The ICAC Recorder

Editorial

A *recent regional network meeting in Africa focussed on organic cotton. This issue of The ICAC RECORDER is dedicated to cover the proceedings of the meeting. At the meeting, a close friend asked me, why I chose to focus on the organic approach for Africa, when the yields are lowest in the world and it is common knowledge that application of synthetic fertilizers leads to high yields? Indeed, African cotton productivity is the lowest in the world and the lowest use of synthetic fertilizers is often cited as a reason for low yields. Is organic cotton an answer to the problem or will it worsen the crisis of low productivity? Interestingly, the subject of 'prospect for organic cotton in Africa' was greeted with great enthusiasm by researchers and administrators. I replied to my friend that in my considered opinion, organic approach is imperative for Africa. I must explain my reply and discuss the probable reasons for this enthusiasm in Africa, which I intend doing so in the latter part of this Editorial. Overall, kudos to the organizing committee in Mozambique, the African regional network meeting on organic cotton was a grand success.*

As mentioned earlier, it is generally believed that low productivity of African agriculture and cotton is because Africa's fertilizer usage is lowest in the world -that is grossly inadequate to replace the soil nutrients consumed every year by crops. The answer to the challenge of low yields, across the globe, is generally sought from synthetic chemical fertilizers, as an elegant and practical solution. Eventually, agriculture in almost all advanced countries has become completely dependent on synthetic chemical fertilizers for enhanced productivity. Should sub-Saharan Africa pursue the route of chemical intensive farming, or organic methods to address the woes of low cotton productivity? The tilt towards 'organic' emanates from the fact that synthetic chemical fertilizers are unaffordable and not easily available in Africa. For example, the cost of 50Kg bag of urea is less than US$ 4.0 in India, but more than US$50 in majority countries of Africa thus making it tough for Africa to compete in international markets. Fertilizer prices are known to have almost doubled in a year in many countries including Zimbabwe, Malawi, South Africa and Tanzania. This is not just unaffordable and unsustainable, but also unviable in the long term. With the recent Russia-Ukraine crisis, the fertilizer problem is expected to worsen. Russia is the world's top exporter of nitrogen fertilizers. It is also the second largest supplier of potassium and the third-largest exporter of phosphorus fertilizers. The International Fertilizer Association (IFA) says that the 'biggest drop in fertilizer usage next season will be in sub-Saharan Africa, with a decline of as much as 23%'. The pertinent question to ask against this backdrop is -are there any viable options to combat the fertilizer crisis? Interestingly, more and more researchers are now increasingly voicing their preference for regenerative agricultural practices over chemical intensive methods to improve soil fertility and soil health. For example, legume cover crops which are components of regenerative agriculture, are known to fix 50 to 200 kg nitrogen per hectare in a single season at a fraction of the cost of a bag of urea. Similarly, biopesticides are known to maintain insect pests below damaging thresholds while conserving beneficial insect biodiversity that sustains natural pest control all through the season, in contrast to most synthetic pesticides that strongly disrupt the ecosystems to cause cyclic resurgence of insect pests. Therefore, it is worth exploring such feasible natural organic solutions and many more similar practices as expeditiously as possible to circumvent the imbroglio of 'chemical-intensive-farming'. Organic farming embodies approaches that build soil health and strengthen biodiversity.

Mounting recent research evidence clearly shows that viable alternative options for soil fertility, sustainable soil health and conservation of biodiversity are available in regenerative agricultural practices that form the bedrock of organic farming. Sustainable agriculture primarily aims to improve carbon reserves in the soil; and as the World Food Prize winner, Prof Rattan Lal says, 'carbon is essential for the utilization of the nutrients in the soil, whether they are native or applied.' Prof. Lal elaborates further that 'the concentrations of organic carbon in the soil, should be approximately 2.0% in the top 8 to 12 inches. Maintaining this level of soil carbon is essential for water retention and for controlling soil erosion and leaching. It's also critical for nutrient cycling and improved soil structure'. African soils have far less than 1.0% carbon that leads to poor soil health. A healthy soil supports a healthy crop which is critical for a good harvest. Ironically, application of synthetic fertilizers may lead to better yields, but are known to disrupt soil health. Therefore, long term sustainable 'soil health' solutions offered by regenerative agriculture and organic farming not only look viable, but also appear to be more appropriate and apt for the bio-diversity rich African continent. Tanzania has been leading the way in Africa on organic cotton. There are good examples of happy organic farms and success stories of a healthy ecology and a sound environment. As Prof Rattan Lal who worked for several years in Africa says "Agriculture, if done properly, has to be a solution to environmental issues." It is becoming clearer over time that doing agriculture properly means improving soil carbon content, improving soil health and improving biodiversity; and all of these approaches have the potential to not only improve yields but also to combat and mitigate the ill effects of climate change.

This issue contains proceedings of the XV Meeting of the Southern and Eastern African Cotton Forum (SEACF) which was held from 29 June to 1 July 2022 in Maputo Province, Mozambique. The meeting was jointly conducted by the ICAC and the Mozambique Institute for Cotton and Oilseed (IAOM). Delegates discussed on 'Prospects for Organic Cotton in Africa'. The lectures have been summarized and presented here. Happy reading.

– Keshav Kranthi

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