

REPORT
OF THE
FIRST TECHNICAL WORKING
GROUP MEETING (PAKISTAN)
OF THE
BETTER COTTON INITIATIVE

Held at the Central Cotton Research Institute, Multan
Pakistan

13 – 14 February 2007



Table of Contents

Executive Summary.....	4
Acknowledgements	6
About this report.....	6
Introduction	7
Objectives of meeting.....	8
 Day 1	
Cotton Vision 2015 and BCI	
Overview	9
WWF and Agriculture	9
Cotton Vision 2015	10
Better Cotton Initiative	11
Working Session: Identification of synergies and commonalities between Cotton Vision 2015 and Better Cotton Initiative	13
 Technical Presentations	
The effect of conservation technologies on water application and productivity of cotton (Mr Abdul Hakeem Khan, International Water Management Institute).....	16
Use of Neem in IPM Cotton (Dr Ghulam Jilani, Deputy Director General, Institute of Plant & Environment, NARC).....	16
Agriculture extension system in Punjab (current & future) (Ch Ghaffar, Director General, Agriculture (Extension and AR), Punjab).....	17
National Biotech Cotton Initiatives (Dr Mehboob-ur-Rahman, National Institute for Biotechnology & Genetic Engineering, Faisalabad).....	18
Review of cotton production policies and guide lines and recommend reforms for sustainable cotton production in Pakistan (Dr. Muhammad Ali Chang and Ch. Waheed Sultan Khan)	19

Day 2

Overview	20
Pakistan Sustainable Cotton Initiative (Arif Mukhdum, Manager Cotton, Freshwater and Toxics Programme, WWF).....	21
Community integrated pest management project in Punjab (Muhammad Asif Khan, Project Manager, Community IPM Project)	22

Working Session

BCI global principles.....	25
DRAFT BCI criteria	25
Questions and Answers	27

Next steps	29
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Appendices

Invitation letter	30
Participants	32
Agenda	33
Flip chart transcriptions for day 1	35
Flip chart transcriptions and comments for day 2:	
Water quality and availability working group	37
Soil health working group	39
Safe and responsible pesticide use working group.....	41
Fibre quality working group	44
Evaluation and Feedback.....	47
Background information provided prior to meeting	49

Executive Summary

Better Cotton Initiative (BCI) held an extremely successful 2-day meeting at the Central Cotton Research Institute, Multan, on 13 & 14 February 2007. A range of informative presentations provided detailed background information on cotton growing in Pakistan. These presentations highlighted the steps being taken — through policies such as Cotton Vision 2015, the research and development being undertaken in a range of production issues, and the extension technologies being investigated — to help ensure that the Pakistani cotton industry remains one of world's leading suppliers of cotton and cotton textiles.

Whilst Cotton Vision 2015 and BCI have a different focus, they have many common areas of interest, and are both concerned with the welfare and livelihood of cotton farmers. That they provide diversity in addressing common areas of interest through different means should ultimately assist both. Equally importantly, no areas of direct conflict between the aims and objectives of Cotton Vision and BCI were identified.

BCI sought a number of outcomes from the meeting, and these were met. As well as identifying the areas of shared interest between BCI and Cotton Vision 2015, the meeting participants:

Confirmed the applicability to Pakistan of the global environmental principles within the Better Cotton Global Framework, i.e. Better Cotton is produced by farmers who:

1. Maintain the quality and availability of water
2. Use pesticides safely and responsibly¹
3. Care for the health of the soil
4. Care for and preserve the quality of the fibre
5. *Preserve natural habitats (draft only)*

Confirmed the relevance of the proposed (i.e. draft only) criteria, and provided suggestions on additional criteria for inclusion within the definition of Better Cotton: i.e

- For maintaining the quality and availability of water: criteria for efficient use, extraction and water quality were all seen as relevant; no additional criteria were suggested
- Use pesticides safely and responsibly: criteria for occupational health and safety, application, adoption of IPM (Integrated Pest Management) and pesticide choice were all seen as relevant; no additional criteria were suggested
- Care for the health of the soil: criteria for soil management, erosion management² and efficient fertiliser management were all seen as relevant; an additional criteria relating to the use of precision agriculture was suggested
- Care for and preserve the quality of the fibre: criteria for agronomic management and harvesting and handling were both seen as relevant; an additional criteria relating to the need to have a fair and equitable marketing system was proposed
- *Preserve natural habitats (draft only): no criteria drafted or proposed*

¹ While the working group looking at this principle suggested that "Plant Protection" was a suitable alternative wording for this principle, it supported the overall aim of this principle

² It was noted that while soil erosion is a relevant consideration, it was not seen as an issue in the cotton growing regions of Pakistan

Identified current recommended best practices for soil, water, pest and fibre quality management

Identified a number of constraints on the adoption of Best Management Practices (BMPs)

Identified options for measuring the impact of adoption of the recommended BMPs

Identified many areas requiring further exploration

Broad headings for BMP's and a range of possible indicators were successfully identified. Development of comprehensive and detailed BMP's and indicators for every criterion will take place following the meeting and further details will be presented to the next Technical Working Group meeting, which will take place once an initial TWG has been held in each of the four focus countries / regions (Brazil, West Africa, India and Pakistan). The aim is to hold this next TWG before the end of 2007.

The groups were also asked whether:

- Are there any practices associated with the criterion that you believe are essential to qualify for better cotton?; and
- Are there any practices associated with the criterion that should disqualify as better cotton?

A range of suggestions for practices that are required for qualification, or that would result in disqualification were made. These are detailed in the working group discussions, and will be considered as part of the overall review of the global BCI framework once a TWG meeting has been held in each region.

It was agreed that the next steps in developing the definition of Better Cotton with Pakistan would be that:

1. The draft report will be provided to all participants as soon as possible for their comments before it is then finalized
2. BCI will follow-up on the technical details highlighted by the working groups, especially BMP's and indicators, in order to more fully develop the list of potential BMP's and indicators for Better Cotton in Pakistan
3. An on-line discussion forum will be developed by BCI to allow for the follow-up noted in 2. above, and for discussing any other issues raised by participants
4. Once equivalent Technical Working Group meetings have been held in each of the other initial focus regions the proposed Better Cotton framework will be reviewed and adjusted as necessary. In particular, close attention will be paid to ensuring there is an appropriate division between the global wording and regional wording of the Better Cotton definition. Consideration will also be given to any suggested amendments to the global-level principles and criteria made by the regional Technical Working Groups.
5. This revised draft of the BCI framework (principles and criteria) will then be provided to all TWG participants
6. A second Technical Working Group meeting will then be organised for Pakistan. Its broad aims will be to:
 - Review the amendments (if any) to the Better Cotton framework, and consider the implications for Pakistan
 - Consider in more detail the proposed indicators and BMP's
 - Begin to consider options for testing the draft definition of Better Cotton in the field in Pakistan

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

At the same times as the TWG was taking place the BCI Social Process Co-ordinator was meeting with a range of stakeholders. Understandably, many organisations consulted as part of the social process pointed to significant overlap between environmental and social concerns:

- relations between pesticide use and health & safety and economic sustainability
- reduced and more effective input use increasing rural household incomes
- promoting a broader conception of cotton 'quality' (incorporating both agronomic and social characteristics – eg reducing contamination) in order to ensure better prices, and thence the potential to improve terms of employment for labourers

Additionally, the pressure of short-term financial needs militates the ability to adopt more sustainable farming practices, that often have both a longer, and less-well defined 'pay-back'. There is a critical need for the 'environmental' (TWG) and 'social' themes to be addressed alongside one another, and BCI will develop strategies to ensure that this occurs.

MinFAL kindly offered its continued support to BCI, with CCRI delegated to take the lead on providing this support.

Acknowledgements

The generous support and assistance of the following organisations and institutions was instrumental in the smooth running and success of the meeting:

- Ministry of Food, Agriculture and Livestock (Dr. Qadir Bux Baloch)
- Pakistan Central Cotton Committee (Dr. Ibad Siddiqui)
- Central Cotton Research Institute (Dr. Muhammad Arshad)
- WWF-Pakistan (Mr. Hammad Naqi Khan)

The sincere thanks of Better Cotton Initiative is extended to all the participants in the meeting whose contributions were invaluable in achieving the objectives set out at the start of the meeting.

About this report

This report aims to record the many and varied issues presented and discussed during the two days. Please note that apart from the specific objectives of the meeting (outlined below) the meeting did not endeavour to reach or agree on a position on all the issues raised. Thus the comments and answers recorded reflect the opinion of the person making the comment, and do not necessarily reflect the opinion of BCI or any other person or organisation participating in the meeting.

Introduction

The Better Cotton Initiative (BCI) is an international collaboration to encourage the adoption of better management practices in cotton cultivation to achieve measurable reductions in key environmental impacts, while improving social and economic benefits for cotton farmers, small and large, worldwide.

BCI is a collaborative global process, involving a wide range of stakeholders — from farmers and their representatives, to researchers and extension agents, and others along the cotton value chain all the way to the brand owners and retailers. BCI will engage with these stakeholders in open, inclusive and constructive dialogue. It will be governed by a steering committee including, but not limited to, producers, retailers, NGO's, and international organizations.

The vision of BCI is to enable millions of farmers around the world to grow cotton in a way that is more economical, and healthier both for the farming community and the environment.

This global multi-stakeholder initiative recognizes the wide array of issues connected with cotton cultivation, each with differing importance depending on regional circumstances. In order to effectively address the key negative impacts of cotton cultivation, BCI will act on the most significant issues, within certain cotton growing regions, while striving for continuous improvement and expansion of its activities to additional regions over time.

At the heart of the BCI process is the establishment of local Technical Working Groups (TWG's), initially in Brazil, India, Pakistan & West Africa. This will be done by engaging with regional stakeholders, especially cotton farmers, researchers and local authorities involved in developing sustainable cotton farming practices. These TWG's will help define what Better Cotton is and how local cotton farmers could successfully grow Better Cotton.

This report details the outcomes of the first TWG held at the CCRI in Multan, Pakistan on 13 and 14 February 2007. This TWG meeting was focused on the environmental aspects of Better Cotton, and so did not address the social component of Better Cotton. Options for, and institutions to involve in, the establishment of an equivalent social working group, to run in conjunction, are currently being investigated by BCI.

BCI will collaborate with regional and global partners to provide a broad global perspective and identify appropriate international norms. BCI will also work with stakeholders to identify methods, and implement means, to measure and verify the reduction of impacts over time.

Once a global Better Cotton system has been defined, it will be tested through regional pilot studies to ensure it is practical, achievable, and has the desired effect of improving the environmental, social, and economic sustainability of cotton farming.

This work has begun and will be carried out over the next five years, aiming to put Better Cotton in the supply chain by 2012.

Objectives of meeting

As highlighted in the introduction, BCI is seeking to define “Better Cotton” in a way that is both globally consistent and regionally adaptable. This will be achieved through the application of a set of global principles and criteria, with the means of achieving these global principles and criteria being established at the regional level, through regionally-applicable indicators (i.e. indicators of achievement of the criteria) and best management practices.

The purpose of the initial TWG in Pakistan was formally outlined to participants in the meeting as:

1. Identification of the synergies (similarities) between Cotton Vision 2015 and Better Cotton Initiative
2. Shared understanding of the relevant and technical aspects of current research and projects in Pakistan, and how they contribute to Cotton Vision 2015 and Better Cotton Initiative.
3. Confirmation of applicability of the global environmental principles within the Better Cotton Global Framework
4. Refined criteria under each of the Principles
5. Identification of current standard practices and recommended best practices for soil, water, pest and disease management
6. Identification of constraints on adoption of Best Management Practices (BMPs) (financial and geographical), and of any ‘conflicts’ between them
7. Identification of options for measuring the impact of adoption of the recommended BMPs
8. Identification of areas requiring further exploration

In summary, the meeting was seeking to:

- Introduce BCI to the participants
- Confirm that the global principles are relevant in Pakistan
- Identify the Pakistan-specific practices and issues that the definition of Better Cotton needs to take into account

These objectives were sought to be achieved through a combination of:

- formal presentations on topics of a technical nature on cotton growing and extension in Pakistan
- smaller break-out groups working on a series of questions designed to address the objectives
- reporting back by the break-out groups to the plenary meeting; and
- question and answer opportunities for both the formal presentations and the reporting sessions

Day 1 Overview

Day one was dedicated to ‘painting the background’, with presentations in the morning from representatives of the World Wide Fund for Nature (WWF), the Pakistan Central Cotton Committee (PCCC) and Better Cotton Initiative (BCI) providing an overview of their current work in cotton.

Participants were then asked to form smaller working groups to compare and contrast Cotton Vision 2015 and BCI. Following this working session and reporting back, detailed technical presentations were made on a range of issues: water management, Bt cotton, integrated pest management (IPM), use of neem, extension approaches, and the results of a review of current policies and guidelines affecting adoption of sustainable cotton production practices.

A summary of the main points made during the presentations, and of salient points made during the discussions follows. These points are included to indicate the range of issues discussed and reflect the opinion of the individual making the point; no attempt was made to reach formal agreement or consensus on these issues. Further details from the presentations — i.e. the slides used — can be found at the following internet address:

<http://www.bettercotton.org/?5>

WWF and Agriculture – an Overview (Hammad Naqi Khan)

WWF’s mission is to stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature by:

- ✓ Conserving the world’s diversity
- ✓ Ensuring the use of renewable energy sources is sustainable
- ✓ Promoting the reduction of pollution and wasteful consumption

WWF’s work is focussed on six global issues or themes: climate change, forests, species, toxics, marine and freshwater.

Agriculture is a relatively new focal area for WWF; it is being addressed specifically as agriculture is responsible for:

- ✗ Habitat loss
- ✗ 70 % of water consumption
- ✗ Use of agro-chemicals
- ✗ Pollution
- ✗ Climate change – agriculture contributes between 25-40 % of greenhouse gases that contribute to climate change

WWF’s agriculture program therefore aims to:

- ✓ Reduce pollution caused by irrational use of agrochemicals
- ✓ Increase water use efficiency
- ✓ Create an enabling environment
- ✓ Improve the livelihood of farming communities through the promotion of better management practices

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

WWF's approach will be strategic: they will focus on 6-8 key impacts, and not try to address everything. The approach will be to focus on 'better' producers, and to let farmers identify the solutions (rather than prescribing technologies or solutions).

WWF has been working in the field since 2000, when the Pakistan Sustainable Cotton Initiative commenced, in collaboration with WWF-Switzerland and IKEA; this has now merged with the Pakistan Sustainable Sugar Initiative to become the EU funded "Water Thirsty Crops" project.

Cotton Vision 2015

(Dr. Ibad Siddiqui, Vice-President, Pakistan Central Cotton Committee)

This presentation outlined the current status of the Pakistani cotton industry, and the proposed (draft) vision for 2015. The vision is "Pakistan to lead the world cotton and textile market with higher production of contamination free/clean cotton."

Some of the implications of the vision noted were:

- ✓ The promotion of cotton in new areas
- ✓ Research to focus on higher yielding, longer staple varieties with resistance to cotton leaf curl virus (CLCV)
- ✓ Promotion of IPM
- ✓ Support for cotton growers to continue growing cotton
- ✓ Improve cotton quality through standardisation and grading system improvement
- ✓

Specific targets are proposed for:

<i>Cotton production</i>	<i>20.70 million bales</i>
<i>Average yield</i>	<i>1060 kgs/ha</i>
<i>Mill consumption</i>	<i>20.10 million bales</i>
<i>Exportable surplus</i>	<i>0.60 million bales</i>
<i>Improved yarn recovery rate</i>	<i>92% (up from current 84%)</i>

A number of issues that need to be addressed to achieve the vision were noted, including:

- ✗ The large number of small and/or uneconomic units
- ✗ The wide gap in yields between farmers
- ✗ The threat of CLCV
- ✗ The challenge of enhancing adoption of good pest management techniques
- ✗ Poor availability of certified planting seed
- ✗ Marketing system based on variety and locality rather than inherent quality, and lack of a premium for better quality and contamination-free cotton
- ✗ Poor handling of cotton adversely affecting quality
- ✗ Extreme heat

The specific objectives of Cotton Vision 2015 are to:

- ✓ Match production to textile industry demand
- ✓ Have an assured supply of cleaner, uniform and contamination free cotton

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

- ✓ Improve the yarn recovery rate
- ✓ Improve the international reputation (and thus price) of Pakistan's cotton
- ✓ Increase foreign exchange earnings

A range of options to achieve the production goals of Cotton Vision 2015 (noted above) were reviewed, including the following research and development needs:

- ✓ Improved CLCV control
- ✓ Development of commercial cotton hybrids
- ✓ Development of Bt cotton
- ✓ Development of heat, insect, salinity and drought resistant varieties
- ✓ Development of longer staple varieties
- ✓ Continued focus on IPM
- ✓ Improved technology transfer techniques
- ✓ Promotion of cotton cultivation in new areas such as NWFP and Balochistan

Details on the suggested or proposed actions to address some of these issues were provided and can be found in the full copy of the presentation, available at www.bettercotton.org/?5

Better Cotton Initiative

(Allan Williams, Technical Coordinator - Environment)

This presentation was aimed at providing a broad overview of BCI, including the global context within which BCI is working, the current framework for the definition of Better Cotton, the proposed global principles and criteria that will define Better Cotton, and the process that BCI is using to define Better Cotton in collaboration with regional stakeholders.

The mission of BCI is to encourage the adoption of better management practices in cotton cultivation to achieve measurable reductions in key environmental impacts, while improving social and economic benefits for cotton farmers, small and large, worldwide.

Thus, BCI:

- ✓ Is focussed on the farm; whilst it is recognised that there are other important considerations in the supply chain, in order to keep the initiative manageable, it is currently limiting its scope to farm-level activities and issues
- ✓ Is focussed on outcomes
- ✓ Is focussing on the key, or critical issues associated with cotton cultivation; i.e. it will not be seeking to address every single issue
- ✓ Is a global process, that will seek to define Better Cotton in a way that allows for a common and consistent global definition, but which will also allow for regional considerations to be taken into account

The organisations currently participating in the BCI Steering Committee, including an overview of these organisations are listed in the Appendix within the background information provided to participants. It was highlighted that the SC is seeking further participants.

The current focal regions of BCI are Pakistan, India, Brazil and West Africa; Pakistan was chosen as an initial focal region for a number of reasons, including the importance of the Pakistani cotton industry

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

internationally and the existing presence of fieldwork on better management practices being conducted by WWF and IKEA.

A number of other initiatives focussing on the environmental and/or social impacts of cotton were highlighted, including:

- FairTrade
- Cotton made in Africa
- Marks and Spencer's "Look behind the Label" campaign
- Wal-Mart's "Sustainable Textile Network".

An overview of the BCI framework was provided.

Principle	Criteria	Tools	Implementation Strategy	Indicators
Broad goal which we hope to achieve	Key elements that must be met to achieve principle ('detailed what')	Tools and resources that farmers can use to meet criteria	How tools and/or resources will be provided to farmers	Measurements used to indicate whether the criteria are met

The 5 principles of Better Cotton are:

- ✓ Maintain the quality and availability of water
- ✓ Use pesticides safely and responsibly
- ✓ Care for the health of the soil
- ✓ Care for and preserve the quality of the fibre
- ✓ *Preserve natural habitats (draft only)*

Specific examples of each of these elements of the framework – in particular the criteria and indicators – were provided to help illustrate the way in which Better Cotton is being defined; the specific examples for each principle can be found in the Appendices, under the individual working group reports on water, pesticides, soil health and fibre quality.

An overview of the technical working group (TWG) process that is being used to define Better Cotton was provided:

- ✓ There will be a TWG for each focal region
- ✓ It will be formed in collaboration with local partner(s)
- ✓ Currently proposed that it will meet 3 times:
 - Meeting 1: BCI introduction, identification of major elements (criteria), indicators and BMP's
 - Meeting 2: Refining of Better Cotton definition, work on identifying testing options
 - Meeting 3: Agreement on final draft, further work on testing of definition

The questions to be answered during the day 2 working session were then outlined; these are listed in the Appendices under the working group reports, and were designed to help achieve the outcomes sought from the meeting

Working Session: Identification of synergies and commonalities between Cotton Vision 2015 and Better Cotton Initiative

Following the presentations on Cotton Vision 2015 and Better Cotton Initiative, the meeting broke into smaller working groups who compared and contrasted the two initiatives. These groups then reported back to the meeting.

The results of the discussions were general agreement that while the two initiatives were being driven by different overall objectives (“They are not twins”), they have many areas of common interest, and are compatible. Having two approaches provides diversity, which will help each initiative to benefit from the other.

In particular, they are both:

1. “Farmer friendly” i.e. interested in farmer welfare and seeking to improve the livelihoods of cotton farmers
2. Focussed on minimising degradation of natural resources
3. Interested in good farming practices, especially for soil health, efficient fertiliser use, fibre quality management, irrigation management and integrated pest and crop management

Areas of difference between the two initiatives were identified as:

1. Cotton Vision 2015 is ultimately focussed on achieving an overall economic outcome for Pakistan, while BCI is focussed on the key environmental issues, particularly water and pesticide use
2. BCI is more focussed on outcomes, and wants to leave how to best achieve those outcomes to the farmer
3. BCI is not focussed on conducting research, whereas Cotton Vision 2015 has identified a number of areas where research is required to help with the achievement of the identified Cotton Vision targets.

Other general comments made during the reporting back of the small-group discussions included:

- Pakistan's climate of high temperatures and low humidity presents insect management challenges that many other countries do not face
- Pesticides are not used as judiciously as they could be in general, eg. with respect to choosing the right pesticide for the right pest, and using it at the right time
- Soil improvement should not be limited to just fertiliser use, and fertiliser decision making needs further farmer education
- There is a need to ensure that independent sources of information on proper and efficient input use (eg. fertilisers, pesticides) are available
- Very important that contamination levels are decreased; this should start with proper training and education of farmers and pickers, and also requires that farmers are paid the proper price, that is they are rewarded for delivering cleaner cotton
- Neither Cotton Vision 2015 nor BCI specifically addressed the issues of:
 - capacity building
 - the use of indigenous materials as a way of reducing input costs by reducing reliance on more expensive, externally-sourced inputs
 - value addition
- There is a need to identify agro-ecological zones
- There is a need to consolidate existing research findings, and to then identify knowledge gaps that can be worked on
- There is a need to improve the system of input provision to better provide timely and appropriate levels of good-quality inputs (eg. fertilisers, planting seed, pesticides)
- There is a need to identify regions best suited to the production of organic cotton
- There is a need to provide better incentives for researchers working on cotton
- There is a need to focus on education generally in rural areas
- An awareness campaign that is 'uninfluenced' should be implemented that provides independent advice on issues, particularly pesticide use, clean cotton (especially training on how to pick 'cleanly') and the types of bags that should be used to minimise contamination
- The large gap between average yields of farms was highlighted. This was seen as indicating a) that there is definitely room to improve the overall average yield of the crop, and b) that work still needs to be done on improving the adoption levels of the technologies and methods that result in the higher yields. While some discussion focussed on farm-size being the determining factor in average yield – with small farms being viewed as being sub-economic – there was also discussion that rather than focussing on farm size there is a need to tailor the message for the type of farmer being targeted, especially for smaller farms; concern was expressed that extension often tries to push the same technologies to all farmers irrespective of their size. As not all technology solutions may be suitable for the small farmer, different approaches and technologies that take farm size into account may be required, i.e. site/size-specific technologies are required, as is done in China. An example given was that whereas in Pakistan all farmers are recommended to use a planter to sow the cotton, irrespective of field size, in China small farmers are encouraged to transplant seedlings using family labour.

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

In reply, from a Cotton Vision 2015 perspective it was noted that:

- Today's presentation was just that, a presentation;
- Cotton Vision 2015 as a formal document is still being finalised, and today's discussions will help to improve the final document
- The presentation was designed to show the broad framework of what is required to achieve the identified levels of production

In reply, from a BCI perspective it was noted that:

- While BCI is not in a position to fund primary research, BCI is very much interested in the outcomes of research, as it will be these outcomes that will underpin the definition of BCI (i.e. what is achievable) and provide the appropriate tools for farmers to grow Better Cotton
- While BCI is focussed on environmental issues, the ultimate success of BCI will depend to a large extent on the ability of BCI to link the production benefits with the environmental outcomes being sought, i.e. the production benefits of adopting a practice that is designed to also have positive environmental outcomes need to be clearly identified and stated — the economic and environmental issues are 2 sides of the same coin — and the presentations made provide confidence that this can be done
- BCI has developed social and economic principles, which while not discussed during the presentation on BCI, were included in the background material provided to participants

Technical Presentations

To set the scene for the technical deliberations scheduled for day 2, a range of technical presentations were made. These are briefly summarised below. A copy of the presentation slides is available from the Better Cotton website, www.bettercotton.org/?5.

Following all the presentations, the meeting participants were invited to ask questions of the speakers and the following points were made (these have been grouped by presentation, not in the order they were actually asked).

The effect of conservation technologies on water application and productivity of cotton

(Mr Abdul Hakeem Khan, International Water Management Institute)

An overview of efforts being undertaken by IWMI to compare the efficiency of different irrigation scheduling and irrigation methods (basin, bed and furrow, and drip), taking into account soil type, was presented.

Questions and comments

- It was noted that there would be challenges in having the current supply-based (waribandi) irrigation system reliable enough to cope with the fact that the suggested systems – bed and furrow, ridge and furrow, laser-levelled – whilst using less water overall, need a greater number of irrigations; may require restructuring, re-allocation of water etc.
- It was noted that bed-and-furrow is perceived as expensive (as is drip) and that the only benefit with it is that if there is rain at the time of sowing, then seed can be saved, but if there is no rain at sowing then sowing flat and hilling up after 30-40 days is better and saves an irrigation
- In response to a question about the effect of drip irrigation on the soil (given the need to flush salts through the soil profile) it was noted that one solution being tried involves using open tubes for water to allow the water (and salt) to be flushed through the profile (of course then negates some of the water savings from using drip!)
- It was noted that drip is not necessarily suitable in every situation – suitability will depend on soil type in particular.

Use of Neem in IPM Cotton

(Dr Ghulam Jilani, Deputy Director General, Institute of Plant & Environment, NARC)

A presentation on the results of trials undertaken using neem insecticide (*Azadirachta indica*).

Issues highlighted included:

- The impacts of pesticide misuse
- The contamination of food samples with pesticide residues
- Methods for preparing neem on the farm
- Results of using neem on key cotton pests
- Impact of neem on predators (beneficial insects)
- Detailed case studies (5) on neem use from 2000, including economic evaluations
- Recommendations on neem formulations required for various crops and target insects
- In response to a query as to why neem has not been more widely adopted given the results presented, it was suggested that this was due to lack of widespread knowledge about the

technology, and perhaps because it works quite slowly, and disrupts breeding rather than killing the insects outright

- Punjab has a system of technology development and technology distribution to farmers. If there is a new technology it can be included and if it is proved to be effective and “good” it is included in the training messages to the farmers. It was suggested that there may be an opportunity to collaborate and for neem to be included in this testing system
- It was confirmed that neem has been tested for its impact on beneficial insects, predators and parasites, and that it does not have the same affect on them as conventional insecticides

Questions and comments

- In response to a query as to why neem has not been more widely adopted given the results presented, it was suggested that this was due to lack of widespread knowledge about the technology, and perhaps because it works quite slowly, and disrupts breeding rather than killing the insects outright
- Punjab has a system of technology development and technology distribution to farmers. If there is a new technology it can be included and if it is proved to be effective and “good” it is included in the training messages to the farmers. It was suggested that there may be an opportunity to collaborate and for neem to be included in this testing system
- It was confirmed that neem has been tested for its impact on beneficial insects, predators and parasites, and that it does not have the same affect on them as conventional insecticides

Agriculture extension system in Punjab (current & future)

(Ch Ghaffar, Director General, Agriculture (Extension and AR), Punjab)

(both full and abbreviated versions available)

It was noted that Punjab has been trying different systems, and is now looking on FFS or ‘discovery-based learning, particularly as it seems to last longer.

The following general points were made:

- Agricultural extension systems require:
- Technology package development
- Farmer education and training
- Feed back and monitoring

Details were then provided on the above.

The recommendation is for a new system based on FFS (Farmer Field Schools):

FFS will be based on agro-ecosystem analysis, followed by group discussion and preparation of charts bet each group. These charts are then presented to the larger group of farmers. Open discussions and decision then follows the presentations.

This new approach is being started in 14 districts, including a number growing cotton and wheat: DGK, Lodhran, Bahawalpur and Vehari.

Questions and comments

It was confirmed that the extension system in Punjab will move to one focussed on using FFS

National Biotech Cotton Initiatives

(Dr Mehboob-ur-Rahman, National Institute for Biotechnology & Genetic Engineering, Faisalabad)

A comprehensive presentation was made covering the importance of introducing Bt cotton to Pakistan, and the current progress being made. Details covered include the structure of biotechnology research in Pakistan and the organisations involved, biosafety regulation, risk assessment research (especially regarding impact on non-target organisms, gene escape and soil health), field performance of transgenic crops (especially performance under drought and high temperature), future lines of investigation (eg. increased expression, gene-pyramiding, novel genes).

An action plan was highlighted which called for:

- Immediate awareness campaign on Bt/genetically modified cotton
- Science-based separate evaluation procedures to be adopted for field testing/release of Bt/GM varieties
- An expedition of the approval of Bt cotton
- To take prompt and necessary measures for legal release of Bt cotton in conformity with international and national rules

Questions and comments

- Extension has played a central role in the success of agriculture in Pakistan, but the introduction of transgenic cotton will bring new extension needs; this will require new training for frontier staff, and increased use of mass media information
- It was confirmed that the Bt gene used in the NIBGE program is a modified Cry I Ac
- It was also confirmed that they are investigating transgenic traits for drought and heat tolerance
- It was stated that the natural diversity of crops in cotton-growing areas means that farmers will not be required to grow a specialist refuge crop (for producing non-resistant moths to mate with potentially Bt resistant moths from the Bt crop); thus adoptability will be quite high
- In response to a question concerning persistence and effect of Bt being released into the soil, it was noted that studies on soil health had been conducted and that no adverse impacts had been found and that Bt was considered safe (it was also noted Bt is a soil-borne bacterium and is therefore already present in the soil)

Review of cotton production policies and guidelines and recommend reforms for sustainable cotton production in Pakistan

(Dr. Muhammad Ali Chang and Ch. Waheed Sultan Khan)

This review of existing production policies and guidelines was commissioned as part of WWF's Sustainable Cotton Initiative Project; the presentation was of the preliminary and draft findings and recommendations of the review. Points made included:

1. Pakistan could benefit from the recent liberalisation of the textile industry, PROVIDED productions costs are reduced, yields are improved and quality is improved
2. The yield gap between farmers – 40 maunds compared to 15 maunds per acre - was highlighted
3. A list of documents reviewed, including relevant legislation
4. An overview of Pakistani fibre quality characteristics, and the characteristics required by customers, and the pricing differences for Pakistan cotton due to the levels of contamination
5. A list of commonly found contaminants

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

6. Suggestions for minimising contamination
7. A list of environmental issues associated with cotton production
8. Social issues associated with cotton production
9. Recommendations, including:
 - amending various legislative and regulatory instruments, and exploring ways to bring about an earlier harvest (thereby reducing risk of insect attack, and to reduce trash levels)
 - strengthening of implementation of regulations through strengthened staffing
 - introduction of resistant varieties through genes from other plant sources
 - introduction of improved cleaning technology to gins
 - mandatory replacement of broken gin-stand saws
 - an improved marketing system

Questions and comments

- Recommendations on the proper picking handling and ginning of cotton are reviewed and updated regularly, in a process involving all stakeholders and provincial governments
- Cotton Control Ordinance was re-drafted and re-promulgated in 2002
There has already been a recommendation made to the provincial governments of Sindh and
- Punjab that bales should be marketed on the basis of grade and staple; it was suggested that this can be achieved by amending the relevant rules to require bales to be so marked; it was also suggested that there is no need to mark the variety on the bale if the grade is marked – grade is the aspect of economic importance
- 5 instrument testing facilities (to test fibre quality) have been established, with 5 more to be also established, to allow growers ginners and spinners to have their fibre tested
- Need to be clear what we mean we use the word contamination – as it means different things to different people
- However, these testing machines cannot test for contamination; this has to be dealt with by farmer education and an incentive based marketing system
- Issue of ensuring repeatability of HVI results across testing facilities/laboratories was noted; it was confirmed that the laboratories are involved with the international Bremen Fibre Institute/USDA 'round-robin' testing program designed to help ensure consistent results between laboratories
- One of the challenges and issues for the marketing system is that different stakeholders have different standards; uniform standards are therefore required, under one agency

Regarding the suggestion that use of Dropp and Round-Up be investigated to bring forward the harvest date it was suggested in turn that perhaps natural defoliants also be investigated to avoid reliance on imported chemicals (but it was noted that natural defoliants are quite rare)

Day 2 Overview

Following two further presentations on current work being undertaken in Pakistan cotton fields that are using the 'Farmer Field School' (FFS) approach for extension to farmers, day two was devoted to developing Pakistan-specific details of the Better Cotton definition.

Summaries of the presentations can be found below; the slides used are available at the same internet address as the slides from day one:

<http://www.bettercotton.org/?5>

Following the presentations on FFS, the meeting participants were divided into 4 groups, based on the proposed BCI principles (with each group asked to also consider the draft principle concerning conservation of natural habitats):

- ✓ Water quality and availability
- ✓ Safe and responsible pesticide use
- ✓ Soil health
- ✓ Fibre quality

An effort was made to ensure that meeting participants were allocated to the group reflecting their area of expertise, with participants able to choose the most appropriate group (details of participants in each group can be found as an Appendix).

Each group was provided with the relevant BCI principle, and the headings of the criteria proposed for that principle; a series of questions (common to each group) was then asked, as follows:

1. Are the listed criteria relevant for this principle in Pakistan?
2. Are there any other issues that are important for the principle that are not captured by the listed criteria?
3. What are the current best practices associated with each of the criterion?
4. What are the reasons for non-adoption of the recommended best practice?
5. Are there any practices associated with the criterion that you believe are essential to qualify for better cotton?
6. Are there any practices associated with the criterion that should disqualify as better cotton? (eg. use of particular pesticides)
7. What indicators are available to demonstrate the outcome sought under the criterion?

Each group was also asked the following question regarding the natural habitat principle, viz:

"Are there any management practices or policies, which relate to the issue of natural habitat destruction/habitat conservation/land clearing in Pakistan?"

The groups then reported back their answers to the full meeting. A transcription of the flip charts prepared by each group is provided as an Appendix. A complete description of each BCI principle, and the proposed draft criteria for that principle is provided before the summaries of the presentations of the working groups. A summary of the answers to the questions presented by each of the 4 working groups — including, as appropriate, BCI's response — precedes flip chart transcription and detailed report and answers presented by each of the working groups to the meeting.

Day 2 Presentations

Pakistan Sustainable Cotton Initiative

(Arif Mukhdum, Manager Cotton, Freshwater and Toxics Programme, WWF)

An overview of WWF's field work introducing better management practices, via an FFS approach, to cotton farmers. Better management Practices are defined by WWF as "Practices which are environmentally, economically and socially acceptable and meet the standards set for international trades of the commodities".

The overall aim of the project is to increase profit for farmers by having them use less pesticide, reduce health problems, reduce pollution and increase biodiversity through organising farmer groups, facilitators and farmer field schools, focussed on rationalising pesticide use.

Points made included a comparison between FFS and the traditional approach ("T&V"):

Features	T&V	FFS
Basic Philosophy	Instructions	Discovery based (Awareness)
Role of Farmers	Consume new knowledge	Decide themselves
Role of Trainers	Teach	Facilitate to find the solution of a problem by themselves
Duration	Continuous	Clearly limited
Perception by Farmers	Free Service	Belonging to a movement for which they are investing in terms of time and farm facilities
Approach	Top down	Bottom up

FFS is being promoted an appropriate extension methodology as:

- Only farmers can make the "right decisions" regarding crop management based on his own perceptions of economics and technologies.
- So farmers should be trained in decision making
- There are too many farmers (1.6 millions) and too few extension workers to be able to service them all
- A self multiplying training program for farmers need to be established
- Each cotton field is different in pest, beneficial and other requirements and therefore, cannot be treated on a generalized technology package message.
- Technologies requiring decision-making and management need skill transfer training.

BMP cannot be implemented simply by demonstration, field days, TV Ads, radio, publications etc

BMP's identified include:

- ✓ Optimising tillage operations
- ✓ Time of sowing
- ✓ Plant population
- ✓ Flat-furrow method
- ✓ Bed and Furrow
- ✓ Alternate row irrigation

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

- ✓ Water Scouting
- ✓ Nutrient management
- ✓ Integrated Pest Management
- ✓ Harvesting and Post-harvesting

Results from 3 years of fieldwork were presented graphically, noting the impact of FFS training (compared to no FFS) on a range of management issues, including:

- ✓ Frequency of pesticide application
- ✓ Number of irrigations
- ✓ Use of DAP and urea
- ✓ Profitability

Lessons learned include:

1. Widespread acceptance of this approach.
2. FFS membership should be based on actual practicing decision-making farmers.
3. Focus should be on experiential learning process.
4. Development and effective implementation of Integrated Communication Technologies (ICT)
5. Activities should be based on real localized issues.
6. Insect zoo activity should be based on “Discovery Learning Process” and attitude of just sharing the information should be avoided.
7. Discussion should always lead to trial development. Trials should always base on localized problems/issues developed through facilitation and participatory process.
8. Science and farmer component should be dealt more strongly to identify and develop simple and sustainable solutions of most of the common localized problems/issues

Community integrated pest management project in Punjab

(Muhammad Asif Khan, Project Manager, Community IPM Project)

The objectives of the project were to:

1. Organise the farming community under Training of Facilitators (TOF)/ Farmer Field School (FFS) of Facilitators (TOF)/ Farmer Field School (FFS) systems
2. Rationalizing pesticide use in project areas.
3. Preparation of farmers to comply with WTO obligations regarding pesticide residues
4. Increasing profitability through rational use pesticides
5. Reducing health hazards
6. Reducing pollution and Reducing pollution and increasing biodiversity

Targets for the project are to train 54200 farmers, via 2168 FFS, by the end of 2007/08 (This will require 42 Master Trainers and 755 Trained Facilitators).

A detailed overview of the FFS 'process' was presented, including the various topics covered during the TOF and FFS:

A. PRODUCTION TECHNOLOGY TOPICS.

Cotton agronomy and fertigation

How to take CESA.

Insect biology of different cotton pests, their mode of damage and different approaches to manage them

Insect biology of different natural enemies of cotton crop and their action.

Different chemical and non-chemical methods to manage cotton pests

Cotton picking its storage

Communication method

Facilitation skills

Insect zoos

B. SOCIAL TOPICS

Farmer's organization and their mobility.

Role of women in cotton production

Code of ethics while working with farmers.

Health hazardous caused due to pesticides

Objective oriented group dynamics and brainstorming

C. ECONOMIC TOPICS

Cotton marketing

Cost benefit ratio of cotton demo plots

Cotton production in WTO scenario Cotton production in WTO scenario

Details were also provided on:

- The health hazards of pesticides
- Field experimentation procedures, including examples of some of the experiments conducted
- Pink bollworm control

Achievements noted were:

- Improvements in farmers' knowledge levels
- Reduction in total sprays on FFS farmers' fields

Lessons learned were:

- ✓ Farmers become organized and confident due to:
 1. Working in groups
 2. Systematic working.
 3. Development of practical knowledge and skill.
- ✓ Decision making capacity of farmers increased due to:
 1. Observing the crop and field conditions regularly
 2. Live action of pest and predators
 3. Exchange of ideas through group discussion

Report of the First Technical Working Group Meeting of the Better Cotton Initiative

Held at the Central Cotton Research Institute, Multan Pakistan 13 – 14 February 2007

- ✓ Adoption level of farmers increased due to:
 1. Learning by doing
 2. Self involvement at each development stage of crop
 3. Belief on his own experience
- ✓ Minimized the environmental pollution due to:
 1. Decrease number of pesticide spray
 2. Conservation of natural enemies
 3. Awareness of safe pesticides and its application
 4. Awareness of health hazard of pesticides
- ✓ Production cost of crop decreased due to:
 1. Rationalized use of pesticides
 2. Balance use of fertilizer
 3. Judicial use of irrigation water
 4. Timely operation

Challenges to be overcome:

- ✗ Non availability of any incentive for member farmers
- ✗ Non issuance of valuable completion certificate
- ✗ No exchange visit of member farmers in FFS & Research Institute
- ✗ Preference of member farmers towards other activities
- ✗ Only small farmers participate.
- ✗ Lack of inputs for demonstration plots
- ✗ Lack of printing material for farmers
- ✗ Improper marketing system.

Questions and Answers

It was noted that:

- Not all of the data available was presented due to time constraints, and that further and more detailed statistical analysis of the results showing the impact of FFS in reducing inputs (pesticides, fertiliser and water) should be undertaken
- The need for data on biodiversity in and around cotton fields was highlighted; while the FFS project does have some information on the beneficial insects found as part of the FFS process, this is not being done in the manner of a scientific investigation

Working Session: BCI global principles and Pakistan Principles and draft Criteria

Each working group was provided with one of the four Better Cotton principles and the current draft criteria for that principle (boxed below) together with a common set of 7 questions (listed above in the overview of day 2 and also included in the summary of responses, below).

“Better Cotton is produced by farmers who care for the quality and availability of water” – proposed criteria

Efficient use (irrigation and rainfed) criterion

eg “Water use is optimised” (BMP’s for irrigation and rainfed water use efficiency)

Extraction criterion

eg “Water is extracted legally and at a sustainable level”

Water quality criterion

eg “Water courses and other bodies of water are protected from contamination by farming run-off”

“Better Cotton is produced by farmers who use pesticides safely and responsibly” – proposed criteria

Occupational Health & Safety

eg “Pesticides are applied by trained people wearing appropriate protective equipment”

Application criterion

eg “Only legally registered pesticides are applied, in appropriate conditions according to label directions and with well-maintained equipment”

Adoption of IPM criterion

eg “A formal IPM program is used to manage insects”

Pesticide choice criterion

eg “Pesticides with the lowest toxicity and persistence available are used wherever possible; over time total toxicity and persistence ‘factor’ is decreasing”

Criterion regarding restriction on certain types of pesticide ?

“eg No pesticides listed in the Stockholm (POP’s) or Rotterdam (PIC) conventions are used”

“Better Cotton is produced by farmers who care for the health of the soil” – proposed criteria

Soil management

e.g. “Soil management practices are used that maintain and enhance the structure and fertility of the soil”

Erosion management

e.g. “Cultivation practices are used that minimise erosion and its impacts”

Efficient fertiliser management

Eg “Fertiliser use is based on the needs of the crop”

“Better Cotton is produced by farmers who care for and preserve the quality of the fibre”– proposed criteria

Agronomic criterion

eg “Practices are adopted that maximise the fibre quality” (BMP’s relating to seed/variatal choice, plant spacing, defoliation)

Harvesting and handling criterion

eg “The cotton lint is harvested and managed to minimise the level of contamination”

“Better Cotton is produced by farmers who conserve natural habitats”

No criteria currently proposed for natural habitat conservation

A full transcription of the flip-charts used to document each group’s answers to the questions, and other comments made by the presenter of the group’s findings, as well as discussions that took place after the presentation (in italics) is included in the Appendices.

Summary of the answers to the questions

1. Are the listed criteria relevant for this principle in Pakistan?

All groups expressed the opinion that the principle was a relevant one, and that the criteria, as detailed for that principle, were relevant. These comments were made:

- The safe and responsible pesticide use group noted that plant protection could provide an alternative wording for the principle.
- The soil health group noted that soil erosion was not an issue of concern in Pakistan

BCI response:

The potential for re-phrasing the pesticides use principle to one focussing on plant protection was acknowledged, and it was noted that the term 'plant protection' is consistent with the other principles. It was also noted that pesticide use is a to-level subject, and that BCI considers it important to be seen to be explicitly addressing pesticide use. Further, it is to be stressed that the actual terminology of the principle is not going to affect what issues are actually addressed under that principle, via the criteria etc.

The criteria need to be applicable globally, and as soil erosion is a concern for many farming systems it is an important criteria for soil health; if soil erosion is not a major issue in Pakistan, then there should be no difficulty in comply with this aspect of soil health.

Regarding having precision agriculture as a criterion, it is suggested that it better defined as one of the tools (i.e. a best practice) available to help achieve the criterion

2. Are there any other issues that are important for the principle that are not captured by the listed criteria?

The fibre quality group suggested that an additional criterion was required to define better cotton, i.e. "a fair and equitable marketing system", while the soil health group suggested that precision agriculture should be added as a criterion

BCI response:

It was acknowledged that a payment system that rewards farmers for producing what the market wants is essential, so the need for a fair and equitable marketing system is something that BCI needs to be aware of. It was also noted that in order to keep the task of defining and implementing Better Cotton manageable, the definition of Better Cotton is currently restricted to on-farm activities, whereas the marketing system extends off-farm. This issue may be able to be considered in more detail under the economic or financial principle and criteria, which are still being developed.

3. What are the current best practices associated with each of the criterion?

See the transcriptions of the flip charts for a listing of the suggested BMP's for each criterion. An additional suggestion from the floor during the working presentations was that crop rotation be added as a best management practice for achieving a healthy soil. This was accepted by the soil health working group.

4. What are the reasons for non-adoption of the recommended best practice?

A range of reasons were provided, some general, and some quite specific to the issue in question. General reasons for non-adoption noted included:

- Shortage of time & resources (technical and financial)
- Lack of awareness
- Not seen as a priority to address
- Structural constraints related to land ownership and responsibility and the 'waribandi' water delivery system
- Economic issues, and in particular the pressure of short-term financial needs versus the longer-term needs of the farming system
- Non-availability of appropriate varieties

For the fibre quality principle, the lack of a quality based marketing system was seen as a major reason for non-adoption of quality-focussed BMP's, while for efficient water use, the lack of good drought tolerant varieties, and the supply-based water delivery system were seen as major impediments

5. Are there any practices associated with the criterion that you believe are essential to qualify for better cotton?

- A number of 'qualifying practices' were advanced:
- Growing cotton on properly laid out and levelled fields
- Application of water based on crop requirement
- Cotton that meets the need of the consumer
- A quality-based marketing system

6. Are there any practices associated with the criterion that should disqualify as better cotton? (eg. use of particular pesticides)

- 'Disqualifying' practices advanced were
- Use of granular pesticides
- 'negligence'

7. What indicators are available to demonstrate the outcome sought under the criterion?

A range of potential indicators were noted by each group, including:

- Cropping intensity (water use efficiency)
- Existence of appropriate rules and regulations
- Water quality testing results
- Visual soil assessment
- Laboratory soil assessment
- Crop response and yield (for organic matter levels)
- Profit margins (based on low levels of inputs and high levels of outputs)
- Market demand for cotton
- Movement of Pakistan cotton being quoted on B Index to A index

Next steps

The draft report will be provided to all participants as soon as possible for their comments before it is then finalized.

BCI will follow-up on the technical details highlighted by the working groups, especially BMP's and indicators, in order to more fully develop the list of potential BMP's and indicators for Better Cotton in Pakistan.

An on-line discussion forum will be developed by BCI to allow for the follow-up noted in 2. above, and for discussing any other issues raised by participants.

Once equivalent Technical Working Group meetings have been held in each of the other initial focus regions the proposed Better Cotton framework will be reviewed and adjusted as necessary. In particular, close attention will be paid to ensuring there is an appropriate division between the global wording and regional wording of the Better Cotton definition. Consideration will also be given to any suggested amendments to the global-level principles and criteria made by the regional Technical Working Groups.

This revised draft of the BCI framework (principles and criteria) will then be provided to all TWG participants.

A second Technical Working Group meeting will then be organised for Pakistan. Its broad aims will be to:

1. Review the amendments (if any) to the Better Cotton framework, and consider the implications for Pakistan
2. Consider in more detail the proposed indicators and BMP's
3. Begin to consider options for testing the draft definition of Better Cotton in the field in Pakistan

Appendix – Invitation letter

January 25,
2007

Sub: Better Cotton Initiative – First Technical Working Group (TWG) Meeting

Dear

WWF – Pakistan and Ministry of Food, Agriculture and Livestock (MinFAL) are planning to organize the first Technical Working Group (TWG) meeting of Better Cotton Initiative (BCI) on 13 - 14 February 2007 at Central Cotton Research Institute (CCRI), Multan.

The BCI is a collaborative process that aims to promote measurable improvements in the key environmental and social impacts of cotton cultivation (BCI brochure enclosed). The BCI aims to engage interested stakeholders to:

1. Define Better Cotton (environmentally, socially, and economically)
2. Develop corresponding performance-based and verifiable targets; and
3. Promote their implementation in order to reduce key social and environmental impacts.

The steering committee of BCI has decided to focus initially on small number of regions which include Pakistan, India, Brazil and West Africa. However, Pakistan is also the first country BCI is seeking to hold a TWG meeting with. Pakistan was chosen due to a number of reasons, including:

- The global importance of the Pakistani cotton industry both as a producer of cotton lint as well as cotton fabrics and garments
- The existence of the Pakistan Sustainable Cotton Initiative (PSCI), in collaboration with IKEA and WWF, two of the steering committee members of the BCI.

We also anticipate to organize two meetings in future: A second TWG meeting is scheduled in November 2007. The objective of the meeting would be to refine and integrate the outcomes of the first meeting held in Pakistan and meetings held in other countries. A third and final TWG meeting is scheduled to be held in December 2008 to agree on the definition of Better Cotton, and to finalize arrangements for field testing of the definition.

Appendix – Invitation letter

Outcomes of the meeting:

BCI would be seeking to achieve the following outcomes from the meeting:

- Identification of current recommended best practices for soil, water, pest and disease management
- Identification of constraints on adoption of Best Management Practices (BMPs) (financial and geographical), and of any ‘conflicts’ between practices
- Identification of priorities for field testing and validation of recommended BMPs and options for measuring the impact of adoption of the recommended BMPs

Detailed agenda will be shared later but it will include the following items:

- Overview of the Better Cotton Initiative,
- Overview of the Cotton Vision 2015 and possible implication for BCI,
- Overview of the current research and information on cotton by various cotton researchers through presentations to assist with the outcomes being sought,
- Presentations from WWF – Pakistan on the results of their cotton project and
- Discussions on the above, with a view to reaching the outcomes sought listed above

BCI will also cover the costs incurred by the participants of the meeting i.e. travel, boarding and lodging etc. Please confirm your participation to the undersigned by 2nd February 2007.

Hope to meet you soon.

Best Regards

Hammad Naqi Khan

Director

Freshwater and Toxics Programme (FTP)

Dr Muhammad Arshad

Director

Central Cotton Research
Institute

WWF – Pakistan
(CCRI), Multan

Appendix – Participants

Dr. Abdul Qadir Baloch	Agricultural Development Commissioner, Ministry of Food, Agriculture and Livestock, Islamabad
Dr. Ibad Badar Siddiqui	Vice-President Pakistan Central Cotton Committee (PCCC)
Dr Muhammad Arshad	Director, Central Cotton Research Institute (CCRI), Multan
Prof. Dr. Muhammad Ashfaq	University of Agriculture, Faisalabad
Dr. Ghulam Jilani	Deputy Director General, Institute of Plant and Environmental (IPEP), National Agricultural Research Centre
Liaquat Ali Khan	Joint Director, Pakistan Cotton Standards Institute (PCSI)
Ch. Abdul Ghaffar	Director General (retired), Punjab Agriculture Extension Department (PAD)
Dr. Noor-ul-Islam,	Director Cotton, Department of Agriculture Research, Punjab
Abdul Hakeem Khan	Head, International Water Management Institute (IWMI), Lahore, Pakistan
Dr Mehboob-ur-Rahman	Senior Scientific Officer, NIBGE, Faisalabad
Dr. Gul Muhammad Baloch	Cotton Botanist, Agricultural Research Institute, Tando Jam, Sindh
M Murad Dharajo	Director, Agricultural Extension, Major Crops, Sindh
Muhammad Asif Khan	Project Manager, Punjab Community IPM Project, Multan
Dr. Qurban Ahmed	Agricultural Engineer, AMRI, Multan
Zamir Ahmed Soomro	Deputy Director, PCRWR, Lahore
Khalid Mahmood	Deputy Director, Department of Agricultural Extension, Multan, Punjab
Dr Ahmed Ali Baloch	Director, CCRI, Sakrand, Sindh
Dr Zahoor Ahmad Baluch	Director, Research, PCCC
Munawar Ali Shah	Deputy Director (Agriculture Extension), Government of Punjab
Dr Shafqat Farooq	Deputy Chief Scientist, NIAB Faisalabad
Dr Jalal Arif	Associate Professor, UAF
Attaullah Khan	SSO/In-charge IPM Station, PARC, Multan
Dr. M Ahmad	Director, Plant Protection, PARC
Mr. Muhammad Iqbal	Senior Scientific Officer, CCRI, Multan
Suhail Ahmad Harral	President, Pakistan Cotton Ginners Association (PCGA)
Khawaja Muhammad Shuaib	Farmer Vision Forum
Bilal Israel Khan	Director, Farmers Association Pakistan
Dr Mohammad Ali Chang	Consultant, Prof (Rtd), Sindh Agriculture University, Tando Jam
Ch. Waheed Sultan Khan	Consultant, Director (Rtd), Cotton Research Institute, Faisalabad
Allan Williams	Technical Co-ordinator (Environment) BCI
Lise Melvin	Initiative Manager, BCI
Hammad Naqi Khan	Director, FTP, WWF - Pakistan
Dr Nasir Mehmood Nasir	Manager – Sugarcane, WWF - Pakistan
Arif H. Makhdum	Manager – Cotton, WWF – Pakistan
Shahjahan Ahmad	Agricultural Officer, Multan (Day 2 only)
Shahbab-ud-Din	SSO, CCRI Multan (Day 2 only)
Tariq Mahmood	SSO, CCRI Multan (Day 2 only)
Arshad Jamil Malik	SO, CCRI Multan (Day 2 only)
Ch. Rehmat Ali	SSO, CCRI Multan (Day 2 only)
Muhammad Rafiq	SSO, CCRI Multan (Day 2 only)
Zahid Iqbal Anjum	SSO, CCRI Multan (Day 2 only)
Dr M Iqbal Makhdum	Cotton Physiologist CCRI, Multan (Day 2 only)
Muhammad Sadiqui Zaki	SSO, CCRI Multan (Day 2 only)
Dr Dilbaugh Muhammad	Head, T-T-S, CCRI, Multan (Day 2 only)

Appendix – Agenda

Tuesday 13 February – Day 1

Time	Subject	Purpose / Content	Presenter	Prep. Documents
09:00-09:40	Welcome & Introductions	To open the meeting and get to know each other.	Dr Muhammad Arshad & Facilitator	List of Participants
09:40-10:00	Objectives & Agenda	To have a shared understanding of the purpose of this Technical Working Group meeting, and agree on how the day will proceed.	Lead Facilitator	Objectives & Draft Agenda
10:00-10:15	WWF Agricultural Programme	To introduce WWF's work on agriculture in Pakistan.	Hammad Naqi Khan	None
10:15-11:00	Cotton Vision 2015	To share & understand information on Pakistan's Cotton Vision for 2015 & action plan for implementation of this vision.	Dr. Ibad Badar Siddiqui	None
11:00-11:30	BREAK			
11:30-12:20	Better Cotton Initiative (BCI)	To share & understand information about the goals of BCI, the road map to reach these goals, the role of the Technical Working Groups & the global principles of Better Cotton.	Allan Williams	Road Map for BCI Role of TWGs Better Cotton Global Framework
12:20-13:00	Cotton Vision 2015 & BCI Working Together	To work in groups to identify the synergies & commonalities between Cotton Vision 2015 and Better Cotton Initiative in terms of goals and implementation ideas.	None	
13:00-14:00	LUNCH			
14:00-14:40	Cotton Vision 2015 & BCI Working Together cont ...	To share key discussions from the working groups with everyone, and summarise outcomes on synergies & commonalities.	Working Group presenters	None
14:40-16:00	Current & Relevant Research in Pakistan	To share understanding of current research being done in Pakistan that relates to: 1. Current recommended best practices for soil & water 2. Current recommended best practices for pest & disease management 3. Approaches of current extension systems & recommended future systems 4. Bt Cotton in Pakistan – an update 5. Review of Cotton Policies, Standards	<u>Presenters (15 mins each):</u> 1. Mr Abdul Hakim 2. Dr. Ghulam Jilani 3. Ch. Abdul Ghaffar 4. Dr. Yousaf Zaffar 5. Dr Chang & Waheed Sultan No preparation documents	
16:00-16:30	BREAK			
16:30-17:30	Current & Relevant Research cont ...	To discuss and understand the relevance and technical aspects of the research presented.	None	None
17:30-18:15	Wrap Up	To summarise outcomes of the day. To get feedback on each person's sense about how the meeting proceeded and provide each other with constructive feedback.		
20:00-21:00	DINNER - BBQ at CCRI			

Appendix – Agenda

Wednesday 14 February – Day 2

Time	Subject	Purpose / Content	Presenter	Hand Outs / Prep Documents
09:00-09:10	Agenda & Objectives for Today	To agree on how the day will proceed & remind ourselves of the objectives of this TWG meeting.	Lead Facilitator	
09:10-09:40	Results of Cotton Projects	To share results, experience & key learnings from: <ul style="list-style-type: none"> • WWF-IKEA Cotton Project • Punjab Cotton IPM Projects 	Arif Makhdum Muhammad Asif Khan	
09:40-10:00	What is Better Cotton in Pakistan? Introduction	<ul style="list-style-type: none"> • Overview of working session • Clarifications on working session 	Allan & Lise	
10:00-12:30 Break from 11:00 to 11:20	What is Better Cotton in Pakistan? Working Session	In working groups, to look at the Principles within the Better Cotton Global Framework and discuss and identify: <ul style="list-style-type: none"> • Principle of Soil – criteria / existing standard & best practices • Principle of Water – criteria / existing standard & best practices • Principle of Pesticides - criteria / existing standard & best practices • Principle of Fibre Quality - criteria / existing standard & best practices • Principle of Natural Habitats - criteria / existing standard & best practices 		Better Cotton Global Framework Template Questions Hand-out
12:30-13:15	LUNCH			
13:15-14:45	What is Better Cotton in Pakistan?	Working Group presentations & Discussion	Working Group presenters	None
14:45-15:15	What is Better Cotton in Pakistan? Conclusions so far	TWG identifies areas of: <ul style="list-style-type: none"> - Agreement - Needing further exploration - Disagreement 		
15:15-15:30	BREAK			
15:30-15:50	TWG Meeting 1 – Achievements & Next Steps	Summarise Outcome of Meetings / Agreed follow up / Actions	Allan / Chair	
15:50-16:00	Wrap up	Closing & Celebration Hand in evaluation forms	Lead Facilitator	

Appendix – Flip chart transcriptions and comments Day 1

Group 1

Environmental Factors

- High temperature and humidity
- Judicious use of pesticides
- Soil improvement
- Rationale use of fertilizers
- Specific areas for organic cotton
- Water

Awareness Campaign

- FF School
- Clean production
- Handling
- Appropriate price

Group 2

Global Principles		
	BCI	Cotton Vision 2015
Maintain the quality & availability of water	Y	N
Use pesticides safely and responsibly	Y	IPM
Care for the health of the soil	Y	N
Care for and preserve the quality of the fibre	Y	Clean and better fibre
Preserve natural habitats	Y	N
Yarn recovery	N	Y
Support price		Y
Standardisation and grading		Y
Issues on marketing		Y

Appendix – Flip chart transcriptions and comments Day 1

Group 3

Similarities

- More economic and environment friendly
- To minimise the degradation of natural resources (through insecticides, fertiliser and tillage)
- Less health hazards
- Adoption of ICM (IPM)
- Welfare of farmers community
- International grading and marketing
- Sustainable agronomic and cotton production

Dissimilarities

- BCI – not force the farmers to adopt a particular technology
- V 2015 – we are asking companies to transfer their technology
- BCI – not focus on research
- V 2015 – more focus on research

Missing

- Water management component
- Farmer capacity building
- Use of indigenous material
- No value addition in BCI

Group 4

Cotton Vision 2015 and BCI

Similarities (Almost identical)

- Consolidation of existing research and identification of missing links
- Doesn't cover the totality of the area
- Agricultural education
- land reform concern with special reference to land holding
- gap in b/w potential/average yield
- a system for the provision of quantity, quality and timely inputs
- identification of regions/zones for organic cotton production
- farmer friendly
- international marketing/spot price
- better incentive to agricultural researchers/scientists
- lack of financial assistance
- water availability and irrigation management
- lack of monitoring and evaluation

Appendix – Flip chart transcriptions and comments Day 2

Water quality and availability working group

Members

Dr Zamir Soomro
Dr. Anjum
Dr Mohammad Ali Chang
Hammad Naqi Khan
Muhammad Asif Khan
Shabab Ud Din
Dr Dilbagh

Answers to Questions

- 1 Are the listed criteria relevant for this principle in Pakistan?
Quite relevant
- 2 Are there any other issues that are important for the principle that are not captured by the listed criteria?
Not really

- 3 What are the current best practices associated with each of the criterion?

Criteria 1 – Efficient Use – Water use

- 1.1 **Lining of water courses**
- 1.2 **Improvement of water courses (maintenance of proper bed slope, desilting, removal of buses, etc**
- 1.3 **Farm layout and leveling**
- 1.4 **Method of cultivation for efficient use of water (B&F, R&F, Drip, sprinklers, etc.)**
- 1.5 **Application of irrigation water as per crop requirement**
- 1.6 **Introduction of drought tolerant varieties**

Criteria 2 –Extraction – Water is extracted legally and at a sustainable level

- 2.1 **Development & implementation of Water (in particular Groundwater) extraction laws/rules. *As there are no groundwater protection laws, best practice is to implement extraction laws and rules***
- 2.2 **Qualitative & Quantitative assessment of gw/sw resources *(i.e. type of aquifer, potential of the groundwater)***

Criteria 3 – Water Quality – Water courses & other bodies of water are protected from contamination by Farming run-off

- 3.1 **Efficient drainage system along with irrigation system**
 - 3.2 **Granular pesticides should be avoided**
 - 3.3 **Enforcement of NEQS/Env laws re industrial effluents and sewage**
- 4 What are the reasons for non-adoption of the recommended best practice?
- 1.2 **Shortage of time & resources**
 - 1.3 **lack of awareness & Tech. & Fin. Resources**
 - 1.4 **Supply-based irrigation system**
 - 1.5 **Non-availability of proper drought tolerant/efficient root system varieties**
 - 2.1 **Rules not developed so far**

Appendix – Flip chart transcriptions and comments Day 2

2.2 Lack of resources for quantitative assessment

3.1 Lack of resources and non Priority

3.2 Non-priority and lack of resources and political will

5 Are there any practices associated with the criterion that you believe are essential to qualify for better cotton?

1.3 & 1.5 (*Farm layout and levelling and application of irrigation water per crop requirements*)

6 Are there any practices associated with the criterion that should disqualify as better cotton? (eg. use of particular pesticides)

3.2 (*use of granular pesticides*)

7 What indicators are available to demonstrate the outcome sought under the criterion?

Cropping intensity V/s water supply (*measure of optimal efficiency*)

Documents of Legal framework

Water quality testing

8 Habitat protection: Are there any management practices or policies, which relate to the issue of natural habitat destruction/habitat conservation/land clearing in Pakistan?

Provincial wildlife and forests acts

Protected areas have been declared

Noted that protected areas exist, i.e. areas established under legislation that are protected from agriculture, mining etc.

Comments

A point of clarification: did the question about the existence of habitat protection policies relate to only cotton growing areas specifically, or Pakistan generally?

Answer: Both important for BCI to understand

It was noted that there are no laws restricting or governing the use of brackish water for irrigation; in reply it was further noted that the irrigation department issues certificates as to fitness of the water for irrigation and that facilities are available to test irrigation water quality, and that water quality is dealt with by the extension agents

Appendix – Flip chart transcriptions and comments Day 2

Soil Health working group

Members

Dr Zahoor Baloch
Muhmmad Murad Dharejo
Dr. Gul Muhammad
Dr Shafqat Farooq
Bilal Israel Khan
Dr Nasir Mehmood Nasir
Mr Zaki

1. Principle: for good soil health:

- i) sufficient organic matter: not less than 1%
- ii) pH not greater than 7.5

2. Criteria:

- i) Organic matter management
 - a) green manuring
 - b) FYM (farm yard manure)
 - c) fermenting techniques
- ii) pH
 - a) H₂SO₄ commercial
 - b) gypsum (rock and powder)

3. Tools

For organic matter management:

- i) Chopper behind combines for easy incorporation of straw into soil. Urea must be used for quick decomposition and prepd g. manure
- ii) Slasher/rotation of cotton sticks

For pH management:

- iii) Recommended practices for using acidic additives

4. Indicators

Visual observation
Lab. Analysis
Crop yield/low inputs

II. Principle: Soil erosion

Not a problem in Pakistan

III Principle: Efficient fertiliser management

Criteria

- a) chemical
- ii) biological

Appendix – Flip chart transcriptions and comments Day 2

3. Tools

a) For chemical:

- i) Judicious use (after soil analysis – micro and macro)
- ii) Foliar sprays of fertiliser should be incorporated

b) For biological:

- i) FYM
- ii) Fermentation methods
- iii) leguminous crops

4. Indicators

- i) Visual examination
- ii) Soil analysis (Lab)
- iii) Crop response (germination, vegetative growth, yield)

BMP: as explained above

Answers to questions:

Are the listed criteria relevant for this principle in Pakistan?

Yes

Are there any other issues that are important for the principle that are not captured by the listed criteria?

Precision agriculture

What are the current best practices associated with each of the criterion?

Mentioned in goals/tools

What are the reasons for non-adoption of the recommended best practice?

Straw/stick: economic

FYM (Pathis): social (shortages vs. land)

Are there any practices associated with the criterion that you believe are essential to qualify for better cotton?

Precision agriculture

Are there any practices associated with the criterion that should disqualify as better cotton? (eg. use of particular pesticides)

- i) **Excess of inputs**
- ii) **Negligence**
- iii) **Avoid tube well irrigation**

What indicators are available to demonstrate the outcome sought under the criterion?

Low quantity of input

High quantity of output

ie spending less and making more

Habitat protection

Appendix – Flip chart transcriptions and comments Day 2

Exists generally, but not for cotton areas specifically

Yes: Birds in cotton field; none due to pesticide (big loss of biological control)

Comments

It was noted that cotton slashers are available that do not require the cotton stalks to be cut the stalks first

It was suggested that crop rotation be added to the list of best management practices; this was accepted (a suggested crop rotation: sowing wheat in November, harvest in May, May to July fallow, with perhaps a short-season mung bean crop (from 56 to 90 days possible) then sacrifice it before planting rice. Planting sesbania before wheat is also an option if there is sufficient time)

It was suggested that a disqualification based on negligence is too general; rationale for including it is that cotton growing requires vigilance

There was some discussion as to whether there is (or even can be) erosion on developed farms – a distinction was drawn between developed farms and the natural environment (no was attempt to definite erosion was made)

The need to control diseases that remain in the cotton stalks was highlighted; it was clarified that the practice of incorporating cotton stalks should only be undertaken with uninfected plants

Question was asked how can organic matter be level be raised to 1%: compost – but needs to be done continuously; if organic matter is harvested from the soil it should be returned to the soil

Question regarding pH: most cotton soils have a pH of around 8; how can it be reduced to 7.5? Commented that cotton can survive in a pH of 8 OK

Safe and responsible pesticide use working group

Members

Dr. Ahmad Ali Baloch
Dr Rana M Ishfaq
Arif Makhdum
Mr Rafiq
Mr Tariq
Dr Jalal

PLANT PROTECTION

Plant protection is a whole season pro-active, harvest approach to manage pests. The approach incorporates whole of farm and is year round recognising that decisions and field operations are conducted throughout the year which an affect pest management.

IPM involves the intelligent selection and integration of best practices in a compatible manner which is ecologically sound, economically viable and socially acceptable

IPM – not a control measure, but a strategy

Principles (broad goals we hope to achieve)

The management of pest populations with the aim of reducing insecticide use while maintaining profitability, quality and yield of cotton

Appendix – Flip chart transcriptions and comments Day 2

Criteria

Selection of treatments

Choose strategy which is:

Least disruptive to natural control

Least hazardous to human health

Least toxic to non-target organisms

Least damaging to general environment

Most likely to produce a permanent reduction in environmental ability to support pest

Most cost effective

Identification of major useful and harmful organisms of cotton crop

Economic levels of infestation

Alternate host plants

Existing status of biological equilibrium

Establishment of status of various pests

Tools

1. Agricultural Education (curriculum, FFS)
2. All components of IPM
 - a) cultural control: destruction of crop remains, alternate host plants, ploughing, tillage etc.
 - b) mechanical control: hand picking, mechanical exclusion, traps
 - c) physical control: light traps
 - d) biological control: predators, parasites, pathogens
 - e) genetic control: sterile male techniques
 - f) chemical control: biopesticides, selective pesticides
- 3 Integrated communication technology (print and electronic media)
- 4 Demonstrations: Exhibitions, farmer day celebration, model villages establishment
- 5 Biodiversity conservation

Implementation Strategy

IPM always starts with the farmer practices which usually has a certain element of it, improvement may start with single control measure in line with IPM Philosophy, planting resistant variety, use of insecticides based on pest scouting with improved knowledge of agro-ecosystem. More measures can be modified, identified and applied

1. Education: Through revision of:
 - i) Curriculum at secondary level
 - ii) Strengthening the FFS
2. Steps to enforce IPM:
 - i) To scout cotton crop
 - ii) agro-ecosystem analysis
 - iii) To know the pest
 - iv) To know the beneficial fauna
 - v) To establish the economic level of pes
 - vi) To identify the control measures compatible with the strategy

Appendix – Flip chart transcriptions and comments Day 2

- vii) To go for chemical control as last resort, bio-pesticides – selective pesticides (use of correct pesticides, correct dose, correct timing, correct timing with protective gear)
 - viii) Participatory Technology Development (PTD)
- 3. Integrated communication, through:
 - a) Print media – posters – pamphlets – articles
 - b) Electronic media – establishment of regional radio station, television
- 4. Demonstration
 - a) Exhibition
 - b) Regional help line
 - c) Establishment of model villages
 - d) Farmers day celebration on critical stages of the crop
 - e) provision of one window for timely and quality input at Union Council level (Resource Centre)
- 5. Biodiversity Conservation
 - a) Judicious use of selective pesticides, if required
 - b) creating awareness about the useful flora and fauna among the farming communities through all sources cited above
 - c) conservation of natural enemies through introduction, augmentation and importation of friendly fauna

Indicators

The method employed within an IPM programme must be organised through a comprehensive monitoring and evaluation system and decisions to take action must be based on judgment of the amount of economic damage, the problem pest is likely to cause:

- 1. quality of producers
- 2. cost benefit ratio
- 3. yield of the cotton crop
- 4. capacity building (knowledge based decision making process)
- 5. use of pesticide/water use data of an area

Some examples of IPM Intervention in Pakistan

- Establishment of protocol for vital predator and parasites (chrysoperla, trichogramma, bracon)
- Development of various mechanical devices for the control of nocturnal insects, eg. light equipped power insect killer
- Hairy varieties against jassid
- Destruction of leftover bolls for pink bollworm
- Mating disruption techniques for PBW
- Ploughing of field for hibernating pupae of ABW and armyworm
- Pest scouting based spraying
- Focussing role of beneficials
- Hand picking for red cotton bug, dusky cotton bug
- Water spraying for the control of whitefly adult

Removal of crop remnants for the control of PBW etc.

Appendix – Flip chart transcriptions and comments Day 2

Comments

IPM can also stand for Integrated Profit Margin

Issue of problems associated with introduction of ?non-smooth-leafed (glabrous) Bt varieties raised: cause problems with sucking pest and mealy-bug control; this in turn is causing fibre-quality problems

Need for farmer education on the specific impact of pesticides was emphasised (rather than just relying on receiving a bottle to spray); such education would help farmers choose pesticides that target a single pest, rather than using broad-spectrum (and generally more toxic and persistent) pesticides that will also disrupt the population of beneficial insects

Fibre quality working group

Members

Dr. Ibad Badar Siddiqui
Muhammad Arshad
Liaquat Ali Khan
Ch. Waheed Sultan Khan
Dr Mehboob ur Rahman
Ch Rehmat Ali
Mr Arshad Jamil

Better Cotton:

- Acceptable to end-users
- Economically viable

Criteria:

- agronomy
- handling
- quality-based marketing

Preservation of habitat

- PGRI PARC
- Wildlife Conservation Department

Answers to questions:

Are the listed criteria relevant for this principle in Pakistan?

Relevant but inadequate

Are there any other issues that are important for the principle that are not captured by the listed criteria?

Acceptability to the end user

What are the current best practices associated with each of the criterion?

Agronomy – **choice of variety**

Harvesting – **picking, handling, ginning** (*details exist, not listed due to time*)

What are the reasons for non-adoption of the recommended best practice?

Absence of quality based marketing system (*especially lack of payment based on grade and staple length*)

Appendix – Flip chart transcriptions and comments Day 2

Are there any practices associated with the criterion that you believe are essential to qualify for better cotton?

Quality based marketing

Are there any practices associated with the criterion that should disqualify as better cotton? (eg. use of particular pesticides)

No

What indicators are available to demonstrate the outcome sought under the criterion?

Market demand due to enhancement of quality; move of Pakistan cotton from B Index to A Index³

Habitat protection

Exists generally, but not for cotton areas specifically

Yes: Birds in cotton field; none due to pesticide (big loss of biological control)

Comments

It was highlighted during the presentation that Pakistan produces a good upland cotton that is on par with any other cotton in the world, but that it is not receiving the intrinsic value, mainly due to poor management practices affecting fibre quality and a marketing system that is not based on rewarding quality

The group emphasised that from a fibre quality perspective, Better Cotton may be defined as "Is the cotton acceptable to the end user and economically viable to the grower?"

Good information on appropriate cotton-picking and handling procedures do exist, but the current marketing system does not provide the incentive to adopt the practises that have been developed and recommended (for example, no-one currently buys cotton based on staple length)

Thus the best indicator for successful achievement of the fibre quality component of the definition of better cotton is market demand, which would be reflected in having Pakistan cotton move from being quoted on the B-Index to being quoted on the A-Index.

Pakistan Cotton Standards Institute was set up to establish seed cotton grades and lint cotton standards; it was confirmed that 'on-the-spot' quality testing is available, at 50 Rp per sample (reduced from 150 Rp); Government institutions pay a bit more.

An additional presentation was made by Mr Liaqat Ali Khan on contamination. The following points were made:

Contamination needs to be defined clearly and broadly, and from the textile point of view – anything that is not cotton lint, so includes not only foreign matter contaminants like jute, hessian, polypropylene, hair etc., but also includes non-lint parts of the cotton plant like bracts

³ The CotLook Indexes are intended to be representative of the price level on the international raw cotton market with the Cotlook A-Index being the average of the cheapest five quotations from a selection (currently 19) of the main upland cottons traded internationally (with a base quality of middling 1-3/32") and the Cotlook B-Index being an average of the cheapest three quotations (of 9) for "Coarse Count" cotton commonly in use for spinning coarse count yarn (base quality strict low middling 1-1/32")

Appendix – Flip chart transcriptions and comments Day 2

Ginning operation is fundamentally the same as US, Australia, but Pakistan cannot copy some of the technologies used in those advanced gins, such as pre-drying the cotton so that it can be cleaned properly (wet cotton cannot be cleaned, and some cotton is at 15-20% moisture level when it arrives at the gin – and as there is no system for a premium to be paid for cotton at the right moisture, little can be done to ensure that the cotton is delivered at a moisture level that allows for good cleaning)

Appendix – Evaluation and feedback

Evaluation Form – Technical Working Group Meeting 1, Multan, Pakistan

1. Your Information

(If you prefer to be anonymous please leave this blank)

Name **RESULTS – 21 evaluation forms handed in.**

Organisation

2. Feedback on Technical Working Group Meeting 1

(Please explain your answer 'yes or no' to the following questions)

Was the content of the meeting relevant for the discussions?

Everybody answered this question with “Yes”, some added “very good”, one person said only 80% was relevant.

Was the format of the meeting (presentations / plenary discussions / working sessions) suitable for the meeting?

Everybody answered this question with “Yes”, somebody especially named the Working Session

Was the facilitation appropriate for this meeting?

Everybody, except one person (but he did not answer the questions properly) answered this question with “Yes”, few added “excellent” or “very good”.

What did you particularly like about this meeting?

A couple of people named the following aspects:

- **Vision 2015 Discussions**
- **Group Works**
- **Discipline**
- **Agenda, good planning**
- **Active participations of the participants**

Presentations

Single people named these aspects:

- **water related issues**
- **Learning more about cotton**
- **Presence of scientists**

What would you suggest should be done differently in the next meeting?

Two persons referred to the meeting time: one only wanted one day and the other only 6 hours per day.

Other suggestions: Discussion of irrigation systems (Sprinkler, Drip System), Information material should be send to the participants and early enough for preparation

Appendix – Evaluation and feedback

time, More time for presentations

Presentation to the situation in the area and on biodiversity in cotton, All stakeholders should participate on the meeting, There should be facilitators for each working group

3. Next Steps for the Technical Working Group

Do you intend to participate in the second Technical Working Group meeting?

All intend to participate again, 2 persons said if they are available

If yes, what do you hope to discuss and achieve in the second meeting?

Mentioned more than once:

- *Marketing of cotton (on international markets, so it helps Pakistan)*
- *Implementations tools*
- *Clear understanding of Better Cotton in Pakistan / from the farmers*
- *How to achieve objectives to have Better Cotton*

Mentioned once:

- *Efficient water use*
- *Ground level planning*
- *Development of DPM (?IPM)*
- *Quality of cotton fibre*
- *Feedback from other TWG's and their relevance in the local context*
- *I.P.M. modules for individual insect pest and an IHM package for cotton in Pakistan, matters related to organic cotton and its management/marketing.*
- *Cotton Policies, Standards in View of BCI, Cotton Vision*
- *Biodiversity in Cotton beyond 2020*
- *Research part*

Interest safeguarding measures particularly for growing community

Are you interested to participate in an on-line discussion forum hosted by HYPERLINK "http://www.bettercotton.org" www.bettercotton.org to exchange ideas and experience between Technical Working Group participants on Better Cotton?

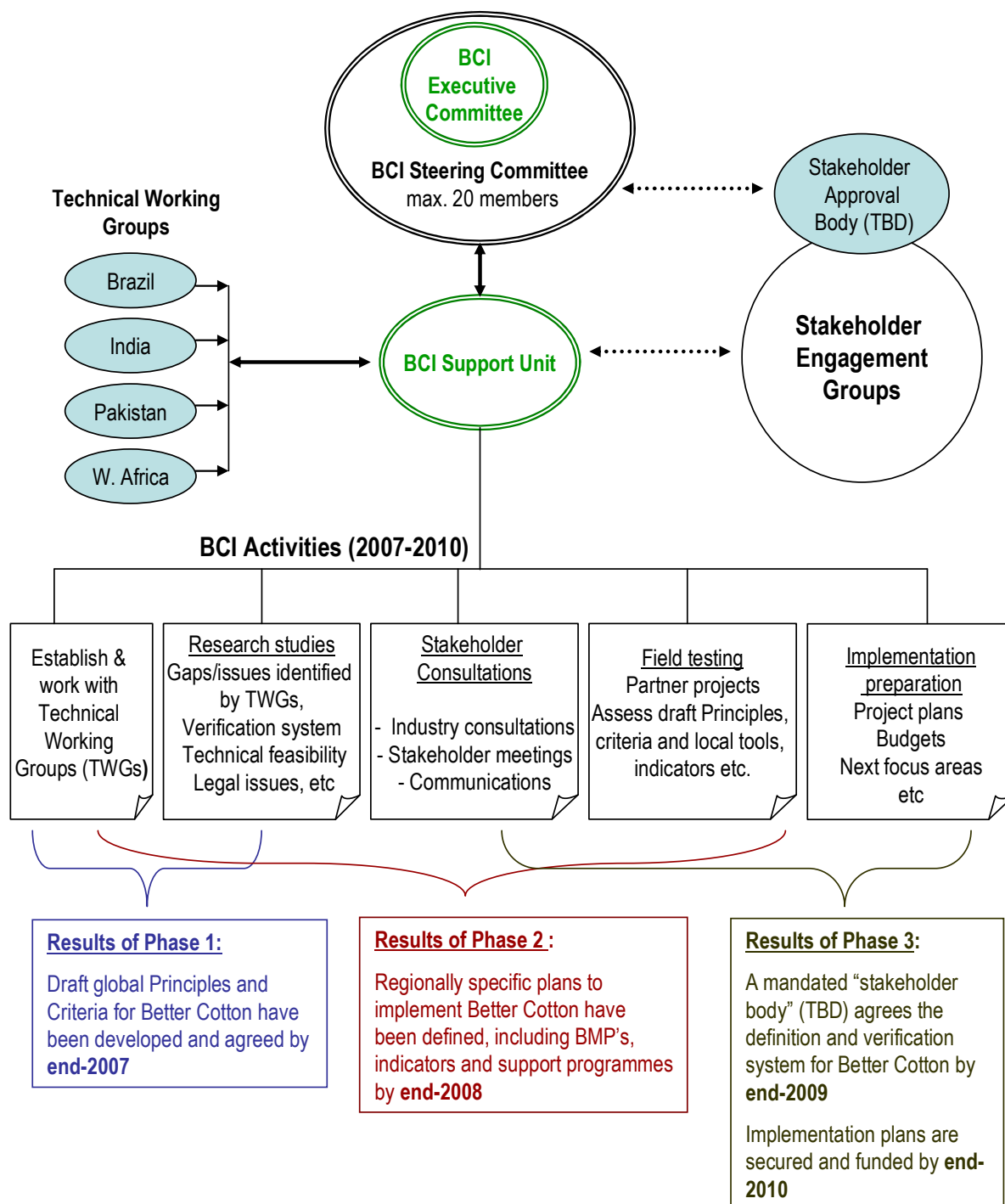
Only 4 people are not interested in an on-line discussion forum

If yes, please provide your email address below

Appendix – Background information

Supporting Documentation

BCI Road Map



The Role of Technical Working Groups in BCI

Introduction

The Better Cotton Initiative operates under a number of guiding values, including:

- Better Cotton will be defined globally, in a way that also allows regional characteristics and differences to be taken into account.
- Recognition of the wide range of, and geographically different, issues connected with cotton cultivation.
- Recognition that the impacts of cotton farming will vary from farm to farm and region to region, and that the ability to reduce those impacts will also vary.
- Desire to be an open, inclusive and collaborative process committed to engaging stakeholders in a constructive dialogue to define, develop and encourage the implementation of Better Cotton.
- Desire to promote measurable improvements in the key environmental and social impacts of cotton cultivation

A natural consequence of these values is that the process of defining of Better Cotton needs to:

- Collaborate with the regions in which BCI is initially seeking to work to ensure that regional and local issues are considered when developing the definition of Better Cotton
- Consult with people who have detailed technical expertise in each of the areas covered by the BCI principles in the regions.

The role of Technical Working Groups

Therefore the initial development of the definition of Better Cotton will be undertaken by Technical Working Groups from each of the initial four focal countries / regions (Pakistan, India, Brazil and West Africa).

Each Technical Working Group will meet separately and provide advice & recommendations on:

- What are the major criteria of the identified principles for that region (eg. under the principle of soil health, criteria could include soil management, erosion management and fertilizer management)
- Relevant tools (better management practices) that are appropriate for that region for each of the identified criteria
- Indicators that could be used to demonstrate the outcome sought as described by the criteria?
- How relevant tools (better management practices) are best shared with cotton farmers to enable cultivation of Better Cotton.
- Options for testing whether these criteria and better management practices are practical and achievable, and have the desired effect of improving the economic, environmental and social sustainability of cotton farming.

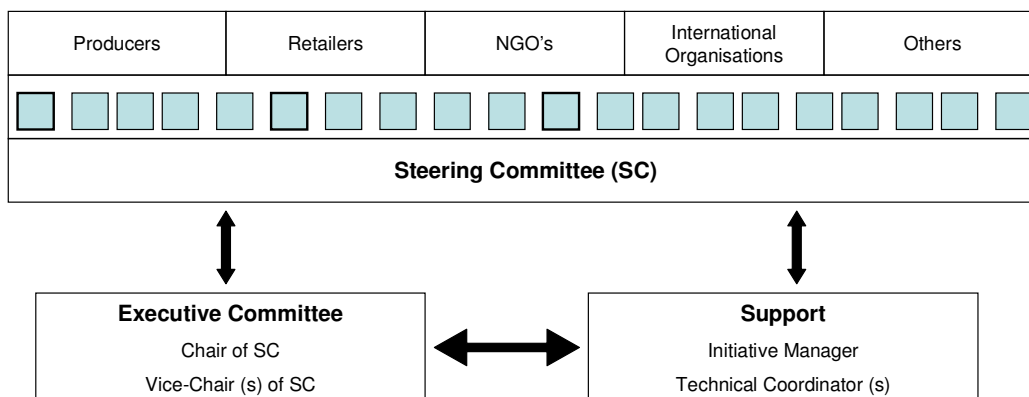
Technical Working Group meetings

It is currently anticipated that each Technical Working Group will meet 3 times:

1. Meeting 1 to focus on introducing BCI and identifying the major relevant elements, indicators and better management practices (BMPs), and the BMP's most in need of testing, field validation
2. Meeting 2 (after meetings are held in other regions) to refine definition of Better Cotton and begin work on identifying ways of testing the draft definition
3. Meeting 3 to agree on the final draft definition to be used in the testing phase and further work on testing of definition

Better Cotton Initiative – Current Steering Committee

The Role of the Steering Committee



The task of the Steering Committee (SC) is to ensure that BCI has a clear strategic direction and an adequate policy to successfully achieve the goal of developing and implementing “Better Cotton”. The composition of the SC shall represent all relevant sectors and key actors necessary to achieve the mission of BCI. The number of SC members must not exceed 20, with a maximum of 5 seats held by each stakeholder group including, but not limited to, producers, retailers, NGOs, & international organizations.

The specific roles of the SC are:

- All policy, strategic guidance, and governance related decisions
- Representation and communication
- Management performance review and oversight
- Financial oversight and remuneration

Current Steering Committee Members

Currently, representatives from adidas, Gap Inc., H&M, ICCO, IKEA, Organic Exchange, United Nations Environment Programme, and WWF, make up the BCI Steering Committee.

All companies involved in the Steering Committee have a long history of collaboration on corporate social responsibility issues, working with stakeholders to come up with meaningful and sustainable solutions that benefit the workers, communities & environment impacted.

adidas

For over 80 years the adidas Group has been part of the world of sports on every level, delivering state-of-the-art sports footwear, apparel and accessories. Today, the adidas Group is a global leader in the sporting goods industry and offers a broad portfolio of products.

Our vision is for everyone in the Group and the supply chain to share a common set of values and to follow responsible business practices. As well as improving working conditions in suppliers’ factories, being responsible also means:

- Reducing the environmental impacts of our operations
- Caring for the welfare and development of our employees
- Making a positive difference to people in the communities where we operate.

<http://www.adidas-group.com/en>

Gap Inc.

Today, Gap Inc. is one of the world's largest specialty retailers, with more than 3,000 stores and fiscal 2005 revenues of \$16 billion. We operate five of the most recognized apparel brands in the world — Gap, Banana Republic, Old Navy, Forth & Towne and Piperlime.

To us, being socially responsible means striving to incorporate our values and ethics into everything we do – from how we run our business, to how we treat our employees, to how we impact the communities where we live and work. Our Commitments:

- Improving Factory Conditions
- Caring for the Environment
- Investing in Communities
- Supporting Our Employees

<http://www.gapinc.com>

H&M

H&M was established in Sweden in 1947. Today H&M sells clothes and cosmetics in more than 1,300 stores in 24 countries. The business concept is "Fashion and quality at the best price".

At H&M, quality is about more than making sure that our products meet or exceed our customers' expectations. It also means that they have to be manufactured under good conditions and that our customers must be satisfied with us as a company. Taking responsibility for how our operations affect people and the environment is also an essential prerequisite for H&M's continued profitability and growth.

<http://www.hm.com>

ICCO

ICCO's (Inter-church organisation for development co-operation) mission is to work towards a world where poverty and injustice are no longer present.

ICCO's work consists in financing activities which stimulate and enable people, in their own way, to organise dignified housing and living conditions. ICCO is active in countries in Africa and the Middle East, in Latin America and the Caribbean, and in Asia, Oceania and Eastern Europe.

ICCO is one of the six co-financing organisations in the Netherlands and for performing its duties it receives about 120 million Euros from the Dutch and European governments, and from organisations participating in ICCO. ICCO is accountable to politicians and society for the way in which these moneys are spent.

<http://www.icco.nl>

IKEA

IKEA sells low-price products, including furniture, accessories, bathrooms and kitchens at retail stores around the world. While our core business is the selling of home furnishings, we also develop and purchase IKEA products in relationship with suppliers.

IKEA wants its products to have the minimum possible impact on the environment. And for these products to be manufactured in a socially responsible manner.

<http://www.ikea-group.ikea.com/corporate/>

Organic Exchange

The Organic Exchange is a non-profit organization committed to expanding organic agriculture, with a specific focus on increasing the production and use of organically grown fibers such as cotton.

Our ten year goal is to secure commitments from leading retailers and brands to use organic cotton in amounts equaling 10% of global cotton production. By making this commitment, companies support organic farmers who build soil quality, enhance biodiversity and protect the air and water on which we all depend. In addition, these brands and retailers give their customers the opportunity to look good, feel good and do good at the same time. To support these efforts, we bring together brands and retailers with their business partners, farmers and key stakeholders to learn about the social and environmental benefits of organic agriculture, and to develop new business models and tools that support greater use of organic inputs.

<http://www.organicexchange.org>

United Nations Environment Programme

UNEP's mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

UNEP's priorities, as adopted by the fifth special session of the Governing Council, are: environmental monitoring, assessment, information and research including early warning; enhanced coordination of environmental conventions and development of environment policy instruments; freshwater; technology transfer and industry; and support to Africa.

UNEP participates in BCI through the Division of Technology, Industry, and Economics.

<http://www.unep.fr/en/about/index.htm>

WWF

Established in 1961, WWF operates in more than 100 countries working for a future in which humans live in harmony with nature.

Their mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.

<http://www.wwf.org>

Better Cotton Global Framework – A Starting Point

A Global Framework – How it is formulated

Principle	Beneficiary	Criteria	Tools	Implementation Strategy	Indicators
<i>Broad goal which we hope to achieve (high level 'what')</i>	<i>Target group for which tools will be provided and criteria will be applied (target group of persons to benefit)</i>	<i>Key elements that must be met to achieve principle ('detailed what')</i>	<i>Tools and resources that farmers can use to meet criteria</i>	<i>How tools and/or resources will be provided to farmers</i>	<i>Measurements used to indicate whether criteria are met</i>

Global Environmental Principles

Better Cotton is produced by farmers that maintain the quality and availability of water

Better Cotton is produced by farmers that use pesticides safely and responsibly

Better Cotton is produced by farmers that care for the health of the soil

Better Cotton is produced by farmers that preserve natural habitats

Better Cotton is produced by farmers that care for, and preserve the quality of the fibre

Global Social Principles

Better Cotton Initiative will respect and promote Decent Work

Better Cotton Initiative will facilitate producer organization (for smallholders)

Global Economic Principle

Better Cotton Initiative will facilitate access to equitable finance

Better Cotton Global Framework - Template

Global Environmental Principles					
Principle		Criteria	Tools	Implementation Strategies	Indicators
Better Cotton is produced by farmers that maintain the quality and availability of water					
Better Cotton is produced by farmers that use pesticides safely and responsibly					
Better Cotton is produced by farmers that care for the health of the soil					
<i>Better Cotton is produced by farmers that preserve natural habitats</i>					
Better Cotton is produced by farmers that care for & preserve the quality of the fibre					
Global Social Principles					
Principle	Beneficiaries	Criteria	Tools	Implementation Strategies	Indicators
Better Cotton Initiative will respect and promote Decent Work	• Formal employees				
	• Smallholders				
	• Informal workers				
	• Women				
Better Cotton Initiative will facilitate producer organization	• Children				
	• Smallholders				
	• Women				
Global Economic Principle					
Principle	Beneficiaries	Criteria	Tools	Implementation Strategies	Indicators
Better Cotton Initiative will facilitate access to equitable finance	• Smallholders				