



Key Results in Benin



Benin



The Government of Benin invested during the period 2011-2019, a total of **\$US 36.8 Million** to increase the productivity of maize, cassava, poultry, pineapple and cashew value chains. The main activities supported were:

- i. Research and development infrastructural construction and rehabilitation and equipment procurement;
- ii. Training of young scientists and extension agents;
- iii. Technologies and innovation (T&I) generation;
- iv. T&I dissemination for broad adoption.

Major Research & Development; infrastructural construction & equipment (2012 - 2016)

\$US 4.60 Million



Major Renewal of research-development personnel (2012 - 2016)

\$US 2.29 Million

104 Young Scientists Trained

Technologies dissemination between 2012 - 2016

\$US 20.4 Million

219 023 farmers adopted T&I on **290 040 ha**



Major Research & Development activities between 2012 - 2016

16 Technologies and Innovations Released

\$US 2.56 Million

Success Stories



In Benin, polyethylene film doubles the yield of pineapples

WAAPP has successfully introduced new production technique using polyethylene film which allows pineapple producers in Benin to substantially increase their yields. So far, 144 producers participating in a pilot program have doubled their production, going from 35 to 70 metric tons of pineapples per hectare. Community associations have taken the lead on monitoring these agricultural projects, particularly by checking on the investments and ensuring that these new practices are disseminated within farmer organizations.

In the commune of Zè in Agbodjèdo, Daniel Koudessa and his six partners in the pineapple producer village cooperative are enjoying newfound success. After having piloted a pineapple production technique using polyethylene film on one hectare of their farm, they have already been able to significantly increase their yield. «This technology has helped us resolve workforce issues we were facing previously, and allows us to have better yields with shorter production cycles,»

explained Daniel Koudessa, with a sigh a relief.

By covering crops with this film, farmers are able to retain moisture in the soil throughout the year, saving on costs of water, irrigation, and labor. So far, 144 producers from 10 organizations and 27 technicians have been trained in the communes of Allada, Tori-Bossito, Zè, and Toffo. The adoption of this new technique was made possible thanks to the West Africa Agricultural Productivity Program (WAAPP) and 13.2 million CFAF (\$21,000) in funding from the Agricultural Productivity and Diversification Project (PADA) to help conduct several pilots of the use polyethylene film in Benin's pineapple production zone. The PADA and the WAAPP complement each other. WAAPP coordinated by CORAF/WECARD works at the regional level to catalyze agricultural research and the introduction of new technologies meanwhile the PADA finances the large scale dissemination of these innovations at the national level.

Athanase Akpoé, President of the National Federation of Pineapple Producer Village Cooperatives of Benin (FENACOPAB), believes this new technology is yielding positive results and considerable profits. «The introduction of polyethylene film into the pineapple production process is primarily a matter of financial profitability. The balance sheet for one hectare of pineapples produced without polyethylene film shows that we are investing approximately 1.8 million CFAF (\$2,800) for gross sales amounting to at least 4 million CFAF (\$6,400) per hectare. With polyethylene, we are moving toward an investment of about 3 million CFAF (\$4,800) per hectare to obtain gross sales close to 8 million CFAF (\$12,800).»

Furthermore, producers attest that the new technology has resolved the problem of labor shortage in the region, which was linked to the massive exodus of young people to the big cities. It also helps them meet the ever-growing demand from Promo Fruits, the company that produces IRA pineapple juice, a popular brand in Benin and abroad. «To satisfy Promo Fruits's demand, we need to produce more and improve our yield. Currently, the output from pilot plots yields 65 to 70 metric tons per hectare, compared to 35 to 40 metric tons previously. We are therefore in the process of disseminating this new procedure across the entire region,» said Nina Dessouassi, the technician in charge of supervising producers in Allada.

In addition to the introduction of this new technology, the PADA supports organic pineapple production efforts. To this end, Roseline Capo-Chichi has received support to produce compost in Allada-Togoudo. «I used to have a wooden compost bin, but with the grant of 10 million CFAF (\$16,000) that I received from the PADA, I now have a concrete bin with a ten-year lifespan and a water tank. My production has increased from 3 to 50 metric tons of compost in two months. I supply over 500 organic pineapple producers with compost and can now meet the growing demand from customers,» affirmed the young farmer.

Other developers have received financing for the processing of agricultural products through the competitive fund and matching grant facility (financed by the PADA). This is the case of Jean Fonton, the manager of JEC SARL, who has been able to establish a production plant for pineapple juice cans—a first in Benin—with 49.5 million CFAF (\$79,600) in funding. Promo Fruits was also provided 23.5 million CFAF (\$37,800) in 2014 to boost its production capacity, which in turn rose from 214 kilograms per day to 45 metric tons per day.

The PADA and the WAAPP are two components of the Agricultural Diversification Support Framework Program (ProCAD) financed by the World Bank in Benin. These two projects have a very positive impact among

small producers, who contribute significantly to the development of their communities through the increase in their income.

«Both projects aim to restore and improve crop productivity, and develop a number of value chains such as pineapple, rice, cashew nuts, and fish farming through the financing of processing plants. Their objectives converge to improve technology in order to develop agriculture and positively impact family farms,» noted Bertin Adéossi, National Coordinator of ProCAD.

More interestingly, ProCAD introduced citizen oversight into its interventions, allowing Benin's Platform of Civil Society Actors (PASCIB) to be actively involved. «Citizen oversight is conducted at all levels. The platform even chaired the committee to protect the confidentiality of files. We also regularly go into the field to check on the investments and identify cases where dishonest entrepreneurs have abandoned project sites,» stated Ernest Pédro, Permanent Secretary of PASCIB.

This civil society oversight has a positive effect on outcomes and encourages beneficiary producers to adopt the best practices introduced by the ProCAD, and disseminate them within their farmer organizations.



All of this is to limit the exit of currencies and create more jobs in the maize sector, especially for young people.

Benin, The use of Mixed Flour in Bakery

The mixed flour is composed of 15% corn flour and 85% wheat flour and it is used to make bread. This technology was imported from Senegal and was adapted by the National Institute of Agricultural Research of Benin (INRAB).

This mixed baking technology is part of the effort to revalue local grains and reduce the purchase price of bread. Composite bread also has comparative advantages in terms of nutritional qualities and the fight against food insecurity.

Much more than ordinary whole meal bread, composite bread contains more fiber, can be stored longer, and is less rich in gluten; which facilitates digestion.

This technology has economic repercussions for the country of adoption because it boosts the demand and consumption of locally produced cereals, it creates a new source of food and thus generates more income for farmers.



Benin depends largely on agriculture to stimulate its economy. One of the programs it hopes will help achieve this ambition is the West Africa Agriculture Productivity Program (WAAPP)

Benin Relies on WAAPP to Increase Agri Production

In 2017, Benin got an additional USD 13 million loan to further develop the agriculture sector from the World Bank under the WAAPP implemented by CORAF.

Actors of the program met recently in Cotonou to launch the new phase which runs for three years.

The new program seeks to further develop a regional market for quality seeds and the transfer of technologies. It is also hoped that through the program, the National Center of Specialization on Maize will be upgraded to a Regional Center of Specialization.

By so doing, the program will contribute to building the resilience of communities across Benin and further tackle critical food and livelihood security challenges facing the country.

Sixteen technologies were generated under the earlier phase of the WAAPP in Benin and contributed to at least a 15 percent increase in productivity.

According to the country's Agriculture Minister, Gaston Dossouhoui, WAAPP will continue to facilitate access to technologies to farmers and markets, improve agriculture inputs and infrastructure.

Benin's National Plan for Agricultural Investments and Food and Nutrition Security seeks not only to increase production but also to add value to its primary commodities, improve market and build the resilience of the agriculture system.

The WAAPP has been instrumental in adding value to key crops such as maize, pineapple, cashew, and fish.



Progress Made on Cashew Yields in Benin

Trails on plantations of cashew growers in Savè, Benin show an increase in yields and incomes when producers take suggestions on best agriculture practices from scientists.

Yields in cashew nuts are generally low in Benin. They vary between 300 to 600 kilograms (kg) per hectare. Experts blame this on the poor agricultural practices. Adopting new fertilization methods can improve productivity.

Benin's leading agricultural research institution (INRAB) conducted fertilization tests on cashew trees from 2015 to 2017 in selected rural areas. The results show that, when the NPK mineral fertilizers are applied to cashew trees, they lead to positive results.

Besides generating dark green leaves, fertilized cashew trees have a significant increase in nut production. Dark green leaves are a sign of the health of the cashew trees.

The Case of Mr. Hyppolite Kotchadan

Trails were conducted on 0.40 hectares belonging to Mr. Hyppolite Kotchadan. In 2017, he harvested 420 kg of cashew nuts. This is about double the harvest made in the same surface area before the start of the trial in 2015. This also corresponds to a

yield of 1050 kg/ha. Mr. Kotchadan argues that nuts harvested on the trail plot represent about a quarter of the total quantity that he harvested on his five hectares plantation. The fertilized area was less than a tenth of the total area of the plantation. In 2017, Mr. Kotchadan sold about 1700 kg of cashew nuts for a total amount of 1,358,000 F CFA (USD 2700). Thanks to the proceeds, he was able to purchase a motorbike that now allows him greater flexibility to move around.

Encouraged by the results, Mr. Kotchadan is now saving money and planning to apply similar practices in other parts of his plantation.

As part of the implementation of the West Africa Agriculture Productivity Program, a project designed to improve on job creation and raise the income levels of actors in the cashew value chain in was implemented in Benin, Burkina Faso, Côte d'Ivoire, Ghana, and Senegal.

Over 4420 producers, processors, and students were supported during phase one of this project.

The cashew industry is growing and becoming a considerable source of revenue for the most economies in the region. Three West African countries (Côte d'Ivoire, Guinea-Bissau, and Benin) are among the world's top five exporters of raw cashew nuts.

About WAAPP

The West Africa Agriculture Productivity Program (WAAPP) involves 13 countries. The 10-years program was designed to make agriculture more productive, sustainable and profitable for smallholder farmers in West Africa. Started in 2007, WAAPP also aims to improve the conditions of life of consumers through the provision of agricultural products at competitive prices, build a critical mass of researchers for sound, efficient and collaborative research programs and finally to ensure that technologies generated nationally are available regionally. The WAAPP was established at the initiative of the Economic Community of West African States (ECOWAS) as a response to the renewed commitment by African countries to implement the Comprehensive African Agricultural Development Program (CAADP). Participating countries fund the USD 500 million program through a loan system obtained from the World Bank. At the regional level, the program is coordinated by CORAF. More than two hundred technologies were released and adopted by almost 4,5 million producers and processors on about 4.8 million hectares. These technologies are available on www.mita.coraf.org. WAAPP financed master degree and Ph.D. studies for 1021 youths. This represents 72% of men and 28% women. These young researchers are expected to replace most the agriculture researchers going on retirement. The nine national centers of specializations of countries participating in the program benefitted from the renovation of their infrastructure and new research laboratories were constructed. Two of the centers have been upgraded in regional centers of specialization. This includes the Dry Cereals Center based in Senegal and The Roots and Tuber center based in Ghana. By increasing the primary crops yields between 30% for dry cereals and 150% for rice, fruit, and tubers, the program has had a considerable impact on food security and caloric intake. Caloric consumption rose from 2,777 kcals to 2,964 kcals and the "hunger period" reduced by 28 to 55% according to the commodity. WAAPP has also increased by 34% the economic situation of farmers as well as transformed communities.

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