



WAAPP REGIONAL IMPACT e-NEWSLETTER

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Three Life-changing Innovations



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Wassachiè chicken: good business for poultry farmers in Mali?

WAAPP, the West Africa Agricultural Productivity Programme, transforms West African agriculture by boosting productivity and sustainability, reducing hunger and improving nutrition, creating jobs and supporting collaboration across borders. The West and Central Africa Council for Agricultural Research and Development, CORAF, implements the program. In 2016, WAAPP was rated as the second best project in Africa funded by the World Bank.



THREE LIFE-CHANGING INNOVATIONS



Some research has shown that women's income tends to benefit children and family than does the income of men. With more and more women getting involved in rice farming in West Africa, this could mean improvements in the livelihoods of families

Maradi & Balami: Both are products of research by the Regional Center of Specialization on livestock in Niger. Both breeds are revered by livestock farmers for their exceptional genetic wealth and adaptation to the changing climate. 31 years-old Rahat Dom-boua of Bla in Mali is one of the early adopters of the Balami. With increased financial security resulting from rearing the 'Balami,' she can now support her two daughters and family better.

Wassachiè: Compared to the broiler chicken, the Wassachiè is more resistant to diseases, nutritive, taste better, and hatches more eggs. Following extensive research funded by WAAPP Mali, it was discovered that the Wassachiè has rare genetic properties and improved characteristics with the potential to boost the poultry industry in West Africa while contributing to nutrition security. Retired commissioner of police Yaya Sangare has raised ample capital, infrastructure, labor, and other inputs to set up a poultry farm of mainly Wassachiè. Today, he supplies the local market in Bamako.

Off-Season Rice: Located in the Sahelian Belt of West Africa, Mali faces unpredictable rainfall, drought, and sometimes fluctuating weather patterns due in part to the changing climate. With degrading soils and inadequate farm inputs, this can make agriculture extremely challenging. But thanks to a well-managed irrigation system and low-input methodology of rice cultivation known as the System of Rice Intensification, it is possible to cultivate hundreds of hectares of land during the dry season.

In this edition of the newsletter, we take you to fields across West Africa to experience the inspiring stories of change resulting from our innovations. Enjoy the read and do not hesitate to share any comments with us.

Dr Abdou Tenkouano
Executive Director

HOW'S NIGER'S LIVESTOCK FARING IN MALI



Mrs Domboua and her Balami sheep, this breed of sheep specie was transferred from Niger thanks to the WAAPP

Livestock farmers in West Africa are increasingly turning to the red goat of 'Maradi' and the 'Balami,' two of Niger's revered sheep breed, scientifically proven to adapt better to the changing climate and genetically wealthier.

Under the WAAPP, one of the region's most successful agriculture programs, countries in West Africa have stepped up cooperation not only in research but also in the integration of innovative technologies. This has helped closed food and income gaps experienced by poor farmers in Mali and others in the agriculture industry across West Africa.

In 2016, the Institute of Rural Economy, Mali's principal agriculture research institute imported about 1000

'Balami' from Niger which they distributed to farmers in the regions of Koulikoro, Ségou, and Mopti.

The overarching objective was to strengthen the resilience of livestock farmers in Mali and improve the sheep and livestock value chain.

Millions of farmers in Mali keep small ruminants as a primary source of livelihoods. Sheep assets are considered income generating activities and could be vital to escape the poverty trap, according to the CGIAR research center on livestock.

In Bla, located about 400 kilometers East of the capital, Bamako, a group of 10 women received the new breed from Niger. After close to 18 months of rearing the 'Balami,' there are signs that the smallholder farmers are making progress in incomes and livelihood strengthening.

“I am essentially a stay-home mom. Rearing the Balami is my main economic activity. When I have a problem, I sell one or two and use the money to address the issue. They are better than the previous species I was rearing,” says Mrs. Domboua

Though Mali and Niger are neighboring countries and share similar environmental characteristics, moving livestock from one ecological zone to another can pose considerable challenges.

“The adaptation of this breed here was challenging. Not only are their demand for food higher, but we also have to make extra efforts to take care of them from the perspective of cleaning, and vaccination,” adds Mrs. Domboua.

However, for this 31-year-old mother of two, the new breed is still relatively better than the species she was rearing before.

“Balami grows bigger compared to other local species. The meat is tender, and people tend to like it better. Customers jump on it whenever I take it to the market.”

Livestock has significant cultural value and represents a considerable source of livelihood for millions of families in Mali and across West Africa. About five million people are livestock keepers in Mali, most of whom are women, according to the CGIAR.

For the women group in Bla, their ambition to expand activities is constraint by credit availability.

“We are now approaching the Tabaski, the Muslim largest feast. If we had enough capital, we would have expanded our business to meet the growing demand. This would also allow us to make more profit and further assist our families.”

The ten women rearing ‘Balami’ in Bla have created an association in which they contribute a modest amount of 500 FCFA (USD 1) each month. They save the money in the bank with the hope that when it becomes substantial, they could leverage it to apply for a loan to expand their livestock business.

Niger is the host of the West Africa center leading research on livestock. The Red Goat of Maradi, a product of the National Center of Specialization on Livestock has been exported to Mali, Senegal, Guinea, Cote d’Ivoire, and other West African countries. Experts argue that it fares better from the perspective of adapting to new environments, standing the changing climate and are more nutritive.

In many communities where it has been adapted, evidence point to their contribution to poverty reduction, food, and nutrition security of smallholder farmers.



Balami farming is a source of livelihood for many families in Mali and West Africa.



With incomes rising, living conditions are changing among Balami farmers

THE MAN CHAMPIONING WASSACHIÈ, **MALI'S «FAVORED» CHICKEN SPECIE**



“Wassachiè” chicken is disease resistant, more nutritious and more profitable than other poultry breeds.

At a moment when lack of funding and technical skills are impeding the growth of poultry farming in Mali and most of West Africa, retired commissioner of police Yaya Sangare has raised ample capital, infrastructure, labor, and other inputs to set up a poultry farm that today supplies the local market in Bamako.

Located on the outskirts of Mali’s capital, Bamako, Yaya’s farm harbors about 4000 chickens, most of which are Wassachiè, a local strain relished by producers and consumers. ‘Wassachiè’ means ‘chicken of satisfaction’ in the Bambara language spoken in most of Mali.

Reducing poverty, and improving food and nutrition security remain major challenges in many West and Central African countries where an estimated 40% of children under five are affected by stunting, 12% suffer from acute malnutrition, and 75% are affected by anemia.

According to the United Nations, Food and Agriculture Organization increased consumption of eggs, and poultry meat brings substantial benefits to humans. But the consumption of poultry products is still a luxury in most parts of Sub Sahara Africa, while there is a high need for animal protein.

Why Wassachiè?

Part of the mandate of the West Africa Agricultural Productivity Program (WAAPP) created in 2008 was to

propose innovative solutions to increase agricultural productivity to further cement the food and nutrition security of people in the participating countries.

In Mali, as part of its work to generate and disseminate innovative technologies to improve the livelihoods of communities, WAAPP determined after extensive research that the exceptional genetic properties and improved characteristics of Wassachiè made it a unique breed with the potential to boost the poultry industry while contributing to the nutrition security of Malians.

Compared to other types of chicken, experts argue that Wassachiè is more resistant to diseases, nutritive, taste better, and harvests more eggs. The adult female lays up between 160 to 170 eggs per year compared to 60 to 80 eggs for local breeds.

Fending off competition from the ‘Cheap’ Broiler Chicken

The advantages notwithstanding, Wassachiè’s adoption has not reached the desired levels where ordinary Malians can afford it and further improve their nutrition security. This is due in part to the relatively high cost of Wassachiè, says the president of an association of Wassachiè producers in Bamako.

While many agree that it is comparatively better in terms of nutritive value and adaptation to the local environment, uptake has not reached the coveted levels.

“Malians are used to broiler chicken. It cost between 1700 to 2000 FCAF (USD 4). But Wassachiè cost averagely 3500 to 3700 FCAF (USD 7).” says Yaya.

Incentivising Wassachiè producers may be the best possible alternative to ensure they remain competitive in a market so far dominated by boiler chicken producers and consumers.

“Despite the cost, we still see Wassachiè as the future of the poultry industry in Mali in a sense it offers a tremendous opportunity to make available highly-nutritive chicken for our population,” according to WAAPP Mali.

“We hope the state could provide us subventions,” says Moussa Maguiraga, President of the Wassachiè Chicken Producers Cooperative of Bamako.

“If the current high demand for Wassachiè tells us anything, it is that consumers value taste over price. Most of the order coming from hotels and restaurants in and around Bamako demand that Yaya supplies them exclusively Wassachiè.

“When the Loft Restaurant in Bamako, for example, places an order for chicken, they insist that it should be Wassachiè and nothing else,” says Mr. Yaya.

“When I inform them that I do not have enough, they insist that I obtain it from other producers,”

Could the Innovation Platform Unlock the Upscaling Challenge?

Recognizing the need for further dissemination to ensure the massive uptake of Wassachiè production, WAAPP Mali is leveraging the potential of innovation platforms to facilitate the uptake of production in major regions such as Koulikoro, Sikasso, and Ségou.

“Innovation platforms brings together actors of a particular value chain. In our case, we are bringing together actors in corn production from which chicken feed is produced as well as women groups since most of those involved in rearing Wassachiè are women,” says Mr. M'pie Bengaly, Head of the WAAPP Innovation Platforms.

Could the Innovation Platforms Solve the Credit and Involvement of Youths and Women?

In Burkina Faso, innovation platforms offered an engagement and discussion opportunity between producers of cowpea, women, and credit unions. Through these platforms, credit unions learned more about the potential of cowpea and the opportunity to invest in it. With this clarity, they could easily loan money to women groups.

In Mali, the innovation platforms may be opportunities for actors to further engage and grow the sector to the expected levels.

“In Kolokani in the Koulikoro region of Mali, groundnut and sorghum seed producers came together with credit union and bankers on one of our innovation platforms. Seeing the seriousness and engagement of the producers, they



were linked up with banks and credit unions. If bankers are confident and sense the credibility of the actors, you start to see solutions to the credit and loan challenge.”

Not Much is Needed to Get Started

Retired Yaya Sangare might be close to 1 billion FCFA (USD 2 million) investment today. But he argues that he started off just with a few houses on a relatively small piece of land.

While he acknowledges that growing the business requires considerable funding, land, infrastructure and other inputs, those desiring to start-up should not be discouraged.

Based on the success he has achieved, others come to him for counseling.

“Most of the employers who are women and young people have asked that I pay them in kind. So at the end of the year, they take chicken equivalent to their salaries for the whole year. This allows them to start up their poultry farms,” says Yaya.

“What I have also told others is that you do not necessarily need so much infrastructure and money to get started. With about 200 chicks, land, and the right mind frame, you can get started.”

OFF-SEASON RICE **FENDS OFF MALIAN FARMERS FROM CLIMATE STRESS**

Fifty-five-years old Boureima Sanogo has been cultivating rice since he was 15. With traditional cultivation methods on a hectare of land in the rainy season, the most yield he could get was four tons.

But since the introduction of a new cultivation method known as the System of Rice Intensification (SRI), an improved water management system, and drought-tolerant seed varieties, not only does he cultivate twice a year, but his yield also has doubled. Sanogo now produces about 14 tons of rice every year.

This dad of 14 kids and two wives owns about two hectares of land in the rice fields located in San, about 450 kilometers East of Mali's capital, Bamako. Before SRI, his maximum yearly income barely went above 500,000 FCFA (USD 1000).

But when you include off-season cultivation, he now makes close 2.5 million (USD 5000) from his 14 tons. One ton of rice now sells in Mali at about 175,000 FCFA (USD 350).

For a country where most people, particularly in rural households, live on about USD 2 per day, this is considerably above the country's median income.

When we met him in the rice plains in San, Sanogo looked relaxed and happy at this year's off-season production.

"Next week, we shall begin harvesting. This will mark the end of the off-season. After that, we shall begin working on the cultivating for the regular season," said Boureima Sanogo.

Experts say off-season cultivation starts from December through May while the regular season begins in June and ends in October. Mali experiences some rainfall during the later period.

SRI Turns Drought to Irrigated Rice fields

Traveling through vast swaths of land in Mali in May can be particularly challenging because of the excruciating heat and high temperatures. With unpredictable rainfall, drought, and fluctuating weather patterns due in part to the changing climate, experts say, practicing agriculture can be extremely challenging. With degrading soils and inadequate farm inputs, the situation becomes even more desperate for small-scale farmers in particular.

But thanks to an agro-ecological, climate-smart and low-input methodology known as SRI, about 400 hectares of irrigated rice fields were cultivated between December 2017 and May 2018 in San, Mali,

"Climate change is a reality. But here in San, our rice fields are supplied by a water irrigation system. This is what makes off-season rice cultivation possible," says Sanogo.

About 5000 farmers have constituted themselves into an association in San. They are called The Rice Farmers Association of the developed plains of the western San



With SRI, Mr. Boureima Sanogo now grows rice twice a year. This has doubled his yield and income.

(APPASO). Thanks to their collective efforts, a channel irrigation system is allowing farmers access to water in their fields, helping them grow rice throughout the year and managing better worsening drought associated with climate change in Mali.

"Without this system, it will be impossible to stand the drought. Off-season rice cultivation is also impossible without a well-managed irrigation system," says Ali Sanogo, Technical adviser of APPASO.

"There are many advantages of SRI. Compared to our previous cultivation methods, fewer seeds are needed under SRI. Yields are higher under the SRI, and we use less water even in the off-season," says another practitioner of SRI in San, Assie Togola.



Scaling up SRI can help achieve rice self-sufficiency in West Africa

Scaling up SRI to Achieve Rice Self-Sufficiency in Mali

Experts have argued that if SRI is to make a real contribution to rice self-sufficiency in West Africa, many more farmers must adopt it.

“How many farmers must be reached before we reach the “tipping point” where SRI becomes the standard for rice cultivation in West Africa? A possible target for the follow-on project could be a farmer adoption rate of 33%, reaching 1.5 million rice farmers and 2.43 million hectares,” wrote Dr. Erika Styger and Dr. Gaoussou Traoré, authors of a recent publication on SRI in 13 West African countries,

“If 100% of rice farmers in West Africa had used SRI in 2017, rice self-sufficiency would already have been achieved with a 5% surplus. Replacing rice imports with rice grown in the region would have saved 4.16 billion USD in foreign exchange for 2017 alone,” they added.

Some Recommendations to Scale up SRI in West Africa

- Expand national and regional coordination
- Let farmers and farmer organizations take the lead
- Refine and assure quality of technical training
- Emphasize adaptation and innovation
- Reinforce and improved the SRI monitoring systems
- Expand the communication platform.



SRI practice makes it possible to use less water and fewer inputs.

THE «NEW SCIENTISTS» RE-ENERGIZING LIVESTOCK RESEARCH IN NIGER



New researchers trained through WAAPP funding are helping to advance agricultural research in their countries.

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."

AS NIGER SCALES UP E-VOUCHERS, **MORE FARMERS HAVE ACCESS TO AGRI-INPUTS**



Thousands of poor households are enlisted by the E-Voucher agricultural electronic distribution platform by WAAPP Niger



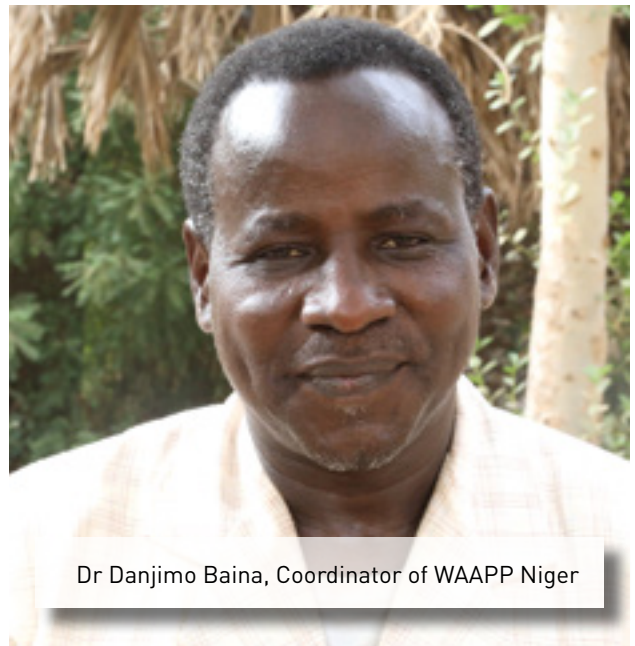
Niger has scaled up the electronic vouchers to deliver critical agri-inputs to farmers in remote corners of the country.

Between May 29 to June 19, 2018, about 10000 people from the ten communes received certified millet and cowpea seeds thanks to the electronic system put in place by the West Africa Agriculture Productivity Program (WAAPP), Niger.

Agricultural inputs were already distributed in at least 27 delivery points in the different communes, according to the WAAPP Niger Country Coordinator.

A pilot phase of distribution of agri-inputs and red goats was conducted in September 2017, in four communes of three regions of Niger (Dosso, Tillabéri, and Zinder).

“This test phase was a success because it demonstrated the feasibility of E-voucher in Niger,” said the WAAPP Niger National Coordinator, Dr. Dan-Jimo BAÏNA.



Dr Danjimo Baina, Coordinator of WAAPP Niger



The red goat of Maradi is now exported to most countries in West Africa

CHAD & CORAF AGREE TO PROMOTE CLIMATE-SMART TECHNOLOGIES



An agreement between Chad and CORAF will strengthen the resilience of communities affected by climate change

An agreement signed today, Tuesday, June 19, 2018, between the Government of Chad and CORAF, is expected to speed up the uptake of improved technologies and particularly climate-smart innovations.

Chad is currently experiencing erratic climatic conditions and land degradation. The agreement signed between both parties will facilitate the deployment of climate-sensitive technologies in priority commodities in targeted communities in Chad.

The Government of Chad recently received funding from the World Bank Group to implement the Climate Resilience Agriculture and Productivity Enhancement Project known in French as ProPAD.

At the heart of the program is the promotion of improved technologies to build the resilience of communities affected by climate change, increase agricultural productivity, and strengthening of the production systems of targeted populations.

ProPAD seeks to use the approach of the West Africa Agriculture Productivity Program (WAAPP) to speed up the delivery of technologies that can enhance agricultural productivity.

More than two hundred technologies were released during the past ten years under the WAAPP. These technologies were adopted by almost 4,5 million producers and processors on about 4.8 million hectares.

Experts argue the food and nutrition security of the population of West and Central Africa depend on accelerating the uptake of these technologies.

“The agreement we are signing in N’djamen today not only opens up access to the use of the WAAPP-generated technologies to improve the resilience of communities in Chad but it is also a testament to the founding spirit and principle of CORAF to enhance regional integration,” says Dr. Abdou Tenkouano, Executive Director CORAF.

Food insecurity is a big concern that is likely to be exacerbated by climate change, according to the World

Bank. “It is estimated that one out of 10 Chadians, or 1.4 million people, are chronically food-insecure, meaning they are unable to meet their basic food requirements even during “good” years of crop harvest,” says the World Bank.

As part of its research on climate-smart varieties, CORAF’s Regional Center of Excellence based in Senegal developed groundnut and cowpea variety options that are today helping farmers adapt to effects of climate change. The agreement seeks too to facilitate the uptake of similar solutions in Chad or leverage the centers to customize solutions adaptable to the specific challenges affecting Chad.

Many of CORAF’s centers of specialization tackle key agriculture products that are relevant for the food and nutrition security of Chad. This includes, for example, the research center on livestock in Niger, the maize research center in Benin, the dry cereals research center in Senegal, the fruits and vegetable research center in Burkina Faso, the root and tuber research center in Ghana, and the rice research center in Mali.

CORAF operates in 23 countries in West and Central Africa. During the past ten years, mostly West African countries participated in the WAAPP. Its success and considerable development impact in the participating countries have inspired Central African nations to seek to join the intervention. In addition to Chad, Cameroon will also be preparing to participate in the program.

Overall, the WAAPP benefitted about 9 million people directly and 49 million people indirectly. The promotion and adoption of the technologies contributed significantly to closing the food and income gaps in the participating countries.

Chad and CORAF have a long history of collaboration beyond the exchange of technologies and innovations.

As part of our work under the West Africa Seed Program funded by USAID, CORAF contributed in putting in place a seed regulation policy in Chad to facilitate the access to quality seeds by those in need.

CASHEW CREATES EMPLOYMENT



Cashew production is growing in West Africa, employing thousands of people

The West African Women's Association (AFAO/WAWA) started an initiative to boost cashew processing in Senegal. Rather than selling raw cashews to traders, they decided to expand post-harvest opportunities close to home by training and equipping hundreds of women to process and market cashew apples and nuts. Food Tank spoke to AFAO/WAWA Regional President Khady Fall Tall about this initiative.

AFAO/WAWA seeks “to promote the economic status of women in West Africa.” “Poverty is now still the big problem we cannot solve,” Fall Tall says. “When you are poor, very poor, you cannot think about anything. You cannot think about your own situation, because you are stressing by your situation.”

Fall Tall tells Food Tank that the Capacity Development of Cashew Value Chain Actors in West Africa project arose from her observation that the cashew sector could expand employment for women in West Africa. Cashew, she says, is “very successful now in the world.” But the raw cashews grown in the region were largely being sent abroad: “All the processing and transformation is done by India,” Fall Tall says. She approached the West and Central African Council for Agricultural Research and Development (CORAF) with a message: “Research without development is nothing. Please give us the opportunity to implement this project.” CORAF agreed.

The project operated in the areas of Gorom, Thiénaba, and Ziguinchor, where women worked together to carry out processing activities like sorting, steaming, drying, and husking the cashew nuts; make a variety of products like jams and flour from cashew apples; and cooperatively to market their products. “We are 674 members, and our ambition is to do more kilos of cashews,” says Mme Louty, a Thiénaba beneficiary and president of a group called Fass Diom, in a video about the project.

AFAO/WAWA's work also extends beyond cashew processing, and they have also focused on other products, including cereals, Fall Tall explains. Targeting the most vulnerable community members, AFAO/WAWA couples training with access to shared equipment. Fall Tall explains this multi-component approach: “After skill, we give equipment, because when we finish training, if you do not have machinery or something to work with, you cannot work.”

Fall Tall reports that after participating in the cashew project, participants are working, earning money, and cooperatively selling their products at trade expositions. Though the project has ended, AFAO/WAWA is looking to begin a new phase of this work in partnership with The World Bank. To improve women's economic situation, Fall Tall says, more investment for women is needed.

The original article is published by Food Tank.

BUDDING SCIENTIST WHOSE **ONLY 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.



Out of about 1000 young researchers who have benefited from WAAPP scholarships, 30% are women.

MEET THE «**NEXT GENERATION**» OF WEST AFRICAN AGRIC SCIENTISTS



West Africa will build on the next generation of agricultural researchers

Overall, about 1000 young scientists including about 30 percent women received scholarships to pursue master degrees and Ph.Ds. in priority areas. The Faculty of Agriculture and Forestry of the University of Ibadan in Nigeria hosted students from Mali, Guinea, Niger, Benin, etc. as part of efforts to enhance regional cooperation through agricultural research. Some went as far as Europe to obtain their post-graduate certificates.

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.

But What are they Doing?

With studies over and certificates in the bag, we wanted to investigate the fate of the beneficiaries of this program.

What have they become? What are they doing? Are they contributing to research and development?

Successfully tackling the challenges facing agriculture in the region requires a set of the out-of-the-box thinking scientist who can develop ‘cool’ technologies such as sensors, self-driving tractors, and other digital tools to help transform agriculture.

With government no longer able to absolve every young person looking for a job, do these young talents have the ability to start-up in agribusiness?

In short, did these investments generate a new breed of biologists, chemists, engineers, and scientists who can develop exciting new technology, better seeds and find new ways to protect crops from weeds, pests, and diseases?

CORAF communications team went through some participating countries to meet with these new generation scientists and here is what we know about them.

Agriculture research and development (R&D) in West Africa was in a bleak state in 2008.

Several analyses at the time concluded that majority of PhD-qualified researchers were due to retire by 2025 creating a void in the quest for innovative solutions to tackle pressing and emerging challenges facing agricultural development.

Against the growing threat of climate change, weather fluctuations, soil degradation, population growth, gender disparities, youth unemployment, etc. West African countries recommitted to invest in the training a new generation of agriculture scientists to take on these challenges.

With a loan from the World Bank and the support of CORAF, about 13 West African countries involved in the West Africa Agriculture Productivity Program funded post-graduate studies for young researchers.

The case of Mali

Overall, WAAPP Mali sponsored 120 students. 70 for Master degrees and 50 for Ph.Ds. Fields of study ranged from pisciculture, agricultural extension, agricultural hydraulics, agricultural economics, development communications, and monitoring and evaluation. anthropology, environment, food technology, soil science pastoralism (legislation), biotechnology, genetics of Rice, microbiology, parasitology, toxicology, natural resources management, etc.

Except for a few, most of the sponsored candidates have completed their studies and returned home in keeping to engagements signed with the government of Mali.

As we found out, except for a few who have resumed work in their previous positions, or picked up jobs in local national and international organizations, most of the graduates do not have jobs yet. The following video captures the thoughts and experiences of these students.

NEW APP TO **FIGHT FALL ARMYWORM IN WEST AFRICA**

The United Nations' Food and Agriculture Organization and Pennsylvania State University joined forces to develop and launch an innovative, talking app – Nuru – to help African farmers recognize Fall Armyworm, a new and fast-spreading crop pest in sub-Saharan Africa, so that they can take immediate steps to destroy it and curb its spread.

Fall Armyworm first appeared in Africa in 2016, in West Africa, and then rapidly spread across all countries in sub-Saharan Africa in 2017, infecting millions of hectares of maize, and threatening the food security of more than 300 million people. Many African farmers might have heard about Fall Armyworm but are seeing it for the first time, and are often unable to recognize it or unsure of what they are facing. With the new application, they can hold the phone next to an infested plant, and Nuru can immediately confirm if Fall Armyworm has caused the damage.

Nuru is an app that uses cutting-edge technologies involving machine learning and artificial intelligence. It runs inside a standard Android phone and can work also offline. “The new tool will help farmers recognize their new enemy and take immediate measures to stop it. It complements FAO’s recently launched **Fall Armyworm Monitoring and Early Warning System (FAMEWS)** mobile app, which builds knowledge on how and where the pest spreads, and what makes it less damaging,” said Keith Cressman, FAO Senior Agricultural Officer who leads FAO’s digital response to Fall Armyworm and other pests.

“An important feature on the new tool is that it can work offline so farmers can use it whenever they want it. Nuru is like an extension officer who is always there for the farmers, in their fields,” said David Hughes, a professor of Entomology and Biology at Pennsylvania State University, which led the development of the app with FAO.

New features to come

FAO and Pennsylvania State University are working on new features to make Nuru an even more powerful ally against Fall Armyworm in the next months. Soon, in addition to English, Nuru will be able to speak to farmers in their own language, walking them through the process of checking their crops for Fall Armyworm, reporting back on infestation levels, and giving them advice on how to fight the pest. Nuru will speak Swahili, French and Twi and will be learning new languages all the time.

Nuru is currently inside the PlantVillage app, which is a free app built at Pennsylvania State University with FAO, CGIAR and other public institutions, and will soon be linked into FAO’s FAMEWS app. Once the farmers get online, all the data will flow from FAMEWS, where the data is validated by national Fall Armyworm focal points, into a global web-based platform. The platform analyses data from across Africa to give a real-time situation overview with maps of Fall Armyworm infestations and the measures that were most effective in reducing its impact.

“FAMEWS and Nuru are integral parts of FAO’s sustainable management of Fall Armyworm programme. They feed information to farmers and extension workers so that they



The Fall armyworm is reported to be wrecking havoc to corn producers in West Africa.

can take action against the pest, whilst guiding decision-makers’ response and building everyone’s understanding of the pest and its threat to food insecurity,” said Allan Hruska, FAO’s Principal Technical Coordinator on the Fall Armyworm response. “Digital tools are increasingly becoming integral components of the FAO’s systems of identification, monitoring, training, and decision-making of globally-important crop pests and diseases,” added Hruska.

Managing Fall Armyworm

FAO and its partners have been at the forefront in tackling FAW, and continue to support prevention, early warning and effective response. FAO took immediate steps as soon as FAW was detected in Africa, including: bringing together experts to share knowledge and experiences on sustainable FAW management; developing tools to build better understanding and means to tackle FAW; supporting countries to mitigate pest damage, develop action plans, and train extension workers and farmers.

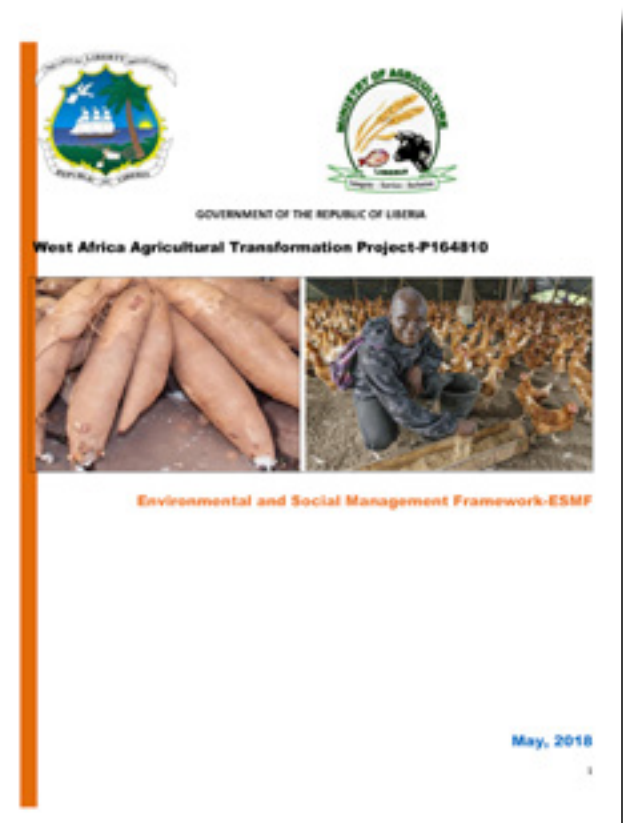
In October 2017, FAO launched a five-year, \$87 million programme to help farmers and countries effectively respond to and sustainably manage Fall Armyworm in Africa. To date, FAO requires \$75 million to carry out the programme at large scale. FAO’s Fall Armyworm response is supported by Belgium, Ireland, Japan and the United States of America.

The original story was published on the website of the FAO.

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