

IMPACT SHEET • SWITCH-ASIA PROJECT
**SUSTAINABLE COTTON PRODUCTION IN PAKISTAN'S
COTTON GINNING SMES (SPRING)**

Developing a sustainable cotton supply chain in Pakistan



The project improved resource efficiency of the cotton ginning sector, leading to an annual reduction in GHG emissions of 2 400 tonnes CO₂ and increased access to international markets for 500 ginning SMEs



The Challenge

The cotton and textiles sector accounts for 40% of Pakistan's total labour force and nearly 60% of exports. Cotton is a natural and breathable fibre; it is also renewable, recyclable and biodegradable. Consumers, brands and retailers are becoming increasingly conscious about issues such as chemical and water use, child labour, gender inequality, low wages and other risks linked to the cotton sourcing. Besides exploring choices for sourcing the cotton sustainably, responsible businesses are looking to improve cotton-sourcing procedures through more traceability, control and transparency in their cotton supply chain. The cotton ginning sector in Pakistan is characterised by direct environmental impacts resulting mainly from high-energy consumption and inefficient processes. Moreover, poor housekeeping and working conditions pose direct threats to health and safety of the workers.



Activities / Strategy



Improving the Supply of 'Better Cotton'

The project promoted and supported the widespread adoption and application of Better Ginning Practices (BGPs) among Pakistan's ginning SMEs. The main outcome of these activities were a thorough understanding and appreciation of available technology options, efficiency impacts, and the business case for the adoption of BGPs by cotton ginners, government and other stakeholders. Linkages were established between ginning SMEs and Better Cotton farmers, which led to a number of benefits, such as access to less contaminated seed cotton and, consequently better quality cotton, hence better prices. By enabling the tracking of Better Cotton along the supply chain, the ginners obtained improved market recognition, increased access to international markets, and access to new markets and buyers through the Better Cotton market.



Developing Better Ginning Practice (BGP) Guideline

The project developed a BGP Guideline, taking into consideration feasibilities and associated investments, for cotton gins in Pakistan. Collation of better ginning practices and findings from the practical implementation of BGPs among the demonstration SMEs has led to identification of suitable best practice on ginning efficiency, Decent Work, waste management and Better Cotton sourcing and tracking which are included in the BGP Guidelines. These recommendations, through a consultative process, engaged stakeholders (including key industry and government actors) through a series of meetings and workshops, and were employed to fine tune and endorse the final BGP Guidelines. The review committee, formed under National Better Cotton Stakeholders Council, comprising of representatives of Ministry of Textiles, Better Cotton Initiative, University of Agriculture, Department of Labour and Pakistan Cotton Ginners Association, endorsed the guidelines for future policy work.

Objective

The *SPRING* project aimed to have at least 500 cotton gin SMEs in Pakistan recognise the benefits of sustainable cotton production and consumption, and 40% of these SMEs commit to more sustainable production practices, in line with the agreed better ginning practice guidelines, and supported by the procurement practices of European retailers.



TARGET GROUPS

- Ginning SMEs
- European retailers
- Supporting institutions: Cleaner Production Institute (CPI), Pakistan Cotton Standards Institute, All Pakistan Textile Mills Association; Ministry of Textiles, Labour and Manpower; Small & Medium Enterprise Development Authority (SMEDA)
- National Textile University
- 10 financial institutions, e.g. the Agriculture Development Bank (Zarai Taraqati Bank Ltd.)
- Ginning equipment manufacturers



Scaling-up Strategy



Building the Capacity

The project's training approach incorporated on-site demonstrations that were documented in training materials and training workshops. The customised training methodology supported SMEs to upgrade the standards in their ginning facilities. The 60 participating SMEs benefited from expert support in developing and implementing economically and environmentally sustainable production practices as well as the required low cost modifications.



Instilling Change in Retailers' Purchasing Practices

The project activities included active engagement with European retailers and electronic and print media to communicate the benefits of and encourage support for sustainable cotton sourcing. Market pull was required to create sufficient demand for sustainably produced cotton and its products. Efforts to mainstream Better Cotton and Better Cotton products include sensitising and motivating major global actors / brands about the importance of supporting sustainable cotton production, for their business, for people and the environment. Ensuring effective replication, the Guidelines on Better Ginning Practices and the lessons on adoption have been disseminated to at least 500 gins (out of 1 000 in Pakistan) through the Pakistan Cotton Ginners Association (PCGA), training sessions and exposure visits.



Conducting In-depth Dissemination

The project worked with 30 core ginning SMEs (including an initial three demonstration gins)



The ginner frequently disclosed to us that prior to being part of the SWITCH-Asia SPRING project, they used to run their ginning facilities as a trading place of processed cotton and they never considered ginning business as an industry, let alone considering energy conservation, mechanical efficiency or productivity. The SPRING project highlighted not only economic benefits of improving efficiencies, but also raised consciousness about improving working conditions and the environment at the factories. We not only changed how SMEs work, but also the mindset of the industry, which in my opinion is a far bigger success.

Mr. Asad Imran,
Senior Manager, SPRING Project



to develop BGP Guidelines and involved stakeholders from industry, government and the National Stakeholder Council. It targeted a second level of 200 gins (Level 2) to build their technical capacity and secure a voluntary commitment to adopt BGPs. This step was realised through training workshops and encouraging the gins to share knowledge with others. The project also built the capacity of key institutions, such as PCGA, SMEDA, PCSI, and NTU, so that they further supported the promotion of BGPs and provided technical support to gins. It further targeted 300 gins (Level 3) to raise their awareness about the business case for adopting BGPs. Regional learning and sharing workshops were organised to exchange good practice. Additionally, it engaged policy makers to contribute to building an enabling policy environment and policy enhancement for sustainable cotton production. Finally, the project targeted European retailers to build market demand.



Without the SPRING project, there would have been fewer improvements in the cotton ginning sector, which cost the owners little but made great savings. Even small low-cost changes, adjustments, or replacements resulted in energy savings. The saved energy will then be available where it is needed the most. As an example, through reduced use of electricity, we saved around PKR 1.4 million (EUR 12 500) this past season, and this saving increased our business volume by 2 000 bales which generated extra revenue of about PKR 11 million (EUR 99 500). It is a win-win situation for WWF-Pakistan, cotton ginning factories, and energy conservation for us all.

Mr. Chaudhry Abdul Ghaffar,
General Manager of MEKOTEX
Cotton Ginning Factory in Bahawalpur



Results



Improved the Productivity and Quality of Ginning SMEs

Some 45 better ginning practices were identified based on the experience of three demonstration gins and 30 core ginning SMEs (Level 1). The business case and cost benefits obtained through BGPs convinced and motivated Level 2 and 3 SMEs to adopt BGPs, surpassing project targets. Performance evaluation carried out through post-implementation technical audits of 45 Level 1 and 15 Level 2 ginning factories showed significant improvements through the optimisation of resource use for improved productivity and quality. During 2015, the project reached 300 Level 3 SMEs in Sukkur Rahim Yar Khan, Bahwalpur, using self-learning techniques documented in training materials and workshops. The customised training methodology supported SMEs in upgrading their processes and practices in the field of ginning efficiency, OHS, and many other aspects of sustainable cotton production and processing.



Supported the Policymakers through BGP Guidelines

BGP Guidelines provided policymakers and other stakeholders with a valuable reference base for national policy recommendations and standards to effect modifications relevant for productivity, quality, environmental and safety performance of Pakistan's ginning industry.



Conducted Collaborative Research

Results of research studies conducted by the Department of Textile and Fibre Technology (optimisation of ginning processes), University of Agriculture Faisalabad (UAF), and Department of Chemical Engineering of University of Engineering and Technology (UET) in Lahore (i.e. the development of household gasifier) were disseminated among targeted ginning SMEs and relevant stakeholders. Seminars, world environment day, and Earth Hour celebrations at academic institutions were instrumental in raising awareness among students and faculty members, linking SCP with a sustainable lifestyle.



Engaged with European Retailers, Brands and Businesses

Meetings were held with 471 members of more than 40 globally-known European brands, retailers and businesses in order to promote the benefits of Better Cotton and to identify opportunities for its supply and sourcing.



Better Cotton Supply Chain Established

Collaboration between WWF-Pakistan and BCI resulted in an increase in ginning SMEs joining the Better Cotton System. In 2015, 170 ginners requested registration to be BCI ginners to cater to more than 90 000 Better

Cotton farmers who were engaged in sustainable cotton production. BCI membership from Pakistan increased significantly in three years, from 29 in 2012 to 112 in 2015.

Impact in Numbers

Economic Impact



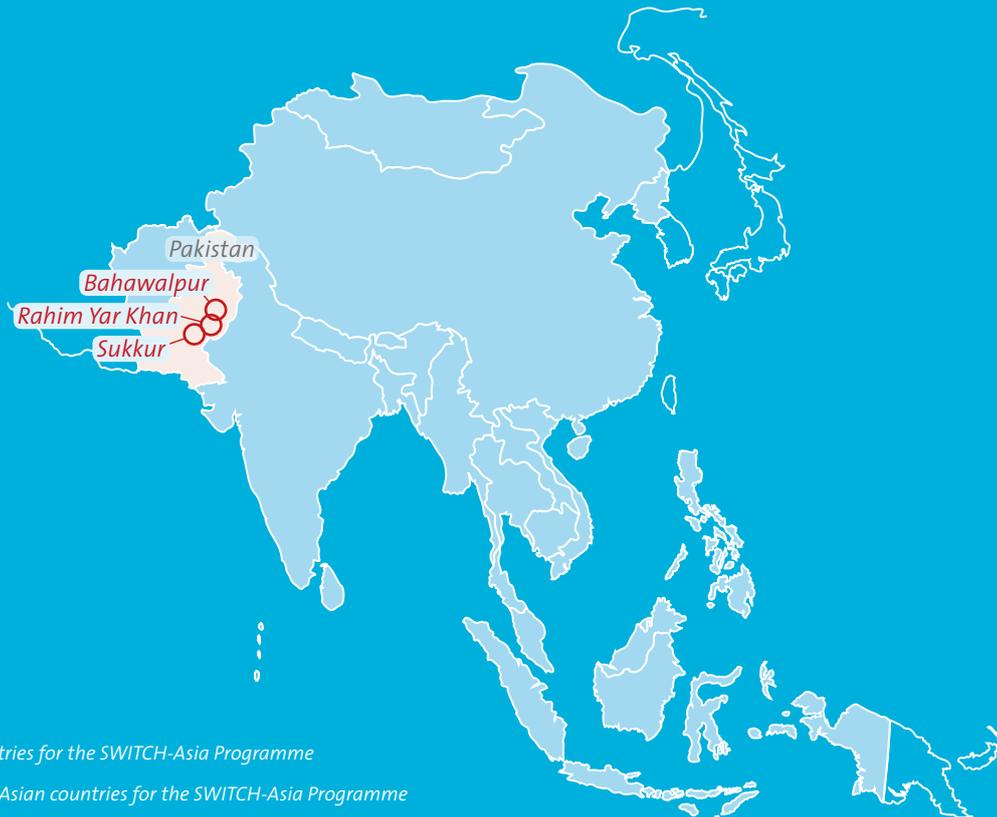
- 60 SMEs achieved money savings estimated at PKR 65 million (EUR 0.5 million) by implementing Better Ginning Practices (BGPs). The SMEs earned an additional PKR 51 million or EUR 0.43 million due to the sale of additional lint (cotton bales).
- The project facilitated a tenfold increase in Better Cotton procurement during 2015-2016, resulting in 60 times higher lint production compared to 2012-2013 due to improved cotton quality.
- BGPs recommended for optimising saw speed in relation to maturity level of seed cotton being ginned resulted in an improved fibre quality up to 5% reduction in Short Fibre Index (SFI) and 10% increase in Uniformity Index thus fetching higher prices for lint.
- Adoption of BGPs resulted in 20% increase in productivity per SME, from a rate of 10 bales per hour to 12 bales per hour. In terms of production costs, a productivity increase of 2-4% pertaining to similar input/raw material, energy, labour and overheads, resulting in an average 400 additional bales per ginning season.
- Saw replacement and mechanical optimisation have increased the ginning outturn (GOT) by 2% from 14.7 kg lint per 40 kg of seed cotton to 15 kg lint per 40 kg of seed cotton, thus producing 40 additional bales per season or an additional income of PKR 850 000 (EUR 7300).
- Adoption of proper maintenance procedures and calibrations carried out with recommended tools by trained fitters led to reduction in shutdown time, increasing average working hours per production by 33% from 1 200 hours to 1 600, resulting in producing approx. 4 000 bales with the same overhead and labour costs.
- Created new business opportunities for SMEs during 2012-2015:
 - 40 new ginning SMEs per year joined in Better Cotton procurement and processing;
 - Each year 30 new local businesses / brands/ retailers engaged in sustainable cotton consumption;
 - Each year about 10 new global textile brands started to procure Better Cotton, thus increasing its overall demand.
- Introduced new sustainable products to the market, using Better Cotton, such as jeans, bed linen, and t-shirts produced by international brands like Levi's, IKEA and M&S.

(continued)

Impact in Numbers

(continued)

<p>Environmental Impact</p> 	<ul style="list-style-type: none"> • Increase in sustainable cotton procurement by SMEs triggered a change in cotton production at farm level. Annually, this reduced the use of pesticides by up to 21%; chemicals by up to 16.15%; and freshwater by up to 21.15%. • Adoption of better ginning practices promotes energy conservation, improved process efficiency and resource management. • Reduction in the use of pesticide and chemical fertilisers increases soil biodiversity at farms. • Reduced the extraction of ground water due to conservation of irrigation water. • Reduced noise and dust pollution. 	<p>Green Finance</p> 	<ul style="list-style-type: none"> • 60 cotton ginning SMEs were linked with 10 financial institutions (FIs), including the State Bank of Pakistan, to obtain soft loans and/or long-term credit (for new machinery, warehouse constructions, heavy machinery). • Information of SMEs' financial needs to implement particular better ginning practices was shared with FIs through the State Bank of Pakistan. • The project contributed to the taken up of ginning sector by the State Bank of Pakistan and the associated financial institutions as part of agriculture sector, so banks could offer long-term loans at comparatively low mark-up rates.
<p>Social Impacts</p> 	<ul style="list-style-type: none"> • Improved working conditions in SMEs through: <ul style="list-style-type: none"> • Reduction of noise level and particulate matter in the production hall to a safe of level for eight-hour shifts; • Increased workplace illumination level to the recommended level (350 Lux). • Promoted health and safety risk reduction measures in SMEs: <ul style="list-style-type: none"> • Facilitated the Pakistan Cotton Ginners Association (PCGA) to commit to abolishment of child labour; • Adoption of mechanical modification and relocation of machinery which reduce noise and dust; • Installed cyclones to collect dust in production halls; • Conducted training for gin workers on occupational health and safety (OHS), enabling them handle emergency and work related hazards and promoting the use of personal protective equipment (PPE); • Introduced job rotation at factories to reduce workers' exposure to dust and noise hazards. • Increased workers' capacity and enhanced their value in the labour market by providing technical training. 	<p>Target Group Engagement</p> 	<ul style="list-style-type: none"> • Engaged with more than 500 SMEs in project activities, such as on-site technical support, technical training, and widespread dissemination. • Engaged with 10 stakeholder groups (ginning SMEs, ginners association, academia & research institutions, government departments & ministries, Pakistani textile brands, European retailers, cotton farmers, rural women working as cotton pickers). • Conducted 285 training events for SME owners, technical and managerial staff on efficient ginning; 103 on Decent Work, 18 meetings with government ministries; 15 meetings with textile associations; 4 media visits to project areas; and 4 national stakeholder council meetings. • BCI membership from Pakistan increased significantly within three years, from 29 in 2012 to 112 in 2015.
<p>Climate Benefits</p> 	<ul style="list-style-type: none"> • Adopting recommended BGP measures (replacement and size optimisation of motors, optimisation of machine start-up procedures, enhancement in power factor improvement (PFI) plant, installation of automatic voltage stabilisers, and use of power analysers) have led to lowered energy consumption leading to 15-17% overall savings in SMEs' electricity use. Data shows a reduction of 2-4 units of electricity per bale produced, where average SMEs can produce 20 000 – 40 000 bales per season. • 60 participating SMEs achieved reductions of 20% energy usage, saving approx. 4 820 631 KWh; GHG emissions of 2 400 tonnes CO₂e by implementing energy efficiency measures. • The improved suction and seed cotton delivery system (conversion to conveyer belt system) led to energy saving of PKR 2 500 000 (EUR 21 600) in energy costs. • Adoption of BGPs has led to 17-33% energy reduction per year per SME, from 18 kWh per bale to 12-15 kWh per bale. A reduced energy consumption of 3-6 units led to a minimum of PKR 1 200 000 (EUR 10 200) per season. • Enhanced business awareness on climate change risks through increased public awareness and dissemination of SCP concept through seminars, street theatre, workshops, etc. 	<p>Women's Empowerment</p> 	<ul style="list-style-type: none"> • Built the capacity of more than 5 000 women through training (cotton picking is mainly done by women) on OHS. • Conducted 24 training sessions for rural women to acquire alternative income from mushroom cultivation using cotton waste. • Improved 400 households' access to clean energy by developing a new gasifier for cooking.
<p>Policy Development</p> 			<ul style="list-style-type: none"> • Developed and published "Better Ginning Practices" guidelines as reference for future policies. • Established a national multi-stakeholder platform, National Stakeholders Council, to promote SCP in Pakistan.
		<p>Europe-Asia Cooperation</p> 	<ul style="list-style-type: none"> • Conducted five events involving European and Asian participants. • Organised study tours: ginners and stakeholders' exposure visit to Turkish textile and cotton farming sector, and ginners and stakeholders visit to Chinese manufacturers of textile and ginning machinery. • Collaborated with World Fair Trade Organisation (WFTO) to explore opportunities for engaging textile artisans in the sustainable cotton supply chain. • Developed a training curriculum for gin operators in collaboration with GIZ. • Contributed to the EU-Asia cooperation through publication and documentary for European audiences. • Regular meetings held with European retailers and suppliers in order to promote the benefits of Better Cotton, reaching 471 members of more than 40 globally known brands and retailers.



Legend

- Eligible countries for the SWITCH-Asia Programme
- Non-eligible Asian countries for the SWITCH-Asia Programme

Project implementation area

- City
- Region
- Country

The boundaries shown on this map do not imply on the part of the European Union any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

OBJECTIVES

The project aimed for at least 500 cotton gin SMEs in Pakistan to recognise the benefits of sustainable cotton production and consumption by 2015, and for 40% of these SMEs commit to more sustainable production practices, in line with agreed better ginning practice guidelines, and supported by the procurement practices of European retailers.

DURATION



PROJECT TOTAL BUDGET

EUR 1 979 286
(EU contribution: 80%)

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