

BETTER COTTON: AN APPROACH TO SUSTAINABLE AGRICULTURE

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Abstract. Cotton is the largest industrial sector in Pakistan. However, due to bad traditional practices and use of high amount pesticides, the whole industry lost about 10-15% of cotton. For reasons of socioeconomic and environmental harm, the Better Cotton Initiative launched "Better Cotton" in Pakistan. Better cotton production is a more environmentally friendly alternative to traditional cotton due to its efficient resource utilization and lower environmental externalities. CABI encourages farmers to implement better cotton production principles and criteria, use better cotton standard system and good agricultural practices and provide participatory training for small, medium and large-sized farmers and farm workers in their "learning groups" and medium-sized farmers' fields. The aim of this short communication article is to put together a concise review of Better Cotton production. In this short communication we briefly present the history, importance, aim, distribution and principles of Better Cotton Initiative in Pakistan.

Keywords: Better Cotton, Production, Sindh, Pakistan, Sustainable, Agriculture

1. Introduction

Agriculture is the primary contributor to national economies, particularly in developing countries, and cotton is an important cash crop. It is known as "white gold" in some countries because it earns foreign exchange (Khan *et al.* 2020). Because cotton cultivation uses a large amount of chemicals, such as fertilizers and pesticides, sustainability and environmental effect are major concerns. Seeds, irrigation water, fertilizers, pesticides and natural resources, as well as the environment, have been found to have a significant impact on cotton productivity (Anwar *et al.* 2009; Bakhsh 2017; Page & Ritchie 2009). Traditional agriculture is extensively reliant on external inputs such as irrigation water, fertilizers, and pesticides (Rasul and Thapa 2003). In Pakistan, cotton is grown in a similar manner. Traditional cotton is the term used throughout this article for cotton that is heavily reliant on external inputs such as fertilizers and pesticides as well as irrigation water. Pesticides are used in enormous quantities to protect crops in this production system (Zulfiqar and Thapa 2016). Alone cotton crop in Pakistan is sprayed with 70-80% of the pesticides (Iqbal *et al.* 2018). Pesticide residues have been found in both surface and ground drinking water in Punjab and Sindh's cotton belts as a result of this practice (Kaur *et al.* 2021). High dependence on chemicals has led to higher production costs, environmental degradation biodiversity loss and poverty in many countries as well as a decrease in soil fertility (Zulfiqar *et al.* 2019). Due to the fact that pesticides in Pakistan were being used at double the recommended amount, cotton growers suffered economic losses because there was no additional increase in productivity

(Hasnain 1999). Furthermore, pesticide use had a negative impact on farmers' and consumers' health (Ajayi and Akinnifesi 2007; Kouser and Qaim 2015).

For reasons of socioeconomic and environmental harm, the BCI launched "Better Cotton" in Pakistan in 2009. It is a more environmentally friendly alternative to traditional cotton due to its efficient resource utilization and lower environmental externalities (Zulfiqar and Thapa 2018). Also, in 2012, BC was accounted 3.6 percent of the total cotton use. As a result, pesticides have been eliminated by almost 140000 kg (Ho 2014). Punjab and Sindh are the two provinces in Pakistan where the majority of cotton is produced. After Brazil, Pakistan was the world's second-largest producer of Better Cotton, with a total of 906,000 tonnes production in 2018-19. 54 percent of Pakistan's 2018-19 output came from Better Cotton (BCI 2019). Scientific research results show that crop yield and profit can be maintained even if the input is reduced (Richter and Safi 1997). Despite using fewer inorganic inputs and less irrigation water, "better cotton" produced 11, 18 and 15 percent more than traditional cotton in China, India, and Pakistan, respectively. This is because insecticides, fertilizers, and irrigation water are used less (BCI 2013).

BCI is an international non-profit organization responsible for developing better global standards for cotton. In 2009, Pakistan's BCI introduced "better cotton" to reduce the socio-economic and environmental costs of traditional cotton production in Punjab province (BCI 2010). A number of organizations in Pakistan, including the Sangtani Women Rural Development Organization, Cotton Connect Pakistan, the World Wildlife Fund-Pakistan, CABI and the Lok Sanjh Foundation, worked with BCI to promote "better cotton" in accordance with the organization's principles and criteria (BCI 2013; Zulfiqar and Thapa 2016). The support provided by relevant non-governmental organizations to farmers includes the provision of extension services, training, field demonstrations, new technology information and license. The license of better cotton only be issued if the registered farmer is found to meet the standards set by BCI. Private companies are committed to promoting "better cotton", and their motivation is to increase the value of products by improving the quality of cotton and reducing production costs, so as to increase income. The aim of this short communication article is to put together a concise review of Better Cotton production. In this short communication we will briefly present the history, importance, aim, distribution and principles of better cotton.

2. Aim of Better Cotton

Better cotton is being introduced to reduce harmful agricultural inputs and achieve a sustainable cotton production system. The BCI gives cotton farmers across the world the chance to cultivate cotton in a more environment friendly way by implementing sustainable practices. Reduced fertilizer, pesticide and irrigation consumption enhances the social and economic status of cotton farmers. Farm practices that encourage good labour standards and ensure fibre quality

are also part of BCI. By improving the environment and increasing cotton producer's income on a sustainable basis, by adopting improved management techniques in cotton production, the Better Cotton Standard System (BCSS) encourages the agricultural community to produce more quantity as well as higher quality cotton, resulting in higher profits.

3. Principles of Better Cotton

According to BCSS guidelines, there are six major components to the system: production principles and criteria that guide production, capacity-building strategy and assurance programme that help increase capacity, and chain of custody framework that helps manage claims. An overview of BCI's primary production concepts is shown in Figure 1.

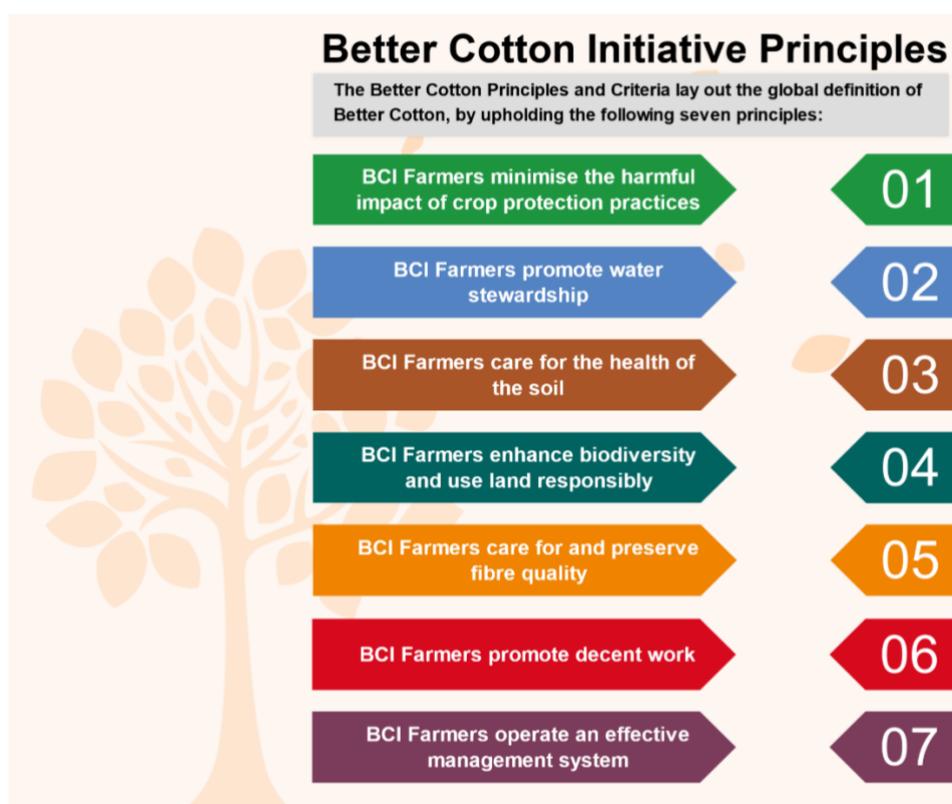


Figure 1. Better Cotton Standard System principles

4. Distribution of Better Cotton in Pakistan

Better cotton is being produced in 20 countries listed in Figure 2. In Pakistan, since 2014, CABI has been working in partnership with the BCI in Sindh and Punjab two provinces where the majority of cotton is produced. In Sindh, CABI is working in Tando Allahyar, Mirpurkhas, Sanghar, Matiari and Umerkot areas of Sindh area shown in (Figure 3. Districts of Sindh producing Better Cotton).



Figure 2. Worldwide producers of Better Cotton



Figure 3. Districts of Sindh producing Better Cotton

5. Conclusion

BCI, in collaboration with its implementing partner CABI, launched a capacity-building project to train farmers in cotton-growing areas around the world to grow cotton in accordance with BCS. In Sindh, CABI is working in five districts; Tando Allahyar, Mirpurkhas, Sanghar, Matiari and Umerkot in which, 35-40 farmers are registered into LGs (learning groups) in BCSS. LG holds regular meetings, and all farmers receive training on various aspects of BCI principles from implementing partners. Each farmer is required to fill out a farmer's field card, which includes

information on all farm-related operations as well as detailed information on the purpose of input and output.

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