

'This time for Africa' is a powerful slogan. Africa has all of the natural resources that should have made it big for cotton. The continent is waiting for its time to come.

Three volumes of the special issues of the ICAC RECORDER have been dedicated to discussions on 'cotton high yields' in Africa. In the first two volumes, researchers agree that the challenges in Africa are tough, but all researchers have been unanimous that small steps can bring in a big change. Lessons from across the globe point out that cotton in Africa can win if the crop season, plant architecture and planting geometry are condensed to make the crop more efficient in using water, light and nutrients. I attempted to drive home these points in my article 'A change in plant architecture can break yield barriers in Africa' in the previous issue of the ICAC RECORDER, which has insightful articles by cotton researchers from Asia and Africa who described a wide spectrum of ideas to enhance yields and improve the cotton economy.

This sequel in the special series on 'cotton-high yields — this time for Africa' has four articles that continue to explore options for high yields and policies that can effect positive changes in the African cotton sector. Dr. Sabesh and Dr. Prakash are on a roll, at their insightful best. They examine the cotton-sectoral changes in Africa spanning 60 years since 1965. They look at Africa through a holistic prism while reviewing the technical and socio-economic dimensions to conclude that farmers deserve better prices and technologies for high yields while drawing attention towards the need for new investment enabling policies. Dr. Dong describes new 'light and simplified cultivation (LSC)' Chinese techniques that are applicable for the small-scale cotton farms in Africa. The LSC methods enable high yields of 1500 to 2000 kg per hectare at low production costs in China. Even at half their efficiency, the LSC techniques have the potential to double cotton yields in Africa. Dr. Blaise shares his expertise on conservation agriculture. He describes the technologies in a lucid manner to connect them with the farming systems in Africa. My article on 'the relevance of biotech cotton in Africa' deals with a brief description of the spectrum of biotech products and the current status and prospects for Africa.

Those who have been working for the betterment of cotton sector in Africa are familiar with the small-scale resource poor farmers, many of whom do not have access to fertilizers, pesticides, improved seeds and even the simplest of technologies due to poor purchasing power or weak logistics. Several researchers argue that without access to any of the technological inputs, yields in Africa cannot increase. In this context, it would be interesting to draw a parallel between Africa and India. India also has small scale resource poor farmers, but they have access to all the modern agri-technologies and inputs. However, yields in rainfed regions of India are as low as in Africa. For example, the Indian state of Maharashtra has an area of 4.2 million hectares which is equivalent to the cotton acreage in the whole of Africa, but the average lint yields at 350 kg/ha with a production of 1.5 million tonnes are strikingly similar. Cotton in Maharashtra is rainfed, very much like Africa. Further, Maharashtra has access not only to all agricultural inputs but has been growing the dual-gene Bt-cotton hybrids (not open pollinated varieties) in almost 95-98% of the area in the state. Therefore, it would be pertinent to ponder if the introduction of Bt-cotton, especially in the form of hybrids or emphasis on increased application of fertilisers and pesticide, would be great solutions to increase yields in Africa.

Researchers who have been batting for hybrids for high yields in Africa, must know that though hybrid cotton looks lucrative with big bolls and a promise of better quality and high yields over a longer duration, there are issues that need to be considered before taking the plunge. Cotton hybrid seeds are expensive; farmers cannot plant farm saved seeds; a hybrid cotton crop needs higher levels of water and chemical inputs; the plants have low harvest index due to higher biomass; due to the longer duration, the crop experiences severe moisture and nutrient stress in the post-monsoon phase during the critical boll formation window which causes yields and quality to plummet. Further the cotton season extends to such an extent that a second crop is rarely possible. It is interesting that except India and a few African countries which are characterized with low yields, major industrialized nations have rejected the hybrid technology, but have been getting 3 to 4-fold higher yields using open pollinated varieties, compared to India which has >95% of its cotton area under hybrid Bt-cotton and 38% under irrigation.

The discussions on Africa will continue in the future issues of the ICAC RECORDER. The ICAC will continue its technical efforts to explore tangible solutions to the intractable challenges in Africa and looks forward to collaborating with interested agencies for breaking the yield barriers and for the betterment of cotton farming systems and the entire cotton sector in Africa.