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Instituto de Investigação Agrária de Moçambique

In Zambia, Malawi and Mozambique
YIELDS AND INCOME
are FUELING farmers' decision to
become RICE SEED growers



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APPSA has supported farmers to reach high yields on seed production in Zambia, Malawi and Mozambique

Seed quality can have a major impact on potential crop yield. Previous research found that about 60% of the crop yield in small cereals such as rice relies on the varietal genetic potential. In Zambia, Malawi, Mozambique and other developing countries, rice is grown as a food and cash crop by smallholder farmers whose productivity, production and marketing potential are yet to be reached.

These limiting factors and others are also determined by good quality or certified seed availability. The formal seed sector has shown little interest in seed multiplication for self-pollinating crops. The farmers tend to save and recycle seeds, which overtime affects the productivity due to degeneration.



Mr. Mahumane is a rice seed grower at Chokwè district who also found selling nurseries profitable.

Fernando Mahumane and many other farmers from Mozambique, Malawi and Zambia decided to change the scenario by becoming seed growers. This all gained wings when back in 2015 rice farmers have been challenged by an Agricultural Productivity Program for Southern Africa (APPSA) project to grow improved rice varieties seed to sell to both their peers and to seed companies. "We fetch better price when selling improved rice seed than just grain", shared Mr. Mahumane. Mahumane is originally from Mozambique in Xai-Xai and moved to Chókwe in 1979 to work for the Limpopo Agro-Industrial Complex widely known as CAIL. He became a farmer with the resizing of the CAIL as a follow up of the economic rehabilitation process in the 1980s. Today, Mahumane grows improved rice seed in 32 hectares. "I own other two hectares in which I grow vegetables and I often use vegetables for crop rotation given that in irrigated crops it is instrumental for keeping the field clean from residues of previous rice varieties", added Mahumane. Plant nursery is another market popping up from the seed production horizon given that it offers the germination assurance. Besides selling seed, Fernando Mahumane decided to embark in plant nursery provision among peer farmers. "Despite of many of customers reporting over 90% of germination power of my seed, in order to build trust among potential customers I decided to produce and sell plant nursery as well", said Mahumane. "This business was so successful in a way that I had farmers requesting more plant nurseries while I had no stock anymore", he added



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In the **“warm heart of Africa”** or Malawi, Festa Mushani, Jo Mbiri Ntambo and Meque Kampira from Bua, Domasi and Bwanje irrigation schemes, respectively, although in different geographical regions of the country they all share the same goal of becoming well-established seed growers. “I’m very proud of being a farmer because most of my accomplishments derive from farming, for example I was even the first in my village to get electricity into my house”, shared Festa Mushani, a 43 years old farmer at Bua Irrigation Scheme in Nkhota Bota. Festa also runs a business of fried chips in her village which was largely boosted by the capital she earned selling Kilombero rice seed variety harvested last season. “With APPSA, I learnt that with very small amount of seed we can yield a lot more than what I used to get when producing commercial rice and the good thing is that given the fact that the price of seed is way higher than rice for consumption we manage to get more money at once which allows us to accomplish substantial things”, said Mrs. Mushani.



Mrs. Festa Mushani a farmer who also started a business of fried chips with the money she earned out of growing and selling seed.

Confidence in a promising future is noticeable among those farmers trained by APPSA who now have decided to become seed growers. For Jo Mbiri and Meque Kampira, there is no reason for turning back because the advantages of seed production are as clear as clean water. "My elder brother, elder sister and younger sister are all in South Africa but when I compare what they have done so far with my accomplishments I think I'm better off than them", Mr. Mbiri said. "I was able to build my house and now I'm supporting my relatives whereas unfortunately they are not able to do that right now", he added. Meque Kampira also said that farming has changed his life in many ways. "I was able to afford a training to become a carpenter with the money that I earned out of farming and now I have another source of income thus from now on I'll also focus on seed production because it is way more profitable", confirmed Kampira.



Jo Mbiri, a farmer from Domasi Irrigation Scheme who finds farming life way-better than when people seek for improved conditions in SA



Rice seed solar dry at Bwanje Irrigation Scheme, Malawi.

APPSA Seed project in Malawi started in May 2017 and worked with 159 farmers in total so far and 38 were involved in demonstrations. Overall 12 irrigation schemes have been covered and 5 sites under upland conditions.

The main purpose of the project is to increase the availability of certified seed among smallholder farmers by improving the delivery system starting with breeder and basic seeds. “Last season we were able to achieve or even surpass our targets in which we harvested 5.4 tons of breeder seed, 19 tons of basic seed and 47 tons of certified seed”, confirmed Wiseman Kanyika, co-PI of the APPSA Seed project.

In Mozambique particularly, farmers have been exposed to seed production topics through USEBA. USEBA or the Basic Seed Unit of the Agricultural Research Institute of Mozambique (IIAM) has the mandate to ensure pre-basic and basic seed availability for seed growers across the country. USEBA receives varieties breeder or pre-basic seed from national research programs or from international rice research entities. One or two season/year(s) multiplication is done by USEBA or under its direct supervision to increase the quantities for making it available to seed companies, associations and other growers for further multiplication. In Mozambique, through APPSA, over three hundred farmers from Maputo, Gaza and Zambézia have been trained by USEBA on how to grow improved rice seed and basic marketing techniques for business purposes. “It is so rewarding to see farmers turning from only grain producers to become seed growers”, said Paciência Banze. “Seed is the basic input in agriculture”, she added.



Paciência Banze is assisting a farmer on seed production at Chókwe.



Paciência running a field day with rice growing farmers from Chókwe.

Paciência Baze is an IIAM Agronomist specialized in seed technology, working on quality seed and basic seed production for the last 30 years. She worked previously at Seed Authority and as a seed lecturer at Eduardo Mondlane University and taught most of Mozambican top researchers in agriculture sector on seed topics. Under APPSA, Paciência was fundamentally involved in improved seed production and dissemination. “We have been promoting Makassane and other varieties for the last two to three seasons in places where farmers grow Nene, Chupa and ITA 312 varieties, and today we experience high demand in which farmers are turning partially or completely to the varieties we are promoting”, shared Paciência Banze.



The APPSA project on seed production and dissemination managed by Paciência Banze in Mozambique and by Wiseman Kanyika in Malawi, is led by Dr. Nathan Phiri, Chief Seed Officer at Seed Control and Certification Institute, in Zambia. This project has been designed to improve seed availability of good quality through empowering smallholder farmers with knowledge and skills in seed production. Some of these farmers have been linked to seed companies and/or millers under contract growing. “In Zambia, Malawi and Mozambique for instance, seed companies are already buying rice seed from APPSA beneficiaries because they know they can get clean and high quality seed from these farmers given that we’ve done our best to get them well trained in seed production”, confirmed Wiseman Kanyika, a rice Agronomist with the Department of the Agricultural Research in Malawi.

APPSA is using innovative approaches towards delivering technologies and information to farmers growing rice and other APPSA main commodities (legumes and maize) through improving and scaling up, among other things, access by farmers to relevant information and technologies for sustainable rice production in the entire Southern African region. This regional agricultural program is magnifying the benefits of research by providing mechanisms to increase technology spillovers.



Mr. Kanyika has influenced many farmers through APPSA to adopt SRI

Wiseman Kanyika who used to be head of Baka Research Station in Karonga has also been a Chief Agriculture Research Officer and Rice Commodity Team leader within the Department of Agricultural Research Services in Malawi. Kanyika was involved in improving and delivering best agronomic practices across the country since 1986. In September 2018, Kanyika who can be considered the father of Systems of Rice Intensification (SRI) in Malawi has retired as a public employee leaving behind a great legacy among smallholder farmers. “I’ve released over 19 technologies in which SRI is one of them and farmers seem

to massively adopt it” informed Wiseman Kanyika. “Although SRI has been released under a different research program, with APPSA this technology was improved by adding manure in the equation which wasn’t there before and today farmers’ uptake is amazing across the country, especially among those who have been working with us in seed production”, he added.



Mr. Cuambe, owner of the Matuel Comercial in Quelimane has been selling certified seeds for the past 18 years

Seed companies such as Kamano Seed in Zambia, Museco in Malawi and Matuel Comercial in Mozambique, although small they have been filling the gap of lack of self-pollinating seed crops due to reluctance of big companies in investing in such cultivars. “Strategically we decided to engage in this venture and work with APPSA farmers in northern and western Zambia where rice is heavily cultivated and now we are buying up to 30 metric tons per season in those regions”, said Mr. Stephen Tembo a Seed Production Consultant at Kamano Seed. Moved by the same aspiration, Dr. Ibrahim Benesi, Chief Executive Officer at Museco has been facilitating the improvement of market accessibility among smallholder rice seed growers. “We have implemented a business innovation in which we map out all the seed available across the country with farmers in order to

link them back to the market in such way that in case there is a demand of rice somewhere we know upfront where to go and get it to provide our customers in a timely fashion”, informed Dr. Benesi. In the so called “Indian Pearl” or Mozambique, Ilídio Matuel Cuambe, owner of the Matuel Comercial, has been selling certified or guaranteed seeds for the last 18 years from his main store in Quelimane and through about 100 retailers across the Zambezia Province. “Although I value more flavored varieties, there is a great research work undertaken by IIAM and some outstanding rice varieties have been delivered in which most of them are increasingly having high demand from the market”, explained Cuambe.

Strengthening

the seed production capacity has been one of the main focuses of the APPSA Seed project both in Zambia, Malawi and Mozambique. More than 1341 farmers have been trained in seed production or multiplication in Zambia and Mozambique under the project. “In Zambia for instance, 501 farmers have benefitted from our trainings and two seed inspectors have been



Dr. Phiri is the PI of the APPSA Seed project and works at SCCI for over 17 years.

strengthened their capacity in seed testing, quality and certification to work in the major rice production areas in country”, said Dr. Nathan Phiri, PI of the project and Chief Seed Officer at Seed Control and Certification Institute (SCCI). Dr. Phiri is a plant breeder working in seed control for over 17 years and for him seed certification costs was hindering farmers to become seed growers because they had to request an inspector from SCCI headquarters to visit their fields and certify what they have produced which somehow had impact in the seed certification fees. “Today I’m happy to say that a lot of farmers are becoming seed growers because with APPSA we were able to lower the seed certification fees by training and assigning a local seed inspector with a motorbike to go around rice seed farms for inspection and certification”, he added.

Seed Control and Certification Institute is the designated national seed certification authority and forms the epicenter of seed certification services in Zambia. For quality control, the Zambian seed legislation provides rules and standards for sale of 83 agricultural and horticultural crops, which either must be certified or have its quality declared. Brenda Muyendekwa joined SCCI back in 1987 and has been assisting farmers in seed production and certification. Muyendekwa was one of the APPSA Rice Seed project inspectors based in Mongu district in Zambia. "I have been involved in seed testing, seed inspection, monitoring national seed variety trials and also conducting some seed trainings with our local farmers", said Mrs. Muyendekwa. "For example, under APPSA in seed multiplication we were able to train farmers in seed production and technology and seed entrepreneurship and today most of them are capable of finding market for their produce", she added.



Seed quality control instrumental for improving productivity.

APPSA is a World Bank funded initiative which seeks to improve technology generation and dissemination within and among participating southern African countries. It aims to invest in agricultural technology generation and dissemination by supporting and strengthening regional centers of research leadership that will work on commodities and commodity systems of regional importance. The development objective of APPSA is to increase the availability of improved agricultural technologies in participating countries in the SADC region.



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