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WEST AFRICA AGRICULTURAL PRODUCTIVITY PROGRAMME
PROGRAMME DE PRODUCTIVITE AGRICOLE EN AFRIQUE DE L'OUEST

Key Results in Niger



December 2018

Niger



The Government of Niger invested during the period 2011-2019, a total of **\$US 45 Million** to increase the productivity of livestock (dairy & meat), poultry, cow-pea, onion, sorghum, groundnut 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 12.44 Million



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

\$US 0.85 Million

96 Young Scientists Trained

Technologies dissemination between 2012 - 2016

\$US 23.07 Million

275 882 farmers adopted T&I on **1 740 455 ha**



Major Research & Development activities between 2012 - 2016

11 Technologies and Innovations Released

\$US 7.64 Million

Success Stories

One of the WAAPP-funded buildings in the University of Abdou Moumouni in Niamey



Budding Scientist Whose Main Ambition is to increase Milk Production in Niger

For a society where the majority of girls and women are confined to household chores or mostly laborers in fields, breaking through the gender and societal stereotypes can be extremely challenging.

But not for this 30-year-old Nigerien student taking a Ph.D. in Animal Production in the University of Abdou Moumouni in the capital, Niamey. The University of Abdou Moumouni is Niger's oldest higher education institution and has the largest enrollment of all universities.

"There are many people who question why I am focusing on education rather than getting married. But I have no priority other than complete my studies and contribute to growing my country. Studying and getting married are not incompatible. When my time comes, I shall get married," says a delighted Halidou Maiga Naffisatou.

Naffisatou is among the pioneer students of a master program on animal production funded by the West Africa Agriculture Productivity Program (WAAPP). She was among the three female students out of a class of 16. She successfully graduated in 2017 and enrolled in a Ph.D. program. She is expected to graduate in 2020.

"When I was in undergraduate studies, I told my preferred lecturer that without a program in animal production, I shall not continue graduate studies," she says.

Why?

"Because I have always loved animal production and livestock in general. But my motivation is related to the fact that I see many people across Niger demanding quality and nutritive milk."

"It is this knowledge that also guided the choice of my research theme. What I am doing is to increase livestock productivity and milk production," she adds with a smile.

You get a sense in speaking with Naffisatou that she is really enjoying what she does and seems to have chosen the right area of studies to bring a contribution to the challenges facing her country.

Naffisatou's is currently working on artificial insemination, a process whereby sperm cells from a male animal are collected and manually deposited in the reproductive tract of a female.

Though debatable, this process comes with some benefits including improving the quality of livestock and increasing production.

Though Nigeriens have a long culture with livestock production, malnutrition rates are still relatively high, according to the United States Agency for International Development, West Africa Mission.

Naffisatou sees her long-term future in being able to address this critical challenge. "You cannot address the food and nutrition insecurity of the 20 million Nigeriens without adequate breeding programs.

Increasing Agriculture Research, the Nigerien Way

Most West African countries invested heavily in the past decade in the training of young researchers as a way of filling the shortage of agricultural scientists in their respective countries.

Overall, about 1000 young scientists including about 30 percent women received scholarships to pursue master degrees and Ph.Ds. in priority areas.

In Niger, actors opted to focus on training researchers more in the livestock sector. What was particularly unique about the WAAPP capacity building initiative in Niger was the creation of a master program in the Faculty of Agriculture of the University of Abdou Moumouni.

The support included construction of infrastructure and paying for teaching staff time. In the Niger approach, the new master program seeks to address current and future needs. Overall, the management of the program says two batches are out with about 95 employment rate.

Overall, about 170 students were trained in various areas of livestock in Niger.

Independent analyses have concluded that the program has made a substantial contribution to improving the West Africa R&D capacity all across West Africa.

Sustaining the Program

As many development programs, owning interventions by countries could be critical for the sustainability.

When we met with the Vice Rector of the University of Abdou Moumouni who is also the coordinator of the WAAPP-funded program, he said that many of the cost related to the running of the program is increasingly being taken up by the university.

The long-term strategy is to ensure the program can function on its own, says Dr. Chaibou Mahamadou.







© Credit WAAPP Niger

Dr. Abdou spent four years (2012-2016) in the University of Kwa-Zulu Natal in South Africa where he obtained a Ph.D. in animal food and nutrition. He led the department of Animal Production in Niger's main research institute, until recently where he was appointed as the coordinator of the livestock Regional Center of Specialization.

The 'New Scientists' Re-energizing Livestock Research in Niger

About a decade ago, the department of animal production of Niger's National Institute of Agricultural Research (INRAN) had just one PhD-qualified agricultural researcher. INRAN is Niger's principal agricultural research agency

"Today, there are eight PhD-qualified agricultural researchers in the Department of Animal Production in INRAN thanks mostly to the capacity building initiatives of the West Africa Agriculture Productivity Program (WAAPP)," says Dr. Nourou Abdou, Head of Department.

As a beneficiary of the WAAPP funding himself, Dr. Abdou spent four years (2012-2016) in the University of Kwa-Zulu Natal in South Africa where he obtained a Ph.D. in animal food and nutrition. He had a chance to carry on with post-doctoral studies in South Africa, but Abdou opted to return home and serve his country in the critical livestock sector.

Niger has a long cultural history with Livestock farming. Majority of people in Niger depend on livestock and subsistent farming for their livelihood. This sector is, however facing challenges ranging from climate change, desertification, land tenure, health, and nutrition.

“I had many other possibilities to stay and work in South Africa. But I returned home because of patriotism. It is better to return home and work rather than go on adventures,” he says.

Research and development (R&D) in Niger like in most West African countries is primarily donor-driven. Agricultural research faced considerable challenges following the end of a World Bank-funded program in 1998. With the introduction of the WAAPP in 2008 and its different capacity building actions, some relative progress has been made in this regard.

For the new scientists trained under this program, this is an ideal opportunity to contribute to advancing agricultural research in their countries.

Learning abroad and experiencing other lifestyles in relatively more developed countries can make resettling back home considerably challenging.

“The working conditions may not be as attractive as we want and things may not be as we want. But, it is up to us to make it work,” says a determined Abdou.

In 2017, Dr. Abdou was appointed Head of the Department of Animal Production of INRAN. Compared to a few years back, this is significant progress for this 49-years old researcher.

“Without the additional credentials obtained thanks to WAAPP, this promotion would not be possible,” he says.

At his new job, Dr. Abdou is already working hard with his staff to build a clean and decent working environment. And already, progress has been made in the physical environment. This is in part because he believes that with determination, everything is possible. “It will work if we want,” he adds.

“Here we have a young team, and our commitment is to improve things. That is the engagement we have taken.”

A 43-Year Old Battling the Foot and Mouth Disease

Forty-three years old Souley Kouato Bachir returned home to Niamey, Niger after spending five years in the University of Liege in Belgium. Between 2012-2017, he studied veterinary science.

The state of Niger spent close to USD 100.000 (roughly 47 million FCFA) on Dr. Souley. While this might seem enormous, the return on this investment is already palpable.

“The foot and mouth disease is a highly contagious viral disease affecting domestic and wild ruminants and pigs. It is endemic in Niger with potential impact on the national economy because of its negative effect on animal production,” he argues.

“One of the main findings of my research on the foot and mouth disease is that it makes good economic sense to vaccinate the animals,” says Dr. Souley.

Niger exports livestock to West Africa and other parts of the world. Foot and mouth diseases can severely hinder the levels of exports as well as milk production. For a country that depends largely on livestock, this can be a major challenge.

For this WAAPP-sponsored Nigerien, his new knowledge and work will be critical to understand the adequate vaccine and ensure those in the livestock value chain take up the treatment.

Driven by the Love for Country

At a time when most West African youths are taking enormous risks to travel to unknown destinations in search of better economic conditions, it is somehow impressive to see others who are driven by the love for country.

For many decades, governments in Sub Saharan African countries have provided scholarships for its citizens to study in Western universities, but many decided against returning home. They instead took up relatively lucrative teaching jobs in the higher education sector.

But not for these Nigeriens we met in the capital Niamey in mid-May 2018.

Dr. Souley Kouato Bachir studied in the city of Liege, Belgium where there is a strong Nigerien community. Meaning that if he had decided to stay in Belgium, he could have found a host.

But once he was done with his studies, he immediately decided to return home to invest his time in agricultural research.

“It was never my intention. I could have done it back in 2009 when I had no job back at home. But when I completed my master degree, I returned home without even being sure of what to do.”

With a Ph.D., he was more confident that he would have a place in the Nigerien economy.

“With a Ph.D., I will struggle in Europe. Adaptation will be challenging. Back at home, while economically, I do not make as much money as others in Europe, I am comfortable on the social side.”

Dr. Souley acknowledges that there are not many in the country. It is a source of pride for him to have reached this level of studies and be able to bring his knowledge and skills at the service of the people of Niger.

And since his return home, he is helping INRAN make progress in understanding the foot and mouth diseases and by extension improving the animal welfare of Niger’s livestock.

A ‘New Generation’ of Agriculture Scientists in West Africa

Most West African countries invested heavily in the past decade in the training of young researchers as a way of filling the shortage of agricultural scientists in their respective countries.

Overall, about 1000 young scientists including about 30 percent women received scholarships to pursue master degrees and Ph.Ds. in priority areas.

About ten years after, several independent analyses have concluded that the program has made a substantial contribution to improving the West Africa R&D capacity.





Innovations Double Milk Production in Toukounous, Niger

Milk production in the Toukounous dairy farm in Niger has more than doubled as a result of innovations provided by the West Africa Agriculture Productivity Program (WAAPP).

«Milk yield per cow has doubled since the start of the WAAPP project,» Prof. Moumouni Issa of both the Faculties of Science and Agronomy of the Abdou Moumouni University located in Niger's capital, Niamey said.

The government of Niger invested substantially in research and development in recent years as part of broader efforts to increase local milk production and reduce the imports of dairy products.

The WAAPP funding enabled scientists to conduct research activities including crossing the famous indigenous 'azawak' cow species with exotic cows from Italy and France.

Experts argue that the azawak has unique features that facilitate their adaptation to the unusually harsh climate of Niger. Scientific evidence also shows that the azawak can produce between 5-15 liters of milk daily under the favorable conditions. In addition, they are also excellent in terms of meat production.

With the WAAPP funding which included the purchase of laboratory equipment, the researchers at the Toukounous ranch

have not only been able to conduct the critical genetic research but take measures towards the conservation of the local breeds through a sperm conservation system that can last as much as 40 years.

«The WAAPP supported us in the construction of infrastructure and in critical equipment that allows us to carry out artificial insemination,» said Prof Moumouni.

Milk Production still Below Demand

Though Niger has a long cultural history with Livestock farming, this West African country still imports a substantial quantity of dairy products each year. According to available data, the country produces 1,002 million liters of milk annually against a requirement of 63.8 liters (per capita / year).

More specifically, WAAPP supported the Toukounous farm in the following areas:

- The creation of modern farm;
- Collection and conditioning of sperms;
- Building equipment;
- A training room;
- Four (04) sets of electricity generators;
- A vehicle;
- The renovation of the cow barn and the laboratory;
- The construction of the laboratory;
- Equipment and consumables in artificial insemination;
- The creation of a master's degree program in animal production at the faculty of agronomy of the country public university.

Challenges

Modern dairy farms divide the animals into different management units depending on their age, nutritional needs, reproductive status, and milk production status. The group of cows that are currently lactating, the milking herd, is often managed most intensively to make sure their diet and environmental conditions are conducive to producing as much high-quality milk as possible.

«Most of what we do here is extensive rearing. This is very challenging. We do not have all the conditions for intensive rearing. And this represents a significant challenge for us in the sense it slows down our production levels,» said Prof. Moumouni.

Also quote the director of the ranch

Livestock Regional Center of specialization Making Critical Strides

The WAAPP set up nine centers of specialization at inception. Niger agreed to lead research on livestock for the West Africa region.

So far, the center is close to becoming a regional center of excellence.





Maradi Opens New Opportunities

In West Africa, the red goat of Maradi is improving the lives of family farmers, stimulating local economies, and making better nutrition more accessible. These indigenous livestock species are well-suited for West Africa, with a wealth of genetic diversity that makes them more adaptable to a changing climate. With assistance from the West and Central African Council for Agricultural Research (CORAF), these breeds are becoming easier and more profitable to raise. The Red Goat of Maradi is found in central Niger and is economically important in rural households for its milk and skins. A typical litter is two to three kids, and they reach reproductive age at six to seven months, with two litters a year. Each female goat can produce 0.6 liters of milk per day for three to four months after each litter. Its milk is rich in Vitamin A and in rural Niger it is known for saving maternal orphans. The meat is a good source of protein, and the skins are used in internationally-praised luxury leather goods.

Maradi in Côte d'Ivoire, Burkina Faso, and Mali

The Centre Secondaire d'Elevage Caprins (Secondary Center for Goat Breeding) in Niger was established in 1963 to conserve, improve, and disseminate the red goat, as well as teach adaptive livestock techniques to farmers. Through this breeding program, the red goat is now pre-

sent in many parts of Niger. The WAAPP has further distributed red goats to Côte d'Ivoire, Burkina Faso, and Mali to improve local economies and provide additional nutrition.



Milk derived from the Red Goat of Maradi is very nutritive and has been documented to have other health and socio-economic benefits. This is why many other countries have been to Niger to adopt the techniques generated by the national research center.

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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