal production is mainly oriented towards household consumption. Progress made on increasing cereal yields and production volumes have had a direct and positive impact on household food security. Producers surveyed also believe that their resilience to withstand shocks has been improved thanks to skills acquired in the use of good agricultural practices, access to important information (climate, input needs and credits, etc.) for sound decision-making, and the consolidation of this knowledge within producer groups.

#### • A Drastic Drop in the Lean Season

The length of the lean season, defined as the period that starts when food from last year's harvest is finished and continues until the new harvest is available to consume, is an indicator of the positive impact of Naatal Mbay on food security. In 2014, the lean season was registered at 3 months and 28 days, a figure basically the same for both the target and the control area. In 2018, the survey shows that the lean season was reduced to 1 month and 18 days on average for project beneficiaries and to 2 months and 6 days for non-beneficiaries. The impact on the lean season is significant with a decrease of 57 percent for project beneficiaries.

#### EVOLUTION OF THE LENGTH OF THE LEAN SEASON IN MONTHS BETWEEN 2014 AND 2018

	Non-beneficiaries		Naatal Mbay Beneficiaries	
	2014	2018	2014	2018
All Zones	3.9	2.2	3.9	1.6
North	4.8	3.9	5.0	2.4
Center	3.6	1.6	4.0	0.9
South	3.6	1.6	3.2	1.6

Source : Impact Assessment of the Feed the Future Senegal Naatal Mbay project, UGB (Gaston Berger University) 2019

**2 months**  
Reduction of the lean period in the target areas compared with 2014

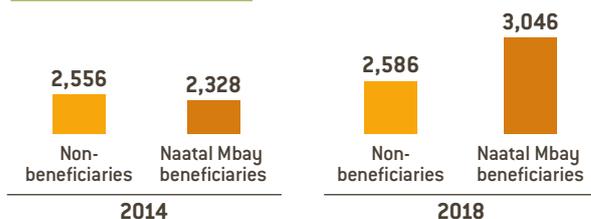
#### • Calorie Consumption Reaches the Recommended Threshold

In Senegal, cereals account for between 70 percent and 81 percent of the daily caloric requirement of consumers. The increased availability of cereals has allowed Naatal Mbay beneficiaries to significantly improve their caloric intake and cover their family food needs. In 2014, Naatal Mbay beneficiaries started, on average, at a lower point than the control group, with an average of 2,328 kcal (kilocalorie) per day, below the "at risk" threshold. In 2018 they have exceeded the recommended threshold of 3,000 Kcal per adult/day; while non-beneficiary households remained only slightly above the minimum threshold with a consumption of 2,586 kcal per adult/day.

The study estimates that the overall impact of the project on consumption is on average 119 kcal per adult equivalent. In addition, the project has had a significant impact on reducing the number of households at risk by 8 percent and an increase of 10 percent of households now with a "very satisfactory" food situation. These results show the positive impact of Naatal Mbay on helping beneficiary households meet their food consumption needs, a crucial point in its food safety objective. Nevertheless, 42 percent of beneficiary households remain vulnerable in the Naatal Mbay Zone of Influence.

#### CHANGE IN CALORIE CONSUMPTION PER ADULT EQUIVALENT UNIT BETWEEN 2014 AND 2018

**+15%**  
in calorie consumption for beneficiaries vs non-beneficiaries



Source : Impact Assessment of the Feed the Future Senegal Naatal Mbay project, UGB (Gaston Berger University) 2019

#### A Contribution to Women's Empowerment

UGB relied on the Women's Empowerment<sup>1</sup> in Agriculture Index (WEAI) to assess the progress made on women's empowerment amongst the Naatal Mbay beneficiaries versus the control group, as a measure of their autonomy and inclusion in decision-making. Between 2014 and 2018, the index has evolved 13 points in the north and 5 points in the south. Naatal Mbay has had a positive influence on women's empowerment in these areas. In 2018, at its height of activity, the project had a positive impact on women's empowerment estimated at 22.4 percent in the north, 25.4 percent in the center and 34.1 percent in the south. The interventions of Naatal Mbay on women's empowerment is manifest for example in land acquisition capacity where 27 percent of project beneficiaries reported using their personal savings to acquire additional land compared to 12 percent for non-beneficiaries.



**+15%** women beneficiaries vs non-beneficiaries invest in the acquisition of land

<sup>1</sup> Index designed jointly by USAID, the International Food Policy Research Institute (IFPRI), and the Oxford Poverty & Human Development Initiative (OPHI)



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## EMPOWERING FARMERS AND VALUE CHAIN ACTORS FOR INCREASED PROFESSIONALISM AND SELF-RELIANCE

The study concludes that the Naatal Mbay theory of change for the inclusive scaling-up of productivity gains within cereal producing households proved to be relevant. It helped to achieve its assigned goals effectively and efficiently. The project's strategy to entrust smallholder producers with implementation has resulted in a wide range of positive outcomes, beyond the immediate adoption of technologies, and increased incomes and food security. The project has accompanied the populations in a cyclical and progressive evolution that allows them today to use modern technologies and practices (databases, Geographical Information System, data and information on environmental changes, etc.). Evaluation respondents and focus group participants shared their sense of reassurance and support provided by Naatal Mbay advisors to producers and partners during the adoption and scaling-up of new practices. This new self-confidence of stakeholders opens-up positive and long-term prospects for the development of the food sector and contribution of local private initiatives. The strengthening of producer network capacity, the modernization of production and risk management approaches, the structuring of cereal value chains, and the training of young field agents, have collectively built an endogenous agricultural expertise in the intervention zones which lays the foundation for a more professional agricultural sector in Senegal in the future.

For more information, consult the impact assessment report online:

[www.usaid.gov/senegal](http://www.usaid.gov/senegal)

[www.ipar.sn/chaines-de-valeur-agricoles-au-senegal](http://www.ipar.sn/chaines-de-valeur-agricoles-au-senegal)



The Naatal Mbay project (Flourishing agriculture in Wolof), spanning four years (2015-2019), invested nearly US\$24 million (12 billion CFA francs) to support the rice, maize, and millet cereal value chains. It has created business opportunities for inclusive growth and development of the agricultural sector in the Delta and the Senegal River Valley, in the southern portion of the central peanut basin, and in the southern regions of Ziguinchor, Sédhiou, and Kolda. Naatal Mbay was implemented in the context of Feed the Future, an initiative launched by the Government of the United States of America in 2011 to combat hunger and food insecurity in the world.

For more information :  
[www.feedthefuture.gov](http://www.feedthefuture.gov)



USAID is the United States Agency for International Development, one of the most active agencies in the world in this field. In Senegal, USAID is working in close collaboration with the Government of Senegal in the fields of health, economic growth, agriculture, education, and good governance.

For more information :  
[www.usaid.gov/senegal](http://www.usaid.gov/senegal)



The Gaston Berger University (UGB) of Saint-Louis is a public Senegalese university specialized in teaching modern science. For the purpose of contributing actively to the development of the sub-region, the university has at its disposal several research centers specialized in agriculture and aquaculture, in sustainable development, in public health, in the environment, in computer science, in religion, and in assessing policy impact and development programs.

For more information :  
[www.ugb.sn](http://www.ugb.sn)

This publication is a summary of the main key findings of the independent study, conducted by the Gaston Berger University, on Feed the Future Senegal Naatal Mbay project's impact evaluation. Produced by RTI International, it has been made possible thanks to the support of Feed the Future through USAID (United States Agency for International Development), in accordance with contract no. AID-685-C-15-00001. The opinions expressed in this document are those of the author or authors and do not necessarily reflect the views of USAID.