International Cotton Advisory Committee
Food and Agriculture Organization of the United Nations

44th Meeting of the ICAC Expert Panel on Social, Environmental and Economic Performance (SEEP) of Cotton Production
FAO, Rome, 19 October 2017
Agenda

9:00:	Gathering at FAO's General Entrance
9:30:	Review of the "Lessons learned report"
11:30:	SEEP Workplan: Identification of potential areas of work, including: • Assess soil health across the range of production regions and share site specific practices that may find utility in other regions (BN & KH) • Collection and reporting of sustainability metrics (FM & AW) • Use of Life Cycle Assessment (LCA) methodologies by the textile supply chain (AW) • Evaluation of sustainability initiatives v/s conventional cotton using SEEP indicators (KK & LR, ICAC) • Life cycle assessment of cotton v/s synthetic fibers (KK & LR, ICAC) • Update from FAO on work being done to build the sustainability of the cotton sector (FM, FAO)
12.30:	Lunch at FAO
13:30:	SEEP Workplan: Prioritization of areas of work for next 2 years (All)
15:30:	Coffee break
16.00:	Key points for SEEP Report to Plenary Meeting in Tashkent (All)
17.00:	Other Business
17.30:	End of meeting
19.00	DINNER

Food and Agriculture Organization of the United Nations

Cotton sustainability issues: investment perspective

44th Meeting of the ICAC Expert Panel on Social, Environmental and Economic Performance (SEEP) of Cotton Production
FAO, Rome, 19 October 2017

Dmitry Prikhodko
Economist
Investment Centre Division
FAO

FAO's Investment Centre Division

- Design, provide implementation support and evaluate investment project projects of World Bank, EBRD, IFAD our main partners;
- Work with governments on environmental and natural resources management – host to FAO GEF Unit
- Facilitate policy dialogue
- Undertake sector analyses and value chain studies
- 95 agricultural investment specialists carry out about 800 missions per year
-

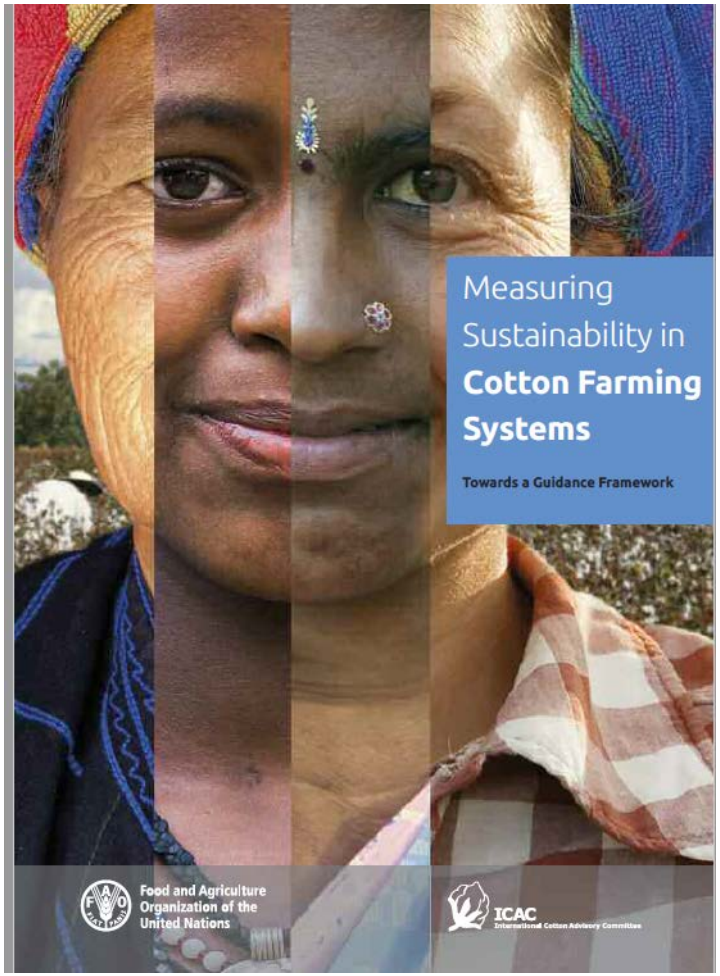
- **Cotton sector experience**:
- World Bank's *Tajikistan Cotton Sector Recovery Project*
- - post-harvest financing scheme of USD 10.5 million (six cotton ginneries, loan applications, monitoring and evaluation system in 2009-2013);
- *Azerbaijan Cotton Sector Review* with EBRD (2017)

Main issue from investor's perspective

Fear of reputational damage

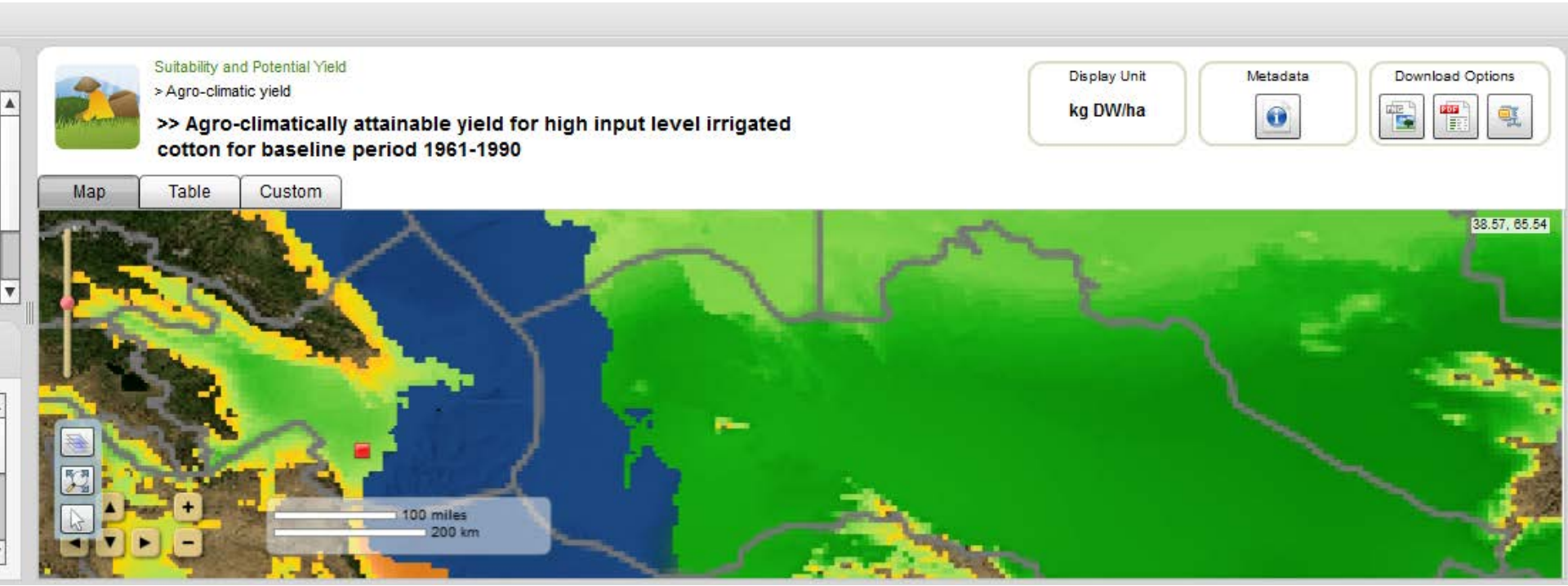
- Child labour in berry picking
- Intensive horticulture up to 40 insecticides sprays/year
- Sugar cane uses twice more water than cotton
- Illicit and banned pesticides used on food crops too
- Market concentration issues can be the same in the honey sector
- Yet, the cotton sector is exposed to media and NGO attention

Thank you!



… providing best practice examples can be of further help to practitioners who work in development projects in the cotton sector

Example agro-climatically attainable yield (Azerbaijan)



Source: FAO GAEZ

The intensity/darkness of the green color indicates better cotton growing conditions

… but what about drip irrigation?

Social Screening Example (Azerbaijan)

- According to UNICEF, around 100 ,000 children – or 6.5 percent of the population aged 5 to 14 – were engaged in child labour in Azerbaijan with 90 percent of them engaged in agricultural work

- The US Department of Labor has listed cotton as the only Azeri good produced by child labour or forced labour in violation of international standards'.

Mission findings and interviews:

ILO does take a far balanced approach with no major issues highlighted

Social Screening Findings (June 2017, Y. Ishihara)

Labour arrangements

- In the two rayons visited (Yevlakh and Kurdamir), cotton farmers sign a formal contract with the factories which buy all produce at the agreed price
- The cotton farmers use local agricultural labourers for manual weeding and harvesting
  - Labour brokers as intermediaries
  - Informal but well-established local arrangement with clear understanding on conditions
  - Labourers are from poor households, and many are women – hence income generation
- No practice of child or forced labour observered or reported

Economic issues

- Often cotton is perceived as unprofitable crop (after adjusting to economic prices (conventional gross margin or domestic resource costs analysis issues and choice of crops)
- We can not expect all farmers grow high-value crops (limited markets or absence of post-harvest infrastructure)
- Fragmented production vs. highly concentrated export: clear contractual arrangements along the supply chain- traders bare risks
- Labour issues – manual picking is bad; mechanical is bad too…

BETTER COTTON INITIATIVE

Introduction to Results & Impact Measurement

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FAO, Rome, 19 October 2017

MISSION & VISION

- BCI's **mission** is to make global cotton production better for the people who produce it, better for the environment it grows in, and better for the sector's future.

- We seek to transform the sector to make cotton a **sustainable mainstream commodity**.

- Beyond compliance: towards continuous improvement
- Process-based standard

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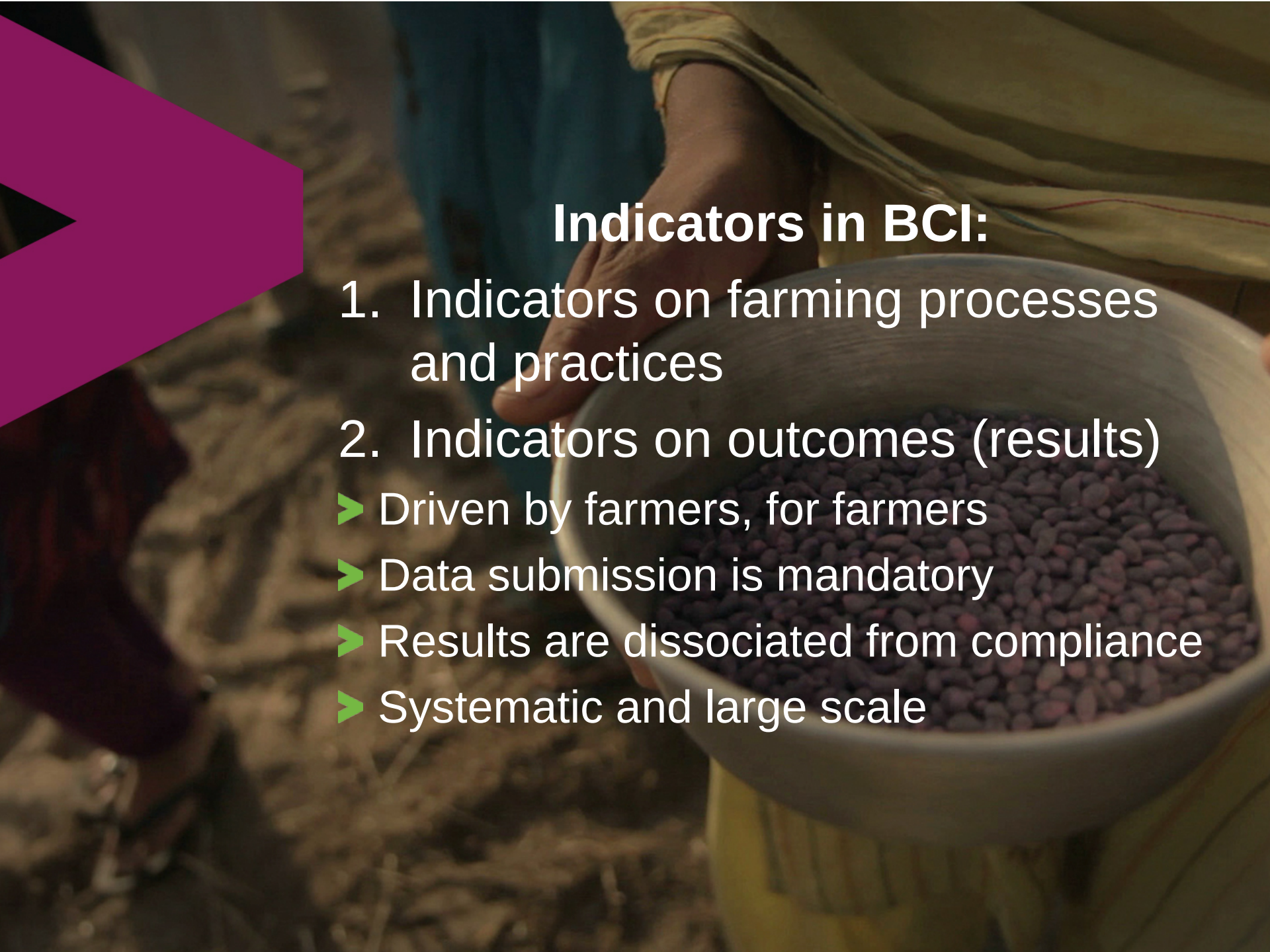
Continuous improvement is how we measure success



Indicators in BCI:

1. Indicators on farming processes and practices
2. Indicators on outcomes (results)

- Driven by farmers, for farmers
- Data submission is mandatory
- Results are dissociated from compliance
- Systematic and large scale

RESULTS INDICATORS

Environmental	• **Pesticide Use** • **Fertiliser Use** • **Water Use for Irrigation**
Economic	• **Yield** • **Profitability**
Social	• **Partnerships to improve access to education** • **Awareness about hazardous child labour** • **Women's inclusion in activities**

- Reported annually
- Better Cotton Farmers' results compared to Comparison Farmers
- Focus on farm-level

DATA COLLECTION

- All farmers record inputs / outputs in their FFB
- A representative sample is collected
  - Statistical method + random selection of LG
  - Assumption: PUs are homogeneous
  - ~ 10% of farmers
- RI are reported against RI from comparison farmers.
- 14 million data points collected in 2015-16
- Longitudinal result evaluation: lead farmers over time. 2014 onward.

Farm Results

BCI Farmers vs comparison farmers*

Data from all BCI medium and large farms is collected. For smallholders, a sampling approach is used that includes the collection of data from a representative sample of Learning Groups that are randomly selected by BCI on a yearly basis at the end of the season. On occasion, data was excluded from the analysis because it was assessed to be incomplete or because no comparison data was available for a Producer Unit.

Farm results must not be manipulated in any way. Averaging farm results across different geographies undermines the credibility of the data. If you have queries regarding how to use these results, please contact comms@bettercotton.org.

	China 2015 - 16	India 2015 - 16	Pakistan 2015 - 16	Tajikistan 2015 - 16	Turkey 2015 - 16	Mali 2015 - 16	Mozambique 2014 - 15**	Senegal 2015 - 16
Yield	▲ 11%	▲ 9%	▲ 9%	▲ 21%	▲ 7%	▲ 4%	▲ 15%	▲ 26%
Pesticide	▼ 12%	▼ 20%	▼ 17%	▼ 23%	▼ 12%	▼ 73%	▼ 6%	0%
Synthetic Fertiliser	▼ 1%	▼ 20%	▼ 13%	▼ 1%	▼ 6%	▼ 13%	Not used by comparison farmers	▲ 11%
Organic Fertiliser	▲ 303%	▲ 8%	▲ 446%	▲ 49%	Not used by comparison farmers	Not used by comparison farmers	No organic fertiliser used	Not reported by BCI Farmers
Water	▼ 26%	▼ 20%	▼ 21%	▲ 6%	▼ 10%	Rainfed	Rainfed	▲ 6%
Profit	▲ 34%	▲ 23%	▲ 37%	▲ 65%	▲ 26%	▲ 12%	▲ 16%	▲ 64%

** The data shown here are the most recent results available from a single season. The results compare BCI to non-BCI (comparison) farmers working in the same area. Example: In the 2015-16 season, BCI Farmers in China used 26% less water for irrigation than comparison farmers.*

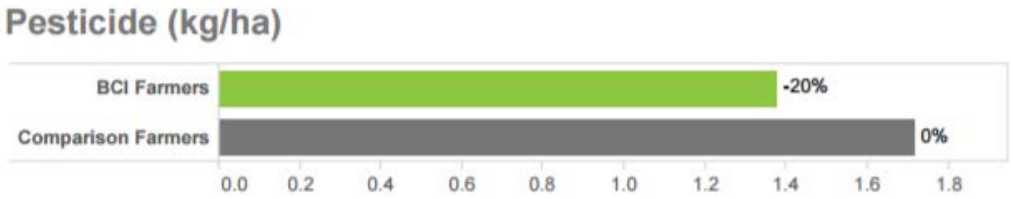
*** Due to the high proportion of Mozambican farmers who participate in BCI projects, comparison farmer data is not available from the 2015-16 Season. The most recent results, from the 2014-15 season, have been included.*

WHERE ARE WE HEADED?

“ Not everything that counts can be counted, and not everything that can be counted counts”

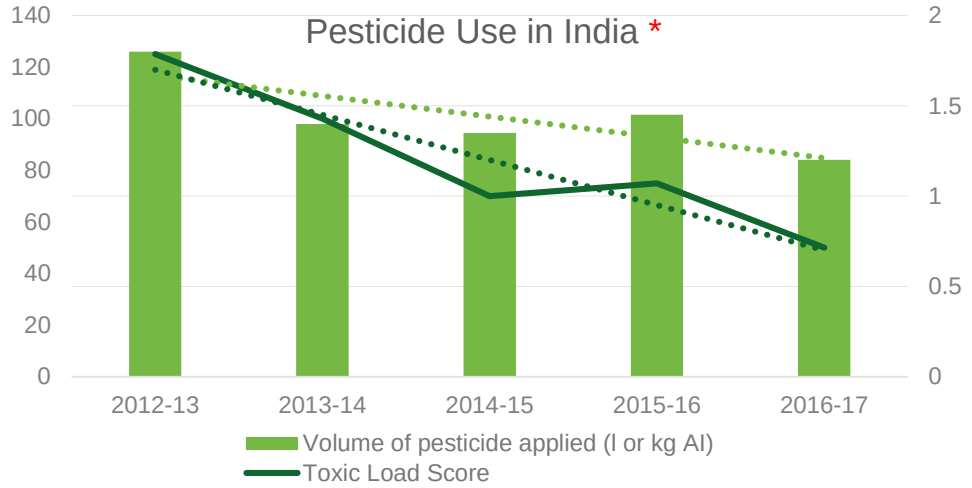
William Bruce Cameron, “Informal Sociology: *A Casual Introduction to Sociological Thinking*, 1963

LONGITUDINAL COHORT ANALYSIS TO DEMONSTRATE CONTINUOUS IMPROVEMENT (EXAMPLE)



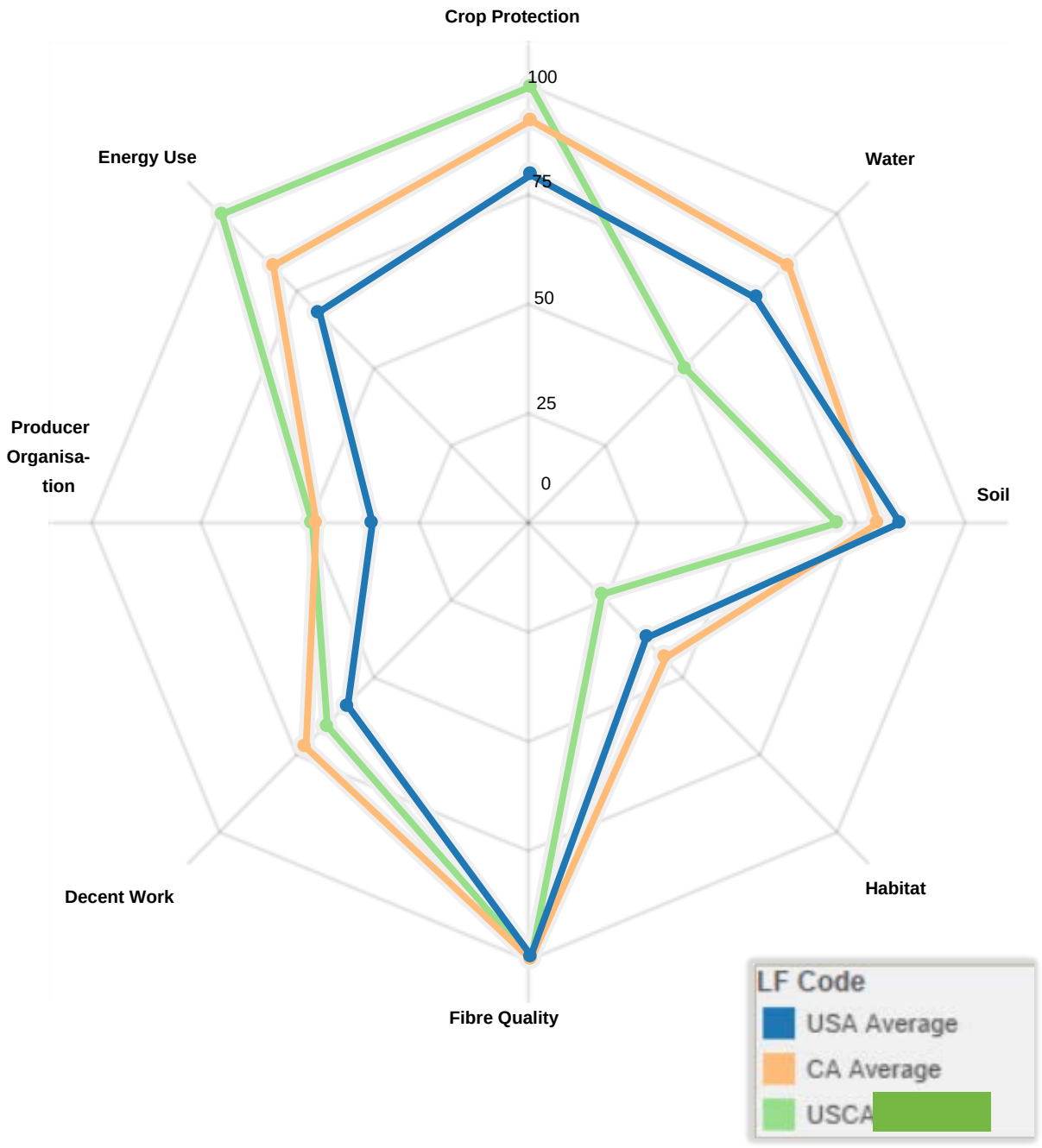
From comparison farmers …

… to longitudinal cohort analysis:



Between the 2012 and 2016, BCI Farmers in India have demonstrated a **downward trend in the volume of pesticide use** and an even more **notable downward trend in toxic load.**

**Fictional data for demonstration purposes only*


Crop Protection
100
75
50
25
0
Water
Soil
Habitat
Fibre Quality
Decent Work
Producer Organisa-tion
Energy Use
LF Code
USA Average
CA Average
USCA

BCI'S APPROACH – THE DELTA PROJECT

- **Our Retailer & Brand members are looking for "sustainability metrics" to feed into their sustainability reporting.**

- They are looking to **demonstrate their contribution to reductions of environmental footprint**,

- **Results reporting framework** that:
  - Highlights improvements and change over time
  - Considers sustainability holistically
  - Supported by strategic communications that provides context

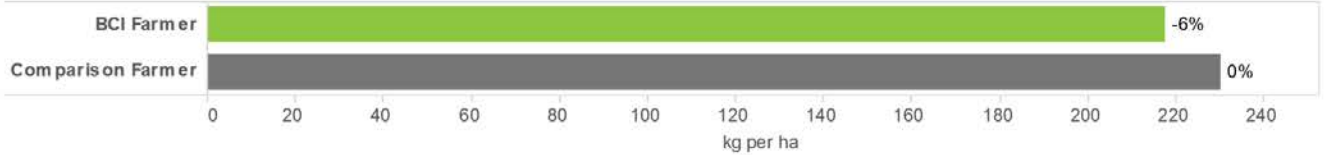
<sheet name> of Synthetic Fertiliser

Select Status of Farmer

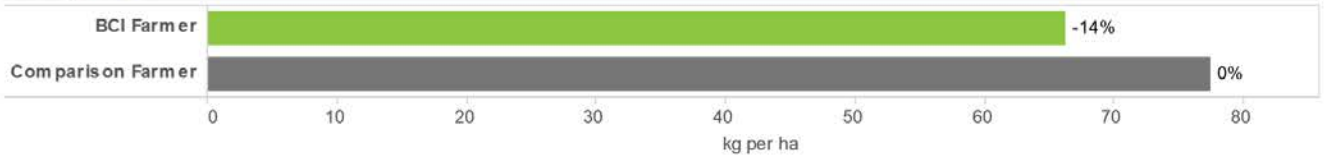
- BCI Farmer
- Comparison Farmer

Select PU

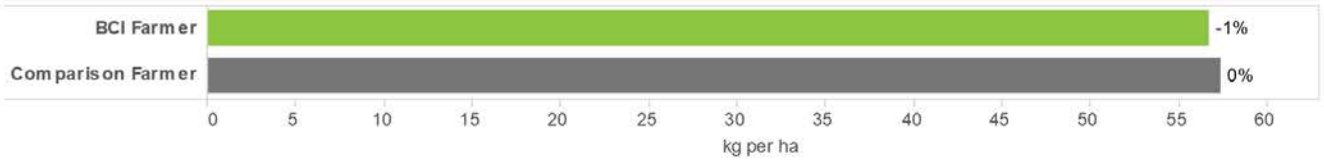
Nitrogen



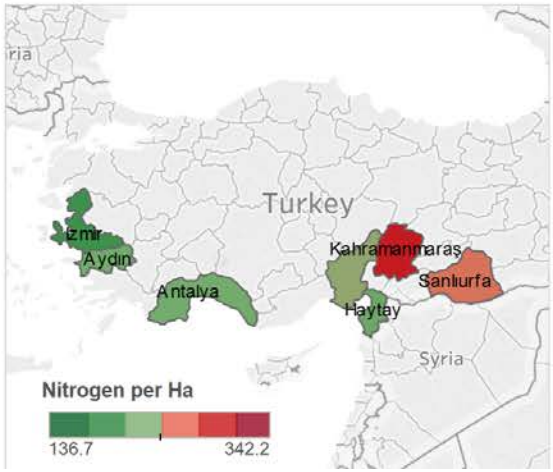
Phosphorus



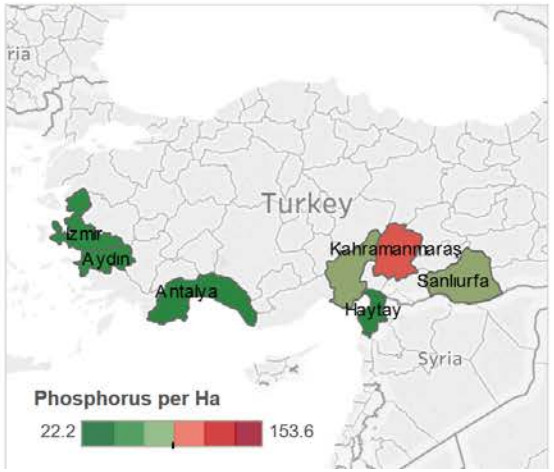
Potassium



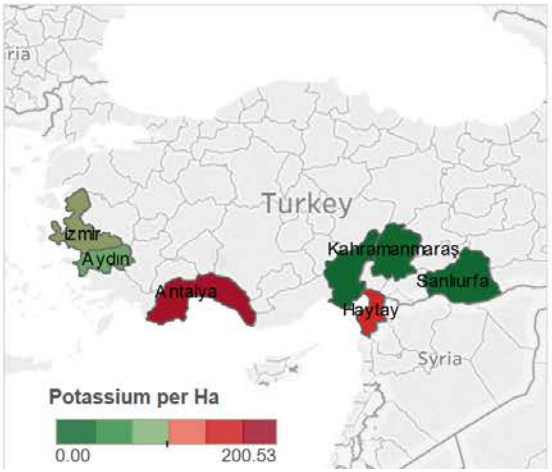
Nitrogen



Phosphorus

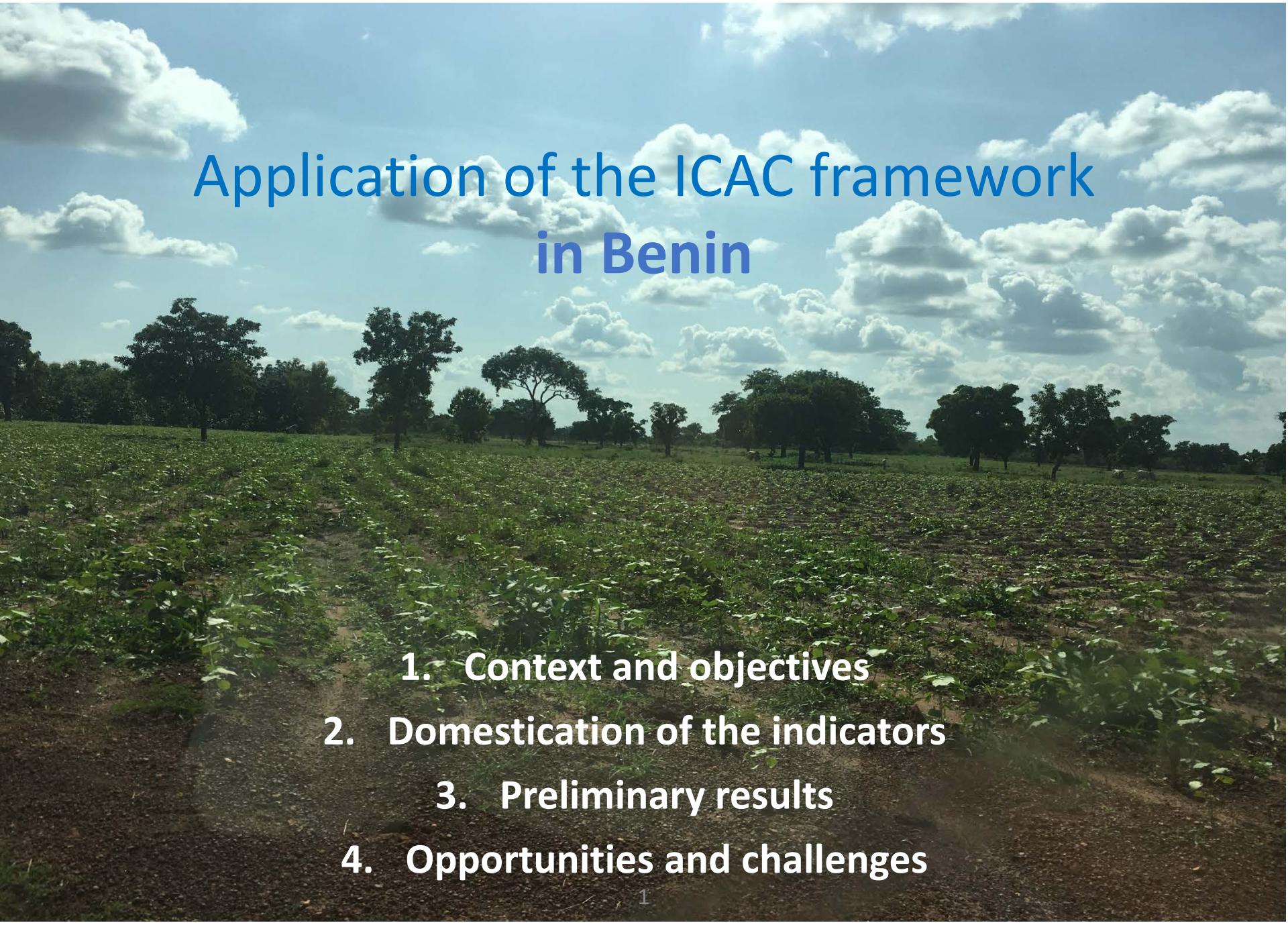


Potassium



Thank you

Damien Sanfilippo
Director, Standards & Assurance
Damien.Sanfilippo@bettercotton.org

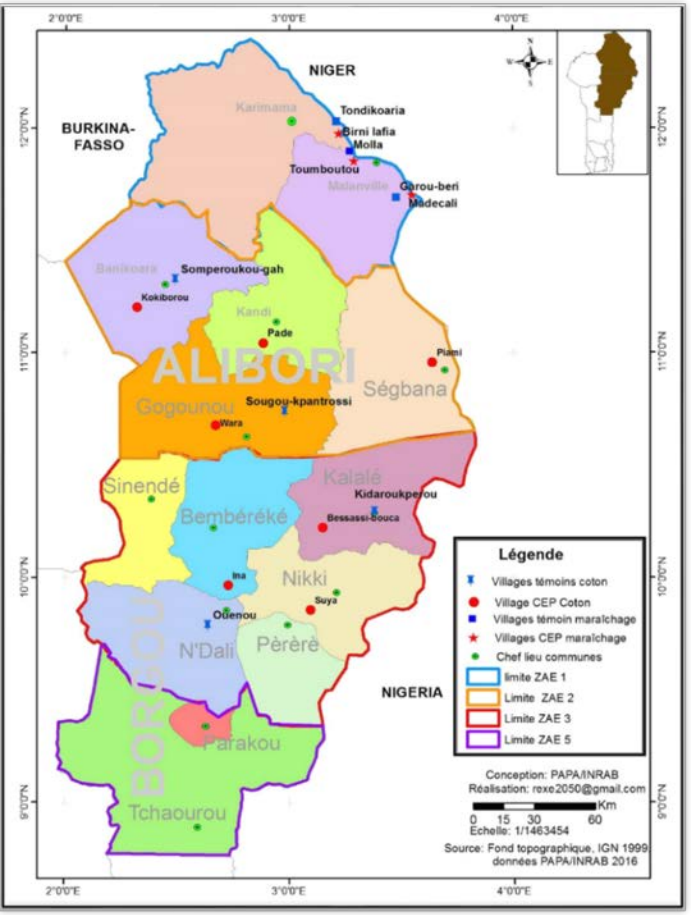


Application of the ICAC framework in Benin

1. Context and objectives
2. Domestication of the indicators
3. Preliminary results
4. Opportunities and challenges

Context and objectives

- National Project aiming at improving sustainability of cotton production through Farmer Field Schools
- The framework is used to monitor and evaluate the FFS



- 7 FFS on cotton in 7 villages

Borgou and Alibori

- Agro ecological zones : cotonnière du Nord-Bénin et sud Borgou
- 175 farmers (sample= 60%)
- 4 control villages (sample 15 farmers *village)
- **Total 165 farmers surveyed**

Domestication of the indicators

❖September 2016 national stakeholder selected some indicators

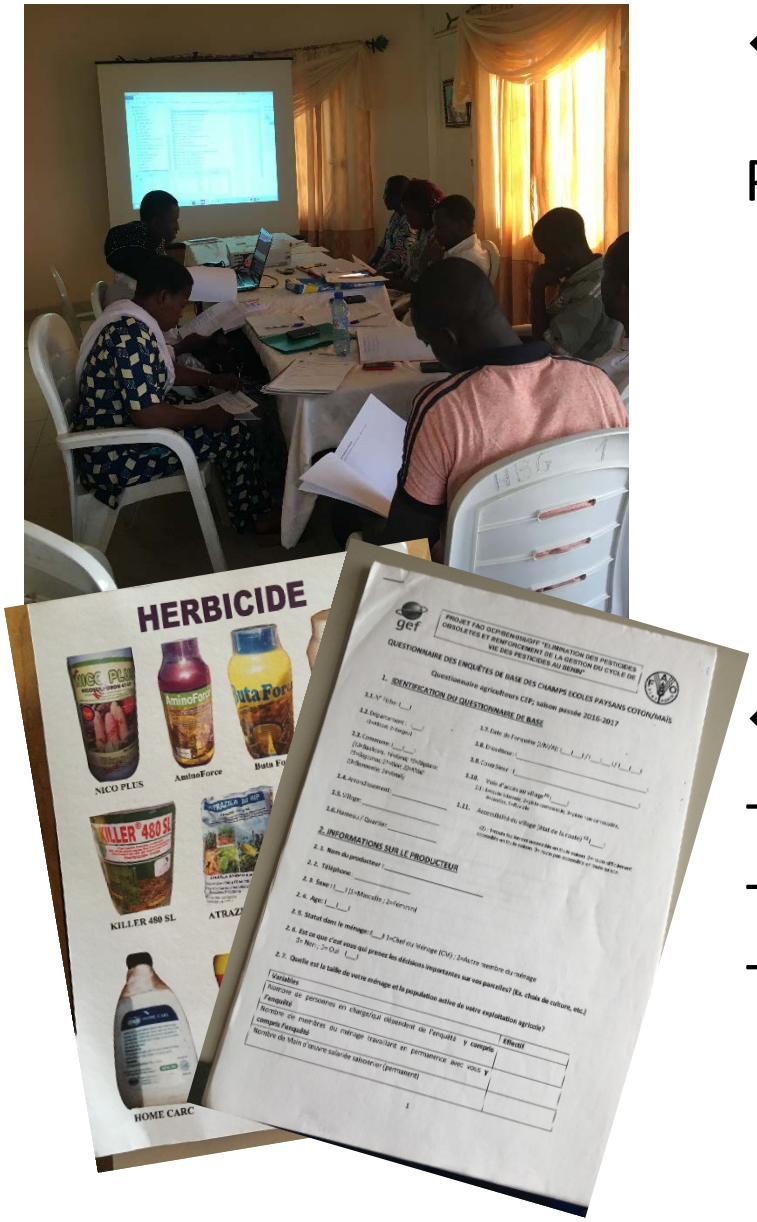
40 indicators with emphasis on pest and pesticide management

- 14 CIRAD West and Central Africa adaptation/ or slighty adapted;
- 18 adapted to Benin
- **8** specifically formulated for Benin

- Benin modifications/additions
  - **soil improvement** (such as use of plants improving fertility of soil),
  - **IPM components** (biological control, use botanicals),
  - **pesticide management** (exposure to HHPs, training component, disposal)
  - **farmer prosperity** (classing farmers in 4 groups based on measuring the whole of specific assets);

❖December 2016 piloted on vegetables – reduced subset

Domestication of the indicators



- July 2017 it was rolled out to collect data for cotton and maize farmers

Protocol and tools developed involved :

- standardization of unit measures
- Guided structured questionnaires
- Photos and coding to capture pesticide information
- Training in data collection and data entry
- Excel template for delivering the indicators per village and department

- August 2017

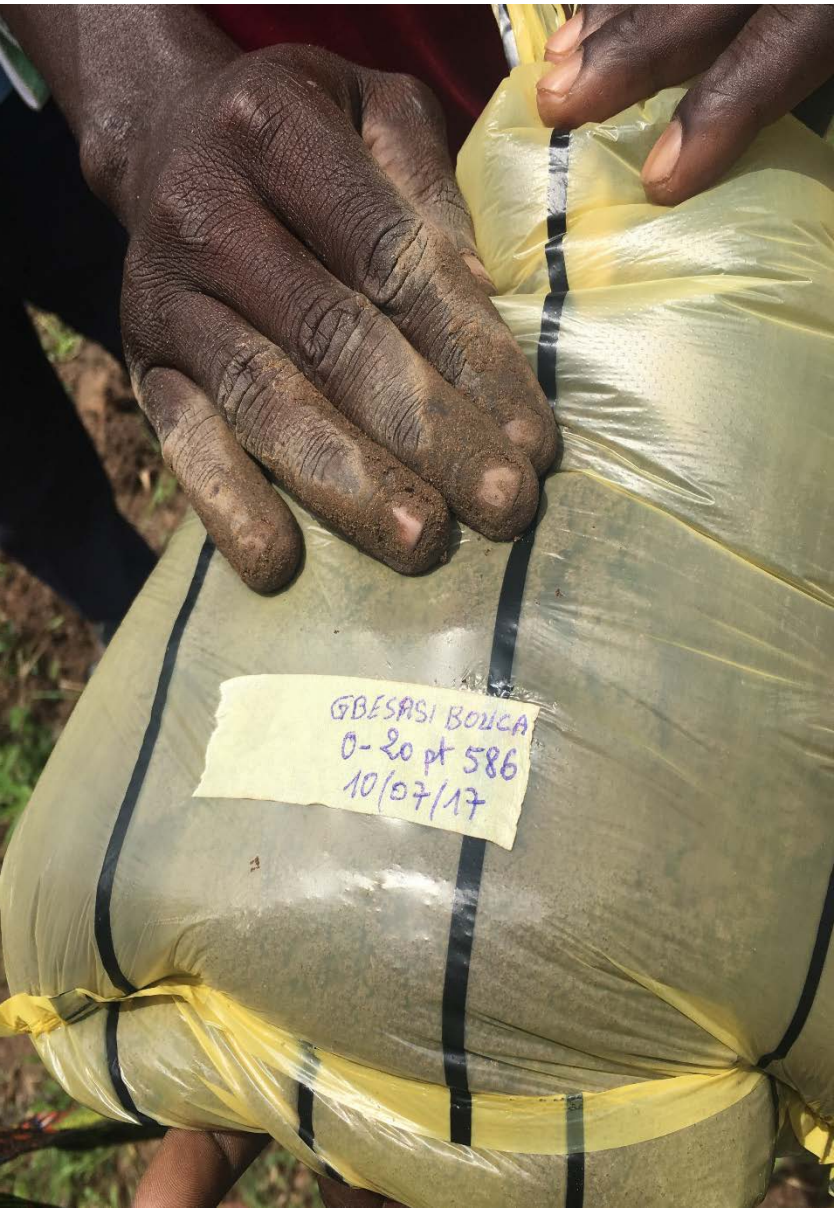
- preliminary findings
- emerging needs and
- recommendations to improve intervention

Preliminary Results

Pest and pesticide management in 2016-2017 season on cotton

- All farmers applying insecticide and herbicide following calendar application
- Using consistent amount of herbicide (2.3kg glyphosate/ha mean)
- Most used pesticides clorpyrifos associated to poisoning symptoms by 15% of sample
- gaps or lack of training (30 % only trained and gaps on risks, doses, labels, application equipment, disposal)
- Reuse of empty pesticide containers for food in Alibori
- 0 access to botanicals or PPE

Preliminary Results



<u>Soil management:</u>

- Low N<0.045%
- low OM = 1-0.5%
- Low P = 10-2 ppm

- No use of organic manure – yet available in situ
- Rotation with maize/cotton only year on year in Alibori
- Legumes in Borgou

Opportunities and challenges

Opportunities and challenges

Main opportunities

1. Diagnose problems and **identify related needs for progress and stimulate action to address them**

2. Allows for intervention at multiple scale–from farm to department/ central- and for impact assessment (comparability)

3. comprehensive, improves understanding of drivers to sustainability and stimulate collaboration

4. The framework is highly adaptable to any crop system

Opportunities and challenges

Challenges

1. raw data or **benchmark for indicators** already collected do not exist in Benin;
2. **Data collection is complex especially in Benin a**nd further guidance on the application of the indicators is needed;
3. **Data intensive** and trade off are necessary
4. Also some definitions such as IPM or prosperity, food security are locally specific and can be interpreted differently.


Thank you

Cotton Sustainability Goals Summarized

(aka Key Performance Indicators)

1. Land Use Efficiency *10% less land per pound of fiber*
2. Soil Conservation *No net soil loss, U.S. average equals T*
3. Water Use Efficiency *59 pounds of fiber per acre-inch of irrigation*
4. Energy Use *6,000 BTUs per pound of fiber*
5. Greenhouse Gas Emissions *0.85 lbs of CO2e per pound of fiber*
6. Soil Health *2/3 of cotton fields increasing soil carbon*
7. Participation in Field to Market *2.5 million acres FieldPrinted*

Cotton Sustainability Goals Summarized

(aka Key Performance Indicators)

KPI	Current	10 Year	% Change
Land Use (acre per lb.)	0.0011717	0.0010560	-10
Soil Loss (ton per acre)	10	T (5)	-50
Water Use (lb. per in)	50	59	-18
Energy (BTU per lb.)	7000	6000	-14
GHG (lb. CO_{2e} per lb.)	1.4	0.85	-39
Soil Health (soil C)	Base	2/3rds	+67
Cotton FieldPrints	100,000	2,500,000	+2,500

Cotton's Goal Setting Process & Status

ASABE Standard S629

1. Define
- A. Define Sustainability
- B. Define Key Performance Indicators
- C. Select Metrics for KPIs

2. Measure
- A. Benchmark KPI Metrics
- B. Set Goals for Each KPI
- C. Develop Strategy to Meet Goals

3. Implement
- A. Implement the Strategy
- B. Measure, Assess and Report Results
- C. Adapt Strategy to Improve Outcomes

Process is compliant with ANSI/ASABE standard S629.

- **Steps 1 A, B and C** were conducted at a joint NCC, CCI, CB and CI workshop with outside experts on March 14 and 15 of 2017
- **Step 2A** - Benchmarking KPIs using the Field to Market cotton FieldPrints and National Indicators reports
- **Step 2B** - Goals established by the NCC Sustainability Taskforce, to be reviewed by Field to Market with final adoption by the NCC Board in August of 2017

Social sustainability in cotton

Reducing child labour in cotton

Food and Agriculture Organization of the UN

Jacqueline Demeranville, Programme officer child labour in agriculture

ICAC-SEEP Meeting, 19 October 2017

What is and what is not child labour?

interferes with compulsory schooling

is hazardous

engages children below the national minimum employment age

is mentally, physically , spiritually, socially or morally dangerous and harmful to children

Child labour in family contexts is still child labour

ICAC – SEEP Child labour indicators

Percentage of children attending and completing appropriate level of school

- (disaggregated by gender; age 5-12 attending school; age 12-15 completed primary)

Number of child labourers

- (disaggregated by age and gender)

Ways to move child labour indicators

Get children in school, and help keep them there

- Supplement household income to be able to pay for school fees
- Build resilience to shocks so children aren't pulled out to work as a coping strategy
- Make school more attractive
- By making it more relevant to rural livelihoods
- Through school feeding or take-home rations
- Raise awareness among families, teachers and communities
- Address issues such as transport, safety, particular barriers to girls

Ways to move child labour indicators

Sometimes schooling isn't enough, need to get children out of dangerous work

- Address the pull factors, or demand for child workers
  - Increase profitability of production to allow for hiring of adult/youth
  - Identify simple technologies that can reduce the time needed for tasks children are typically engaged in
  - Consider if there are incentives for children to work (e.g. to help families meet quotas)
- Turn hazardous work into decent youth employment
  - Eliminate hazards or implement risk control measures to protect children of working age from being engaged in hazardous work
- Raise awareness among families and employers

How FAO work on child labour can contribute

Knowledge generation

- Studies on child labour in cotton farming communities (% of children engaged, tasks boys and girls undertake, hazards at work, participation in education)

Capacity development

- Government ministries, extension and producers' organizations
- E-learning course: "Business-oriented strategies and public-private partnerships for elimination of child labour in agriculture"

How FAO work on child labour can contribute

Policy and programme support

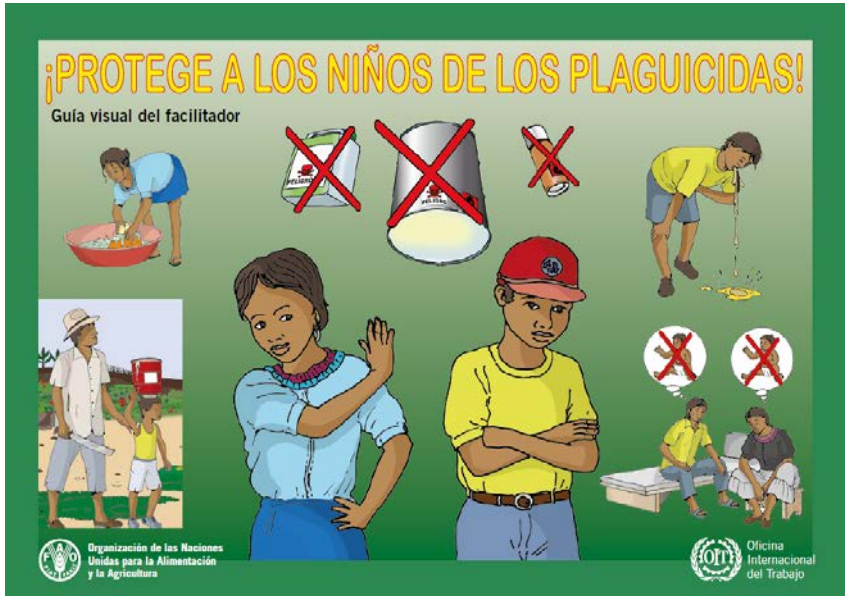
- National action plans on child labour in agriculture
- Guidelines for extension agents, crop protection agents etc.
- Improved youth employment opportunities

Awareness raising

- Through extension agents, schools, producers' organizations, workers' unions

Partnerships

- International Partnership for Cooperation on Child Labour in Agriculture (FAO, ILO, IFAD, IUF, IFPRI/CGIAR)



Direct Action - EC project

Elimination of child labour and forced labour in the cotton, textile, and garment value chains in target producing countries through an integrated approach

The project aims to:

- Enhance legislation, regulation and policies
- Address basic needs and rights of children and victims of forced labour
- **Adopt an integrated area based approach, embedded in a value chain approach including cooperation with local industry and international buyers**

Direct Action - EC project

Elimination of child labour and forced labour in the cotton, textile, and garment value chains in target producing countries through an integrated approach

- Activities may include measures to:
  - strengthen law enforcement
  - improve access to education, legal and social protection
  - strengthen district and community level action
  - **improve livelihoods of households vulnerable to child labour and forced labour**
  - capacity building for districts and communities, government bodies, workers' organisations, farmer associations, micro and small-scale producers
  - support media campaigns.

- A full monitoring and evaluation system will be put in place.

The project, to start in 2018, will be implemented by the ILO in partnership with the FAO.

Thank you!

Jacqueline Demeranville
FAO Programme Officer on Child Labour in Agriculture
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For more information about FAO's work on child labour:
http://www.fao.org/childlabouragriculture/en/
And on DRE:
http://www.fao.org/rural-employment/en/

Contribution of the Framework on the learning process - Farmer Field Schools (FFS)

Different categories of human resources who participate in FFS learning process are involved in data collection for indicators (master trainers, facilitators, farmers)

a) Composition of the attendees group to the learning process (e.g. socio-economic level, behavioral attitude, etc);

b) Farmers priorities, problems and gaps: training curriculum

Contribution of the Framework on the learning process - Farmer Field Schools (FFS)

c) Trainers, facilitators and farmers who participate at the data collection learn and get information on technical topics and extend their perception to all the 3 dimensions (economic, environmental and social)

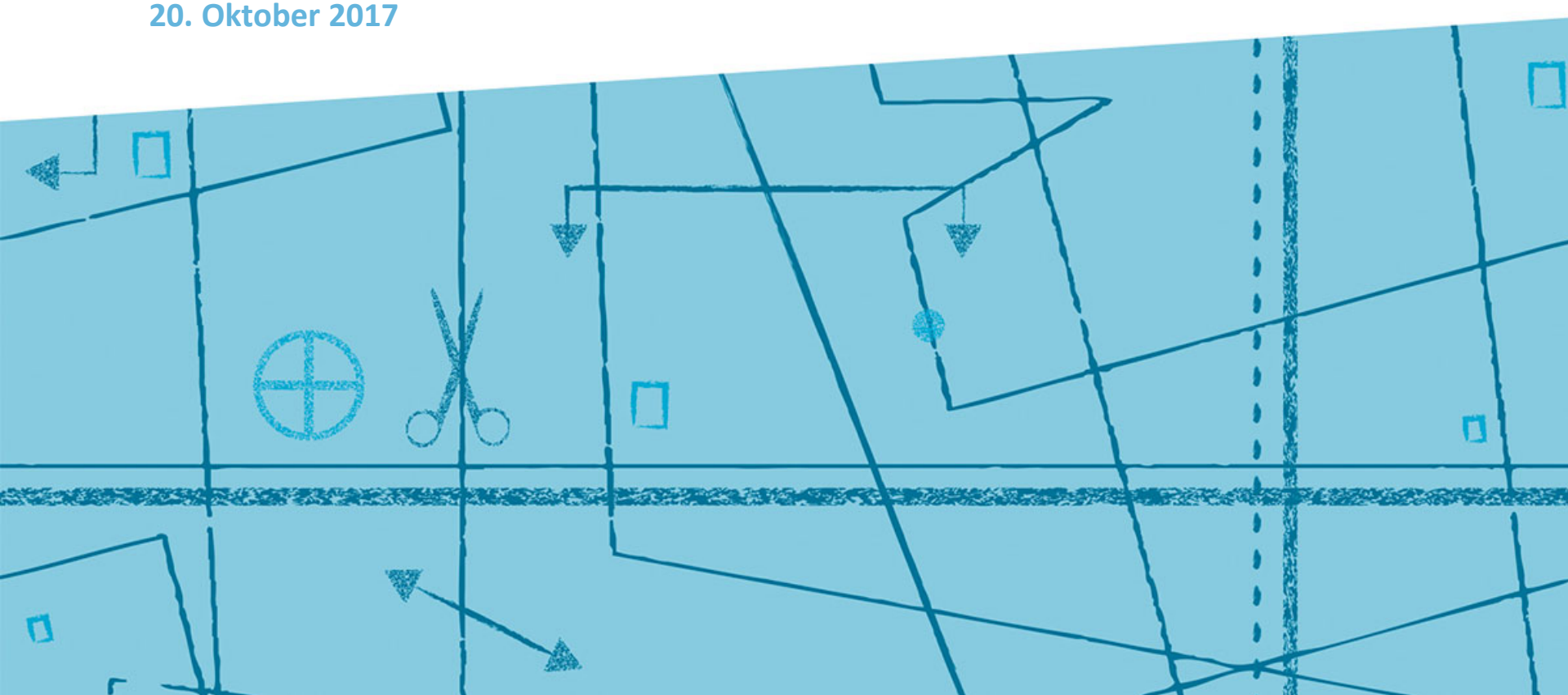
d) Trainers, facilitators and farmers get involved with research centers which collect and analyze data for indicators:

- **Experimentation plots close to the field used for training sessions (virus, fungi, parasitoids)**
- **Results of the analysis are included in the training curriculum**

Partnership for Sustainable Textiles

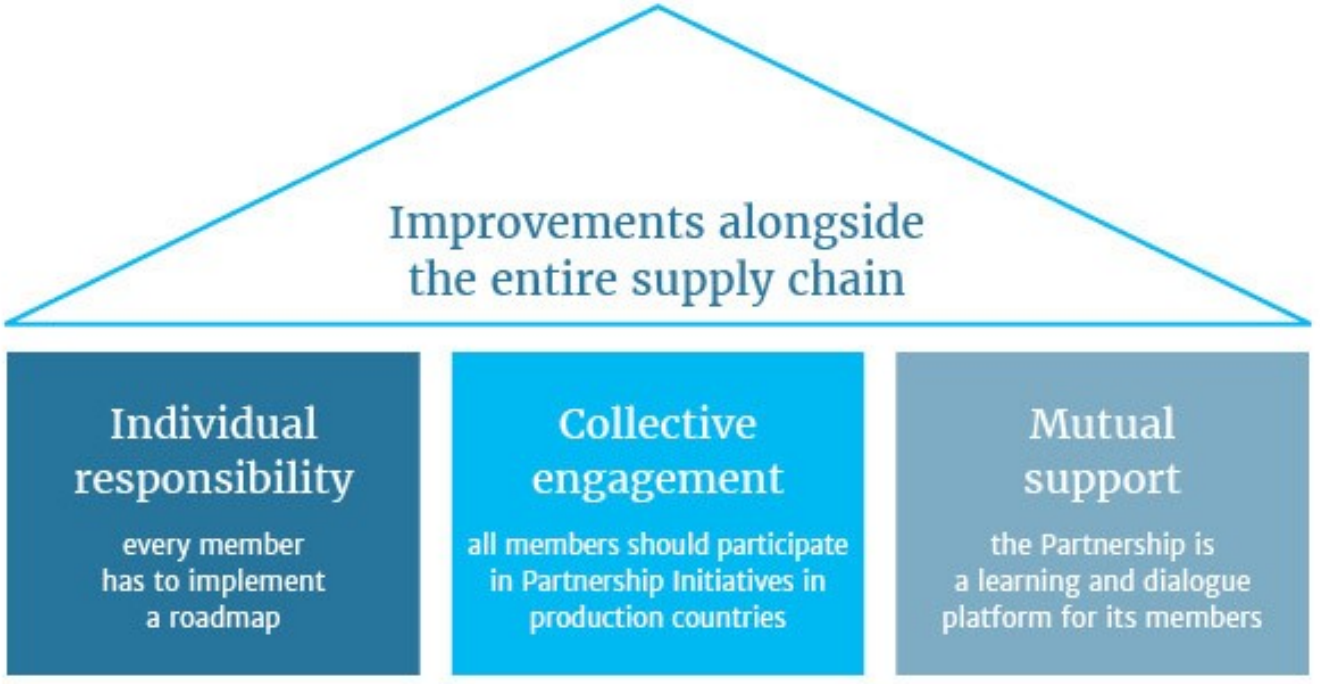
Update: Partnership on Sustainable Textiles ICAC SEEP Meeting Rome

20. Oktober 2017



Partnership for Sustainable Textiles

Pillars of the Partnership



Bündnis für
nachhaltige Textilien

INDIVIDUAL RESPONSIBILITY

Bündnis für nachhaltige Textilien

Fibre related Questions - Examples

Risk analysis	Is your organisation working towards increasing the level of transparency in its supply chain?	What information does your organisation record, with regard to the fibres it uses?	Multiple selection: a) Country of origin b) Type/quality c) life-cycle assessment d) Other

Risk analysis	Is your organisation working towards increasing the level of transparency in its supply chain?	How does your organisation record the types and volume of fibres used?	text box: Please specify the calculation tool used.

Business practices and supply chain management	Does your organisation integrate the outcomes of risk and impact assessments into its business activities?	What is the percentage of sustainable natural fibres used, in relation to the total quantity of natural fibres?

Does your organisation integrate the outcomes of risk and impact assessments into its business activities?	What activities do you promote in the range of man-made fibres?	Activities/ certification - Recycling (e.g.) Global Recycle Standard - Prevention of deforestation (e.g. FSC/PEFC/Canopy) - Compliance with specific environmental requirements (EU Ecolabel, Blauer Engel) - Chemical-related requirements - text box

Bündnis für nachhaltige Textilien

Results Roadmap-Process 2017

- **129 Roadmaps** finalised
- **44** members leave the Partnership
- **40 Publication**: http://www.textilbuendnis.com/wer-wir-sind/mitglieder/
- Worked a lot, learned a lot

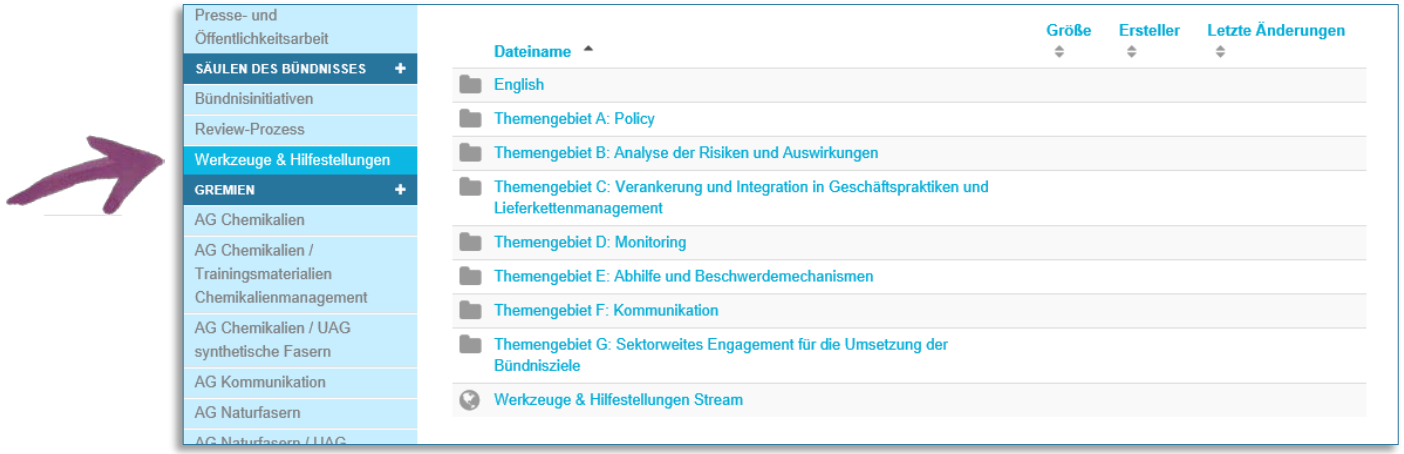
Bündnis für
nachhaltige Textilien

MUTUAL SUPPORT

Bündnis für nachhaltige Textilien

Activities 2017

- **Webinar**, e.g. Purchasing Practices, Living Wages
- June 2017: Business Coaching „Social Impact in the textile value chain“
- **Briefing documents e.g.** on risk analysis; policy
- **Joint conference with universities and redearch institutes** on Chemical and Environmental Management
- …



Bündnis für
nachhaltige Textilien

COLLECTIVE ENGAGEMENT

Bündnis für nachhaltige Textilien

Partnership Initiatves

Partnership Initiatives…

- are **broad-based measures** which aim to improve general conditions in producer countries;
- are designed by a **large number of Partnership members** to support the achievement of Partnership goals;
- involve **local actors** such as supplier companies, government units and trade unions as well as non-governmental organisations.

Bündnis für nachhaltige Textilien

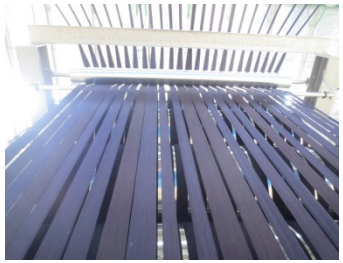
Partnership Initiatives

1. **Systemic improvement of labour conditions** Tamil Nadu State / South India

2. **Water management** in the cotton supply chain in Pakistan

3. **Sustainable chemical and environmental management** in the textile sector

4. Strengthen **availability of GMO free seed** in central Asia



Bündnis für nachhaltige Textilien

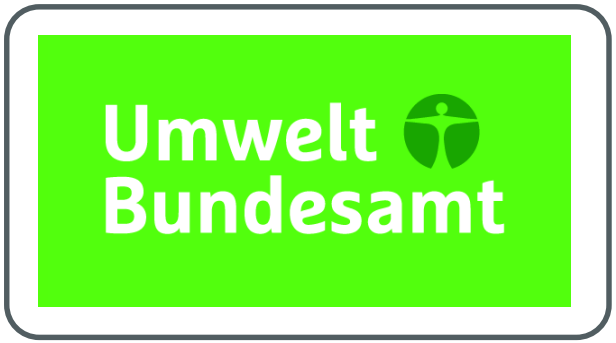
Water management in the cotton supply chain in Pakistan

Areas of Engagement:

(1) Farm – Level
(2) Fabrikebene


BMZ
Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung


kik


Umwelt Bundesamt


Lok Sanjh Foundation


Farmers Associates Pakistan


Agriculture Department


Ministry Of Textile Industry


THE URBAN UNIT
A Public Sector Company.


NISHAT


WASA
LAHORE DEVELOPMENT AUTHORITY


Lahore Chamber of Commerce


BCI
Better Cotton Initiative


aptma
ALL PAKISTAN TEXTILE MILLS ASSOCIATION


IWaSP


ESPRIT

Bündnis für nachhaltige Textilien

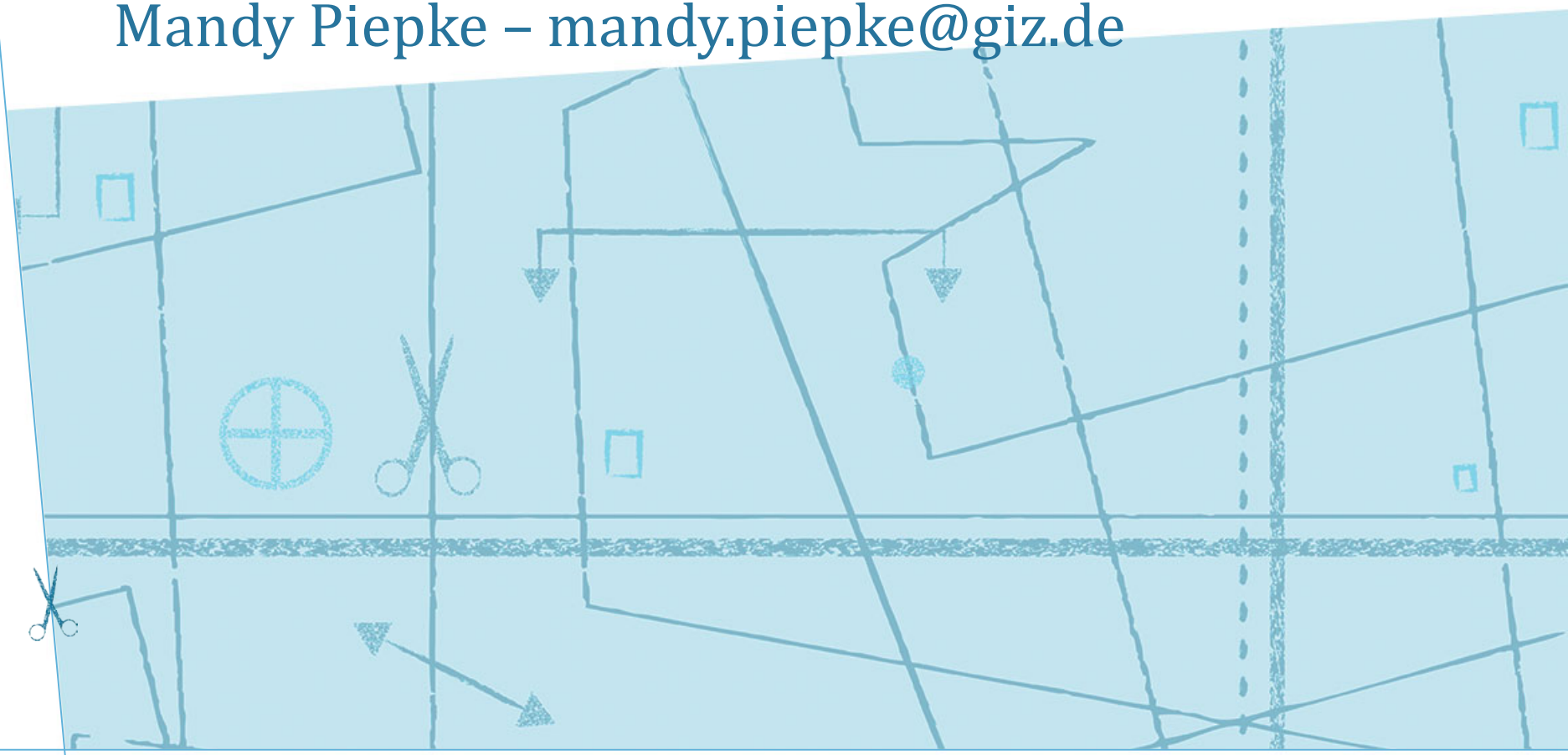
International Cooperation

- **Strategic Cooperation with ZDHC (formalised in** March 2017)
- Participation in the Chemical of Products of the **„UN - Strategic Approach to International Chemicals Management (SAICM)“**
- Recently **preperation of strategic Cooperation with Sustainable Apparel Coalition** (e.g. harmonisation of questionaire)
- Close exchange with **„Agreement on Sustainable Garment and Textile“** Netherlands; current topic: opportunities for mutal asscoiated membership
- Proposal in preparation with different European Countries for Project of the **EU Garment Initiative**

Partnership for Sustainable Textiles

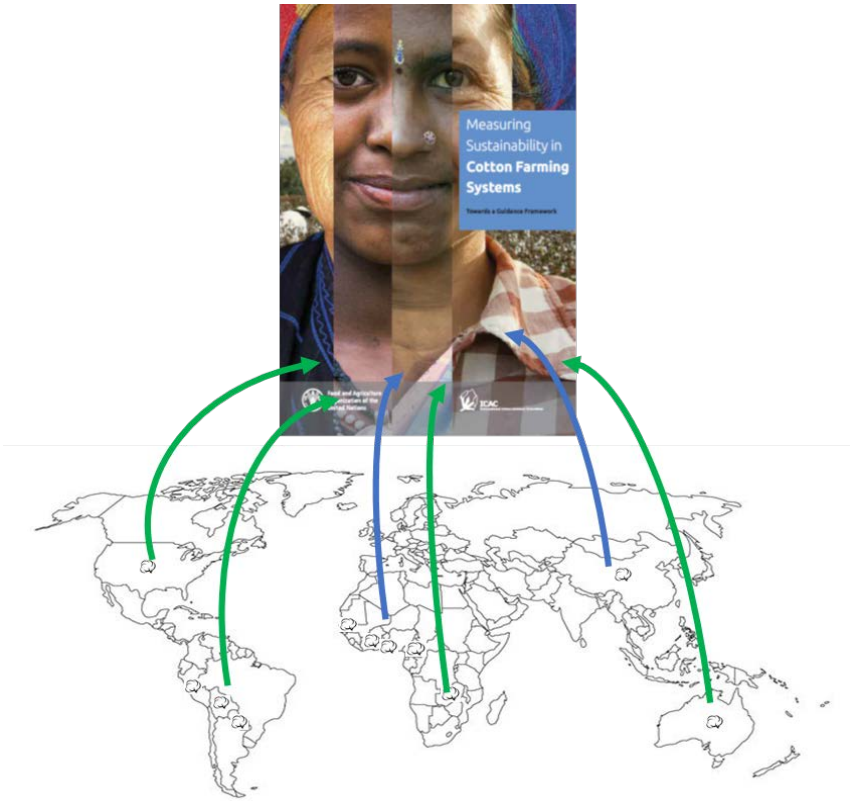
Contact

Mandy Piepke – mandy.piepke@giz.de



HELVETAS
Swiss Intercooperation

Interim Evaluation of the SEEP indicator framework



Jens Soth
Senior Advisor Sustainable Agriculture

SEEP Workshop
FAO, Rome
October 19, 2017

Participating Countries

Country	Lead Actor	Year of pilot test or project	Integration into report resp. kind of pilot project
Argentina	FAO	2016/2017	Pilot ongoing
Australia	Cotton Australia	2013/2014	Fully integrated into report
Benin	FAO	2015/2016	Key learnings integrated into report
Bolivia	FAO	2015/2016	Fully integrated into report
Burkina Faso	CIRAD	2015/2016	Stakeholder workshop
Cameroon	CIRAD	2015/2016	Key learnings integrated into report
Colombia	FAO	2016/2017	Pilot ongoing
China	CIRAD	2016/2017	Key learnings integrated into report
Ecuador	FAO	2016/2017	Pilot ongoing
Guinea	CIRAD	2015/2016	Stakeholder workshop
Ivory Coast	CIRAD	2015/2016	Stakeholder workshop
Mali	CIRAD	2015/2016	Stakeholder workshop
Niger	CIRAD	2015/2016	Stakeholder workshop
Paraguay	FAO	2014/2015	Fully integrated into report
Peru	FAO	2015/2016	Fully integrated into report
Senegal	CIRAD	2015/2016	Key learnings integrated into report
Togo	CIRAD	2015/2016	Key learnings integrated into report
United States	Cotton Inc.	2014/2015	Fully integrated into report
Zambia	Cotton Ginners Association	2014/2015	Fully integrated into report

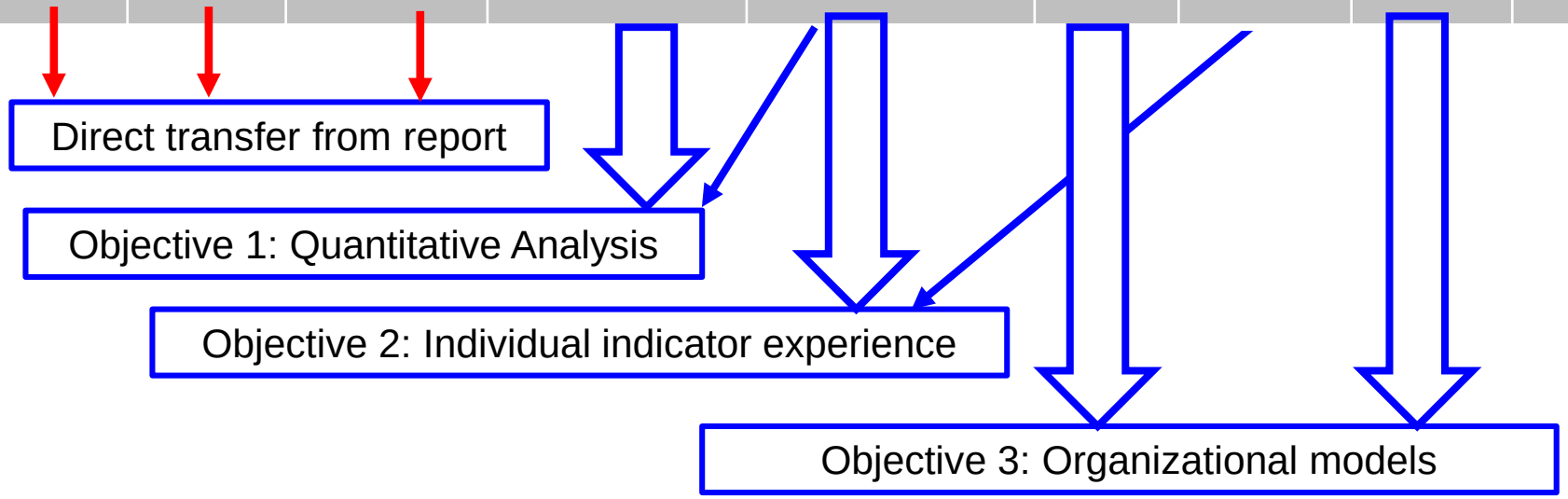
Objectives of the study

1. Get an overview which indicators have been used, modified or not used
2. Identify the need for modification or local adaptation for several indicators
3. Compile existing models how cotton stakeholders could interact on a national level to implement the framework

4. Give guidance for further pilot tests and suggest further working steps to refine the indicator framework in a way that it can be taken up by further countries

Methodical approach – the survey tool

No acc. to report	Topic	Suggested unit as per report	The indicator was used in the pilot [write "yes" OR "no"]	The indicator was modified or locally adapted [please specify the modification or adaptation]	Source of data	Survey question utilized [in case a survey on farm level was used]	Entity / Organi-zation collecting or compiling the data	Further commen ts and annotati ons



Objective 1 : Quantified results - Example

No acc. to report	Subject	Australia	US	ZAMBIA	BOLIVIA	PARAGUAY	PERU
	A) Environmental Sustainability						
	1) Pest and Pesticide Management						
	Environmental contamination and integrated pest management						
1	Quantity of active ingredients in pesticides used	Yes	Yes	No	Yes	Yes	No
2	Quantity of active ingredients in highly hazardous pesticides used	Yes, but modified	No	No	No	No	No
3	Number of pesticide applications per season	No	Yes	Yes	No	No	No
4	Percentage of treatments that involve specific measures to minimize non-target application and damage	No	Yes	Yes	No	No	No
5	Existence of a timebound IPM plan	Yes	Yes	Yes	Yes	Yes	Yes
6	Percentage of cotton area under IPM	Yes	Yes	Yes	Yes, but modified	Yes, but modified	Yes
11	Percentage of farmers that use only pesticides that are nationally registered for use on cotton	No	No	Yes	No	No	No
12	Percentage of farmers that use pesticides labelled according to national standards, in at least one national language	No	No	Yes	No	No	No
13	Percentage of farmers that use proper disposal methods for empty pesticide containers and contaminated materials including discarded pesticide application equipment	No	No	Yes	Yes	Yes	Yes
	Human exposure						
14	Percentage of farmers following recommended practices for pesticide mixing and application, and for cleaning of application equipment	No	No	Yes	Yes	Yes	Yes
15	Quantity of active ingredients in pesticides used	Yes	Yes	Yes	No	No	No

Objective 1 : Quantified results

Utilization of indicators	AUS	US	ZAM	BOL	PAR	PER
Yes	24	24	32	24	26	25
No	49	56	48	44	47	49
Yes, but modified	7	0	0	12	7	6
TOTAL	*80*	*80*	*80*	*80*	*80*	*80*
New indicators	16	8	0	0	0	0
No of indicators utilized including newly proposed ones	40	32	32	24	26	25
Percentage of indicators utilized unmodified	30	30	40	30	32.5	31.2

- The number of indicators utilized in the pilot tests ranged from 24 to 40.
- All pilot test utilized between 30 and 40% of the originally proposed indicators, albeit these are not the very same ones.
- The number of indicators that required a modification or local adaptation ranged between 6 and 12.
- The number of newly proposed indicators ranged from 8 to 16.

Everybody's darlings

- **23 were utilized in 4 or more pilot tests, which represents 28.75%.**
- **10 indicators were used in 5 or 6 and thus all pilot tests.**

No acc. to report		No of occurrences in pilot tests (incl. modifi-cations)
	A) Environmental Sustainability	
	1) Pest and Pesticide Management	
	Environmental contamination and integrated pest management	
1	Quantity of active ingredients in pesticides used	4
5	Existence of a timebound IPM plan	6
6	Percentage of cotton area under IPM	6
13	Percentage of farmers that use proper disposal methods for empty pesticide containers and contaminated materials including discarded pesticide application equipment	4
	Human exposure	
14	Percentage of farmers following recommended practices for pesticide mixing and application, and for cleaning of application equipment	4
19	Percentage of farmers with dedicated storage facilities that keep pesticides safely and out of reach of children	4
24	Percentage of workers applying pesticides who have received training in handling and use	4
25	Percentage of farmers having access to and using adequate protective equipment	4
	2) Water Management	

The remnants: not used at all

No acc. to report	Subject
	A) Environmental Sustainability
	1) Pest and Pesticide Management
	Human exposure
23	Total area and percentage of cotton area involving vulnerable persons applying pesticides
	2) Water Management
	3) Soil Management
	Soil fertility
56	Use of soil sampling for N, P, K
	B) Economic Sustainability
	6) Economic Viability, Poverty Reduction and Food Security
	Economic viability
113	Returns on investment
114	Debt to asset ratio
	Food security
125	Total number and percentage of cotton-farming household members with calorie intake below the international norm
	7) Economic Risk Management
139	Cotton yield volatility
141	Percentage of farmers with measures in place to manage price risks by type
	C) Social Sustainability
	8) Labour Rights and Standards
	Employment conditions
157	Total number and percentage of workers being subordinated by forced labour
165	Percentage of farmers/workers with access to sanitation facilities
	Social protection
167	Percentage of active cotton farmers and workers contributing to a pension scheme and/or eligible to receive a pension

Objective 2: Individual experience with the indicators

Green:	**The indicator could be utilized as described in the original indicator study and thus can be maintained as it is.**
Yellow:	**The indicator is of complex nature (based on the combination of several raw data) and bears the risk to be collected in very different ways by different countries or enumerators. As already proposed in previous SEEP discussions it may be reasonable to create a guidance manual for the indicator framework, that helps to describe the data collection for such indicators.** **Therefore the corresponding formulation in the column was chosen as "guidance helpful". An example for such guidance was elaborated for the pilot test in China: a data base tool that simplifies data recording and indicator retrieving was created.**
Red	**Indicators that have not been used in any of the 6 analyzed pilot**

Objective 2: Individual experience with the indicators

HELVETAS Swiss Intercooperation

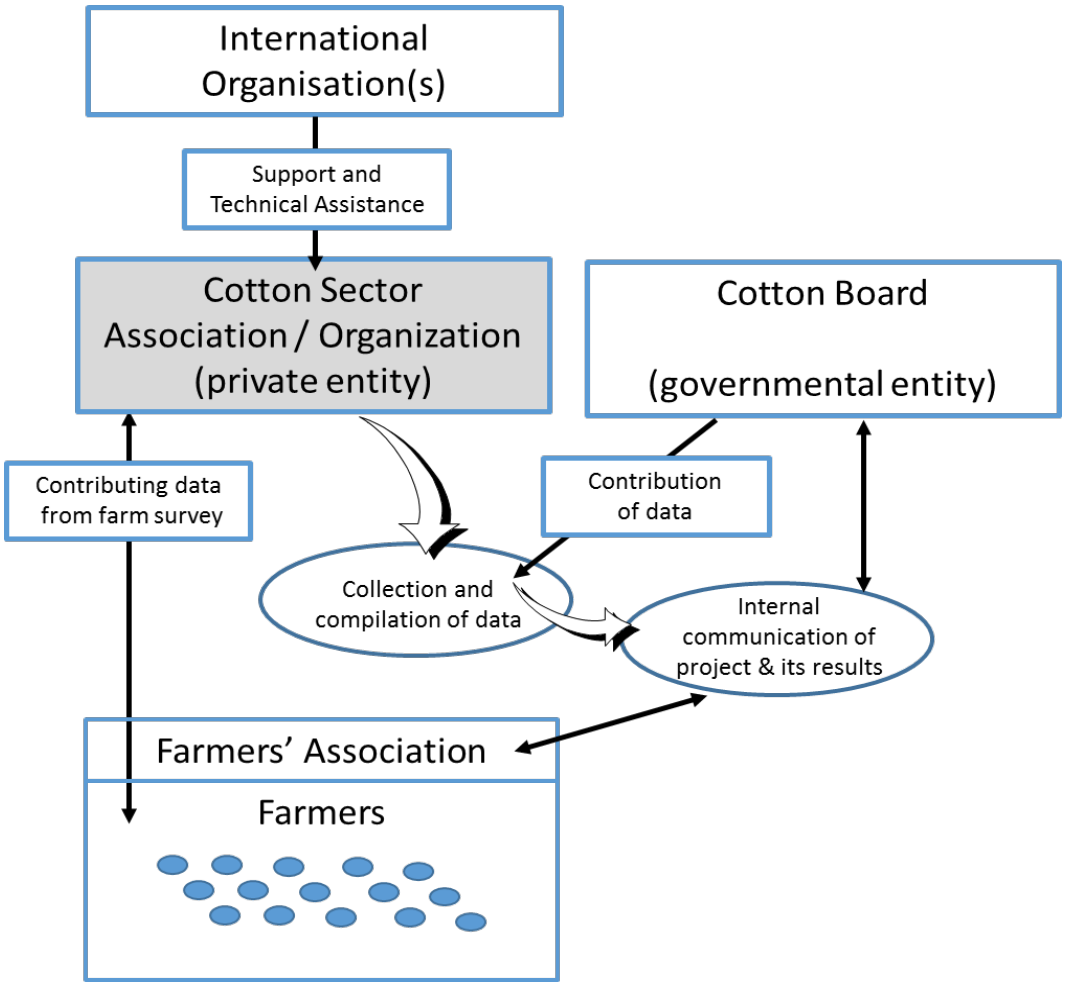
No acc. to report	Subject EXAMPLE !	Indicator was used in farm surveys	Indicator was used on aggregated level (beyond farm level)	Comments on indicator utilization or modification	Complex indicator based on several raw data	Suggestion
	A) Environmental Sustainability					
	1) Pest and Pesticide Management					
	Environmental contamination and integrated pest management					
1	Quantity of active ingredients in pesticides used	Yes	Yes		Yes	Guidance helpful
2	Quantity of active ingredients in highly hazardous pesticides used	No	Yes	Narrative reporting on change in use of residual herbicides noted (AUS)	Yes	Guidance helpful
3	Number of pesticide applications per season	Yes	No		No	Maintain as it is
4	Percentage of treatments that involve specific measures to minimize non-target application and damage	Yes	No	Addressed in IPM guidance manual (AUS)	Yes	Guidance helpful
5	Existence of a timebound IPM plan	Yes	No		No	Used in all pilots, maintain as it is

- **Guidance helpful: 39 indicators**
- **Maintained: 31 indicators**
- **Unused: 10 indicators**

Newly proposed indicators

Additional indicators utilized by the pilot project in Australia
Additional indicators in the field of environmental sustainability
Soil health - practice change
Soil health - sodicity
Vegetation - condition and connectivity
Complaints to regulator
Additional indicators in the field of economic sustainability
Total area planted (national), dryland and irrigated
Total amount of cotton produced (national), dryland and irrigated
Fibre quality (by length)
Gross value of cotton lint
Regional gross value of cotton production
Investment in R&D
Additional indicators in the field of social sustainability
Total number of cotton farmers
Highest post graduate school qualification of cotton farmers
Number of people employed
Age of cotton growers
Number of delegates to biennial cotton conference
Adoption of new technologies
Additional indicators utilized by the pilot project in US
Additional indicators in the field of environmental sustainability
Were there any cotton fields that did not require foliar insecticides in the most recent year you grew cotton?
What efforts are being made on the farm to enhance wildlife habitat?
What was the total rainfall, in inches, received during the cotton growing season (in-season rainfall)?
What type of winter cover was used?
How often is cotton planted on this field?
What is the primary tillage method used on this field?
What were moisture conditions at picking?
How many miles is this field from the gin?

Organizational Model - Zambia



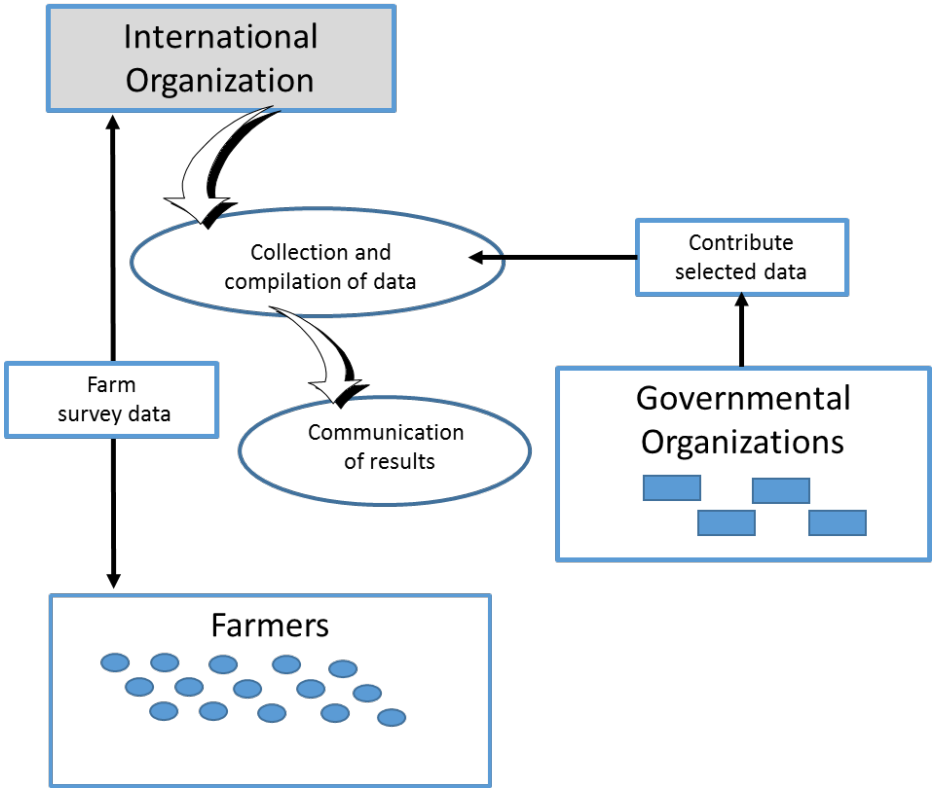
1. **Convening of all stakeholders for endorsement and collective scoping for the project.**

2. **Focus on identification of gaps and improvement options in the cotton farming systems.**

3. **Strong bond between governmental and private sector cotton organizations.**

4. **Technical and financial assistance by international organizations for the pilot run.**

Organizational Model – Latin America



- **Cross-country approach with harmonized indicator selection and correspondingly harmonized survey thereby allowing for systematic comparisons.**
- **Results utilized for allowing to create fact-based sector policies.**
- **Utilization of collected data for the of national farmer databases (that did not exist before).**

Summary of findings

- The number of indicators utilized in the 6 analyzed pilot tests ranged from 24 to 40. A figure which is underpinned by the pilot test in Benin, which utilized 39 indicators.
- All pilot test utilized between 30% and 40% of the originally proposed 80 indicators.
- The number of indicators that required a modification or local adaptation ranged between 6 and 12.
- The number of newly proposed indicators ranged from 8 to 16.
- 23 indicators were utilized in 4 or more pilot tests, which represents ca 29%.
- 10 of the proposed 80 indicators and thus 12.5% were used in **5 or even 6** pilot tests.
- Also 10 of the proposed 80 indicators and thus 12.5% were utilized in **none** of the pilot tests.
- For 39 indicators of the original set of 80 a further guidance was regarded as helpful, whereas 31 indicators might be maintained as they are. A database tool that focuses on raw data collection and processing was developed with the pilot test in China.

Major conclusions

- **The utilization of the indicator framework allows for identification of improvement options in all areas of cotton farming and all pillars of the sustainability concept.**
- **The framework allows to act as crystallization point to convene national cotton stakeholders and align them to collaborate with one overarching goal.**
- **The implementation of the framework allows for internal as well as external communication of changes on the way towards sustainability.**
- **The utilization of the indicators collects a multitude of relevant data that can also be taken up by academia and thus find their way into scientific coverage of the topic.**
- **The data generated by the utilization of the indicator framework allow for cross-country comparisons and benchmarking and thus for an even increased opportunity to identify entry points for improving the cotton farming systems.**
- **The experience of the pilots showed that the latest and statistically reliable information about cotton farmers can be compiled. Based on this it becomes possible to decision makers to promote strategic changes within the sector.**

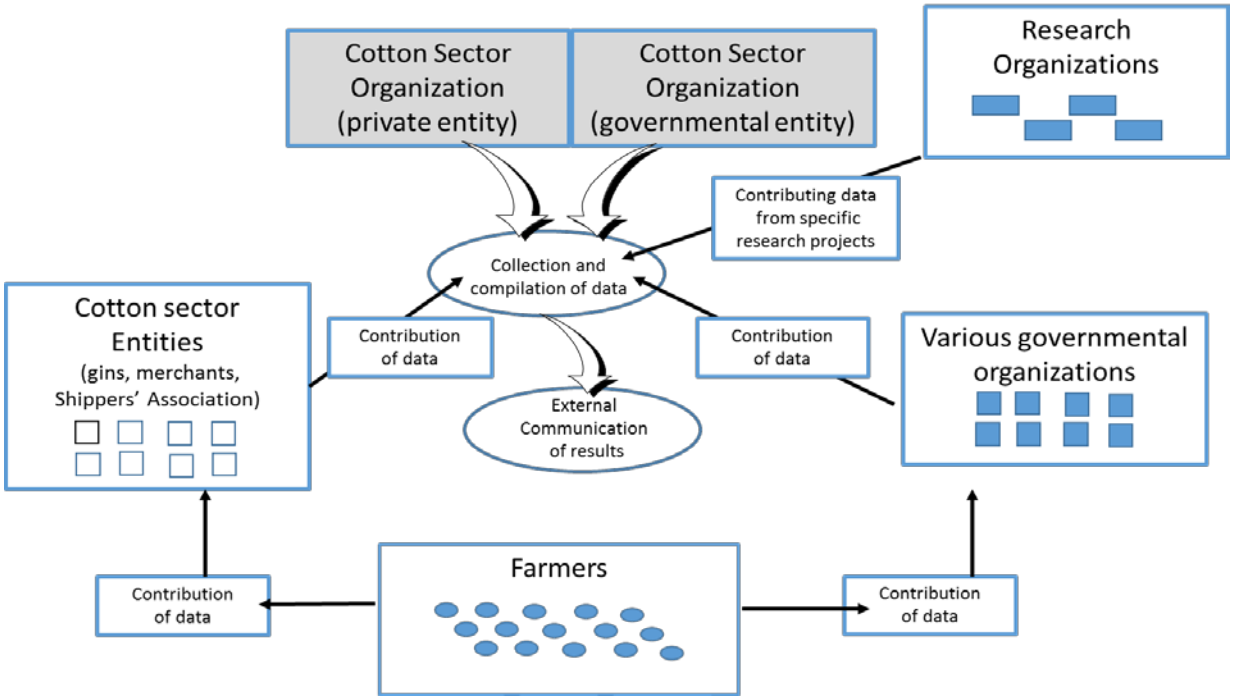
Proposed next steps

- **Integration of the experiences of the ongoing pilot tests (Argentina, Colombia, Ecuador) and the pilots not fully covered yet in the report at hand (Francophone Africa, China).**
- **Compilation of the survey questions utilized for the individual indicators (already started within this interim evaluation) and collaborate with COSA to refine them.**
- **Convene delegates responsible for the various pilots (virtually or face-to-face) and discuss advantages and disadvantages of several organizational models.**
- **Allow the raw data tool developed by CIRAD based on the pilot test in China to be expanded to a general tool applicable also in other country contexts.**
- **Develop a guidance manual for the utilization of the different indicators and integrate the raw data tool mentioned above.**
- **Support and assist the conduction of further pilot tests (see also following slide).**

Proposed next steps

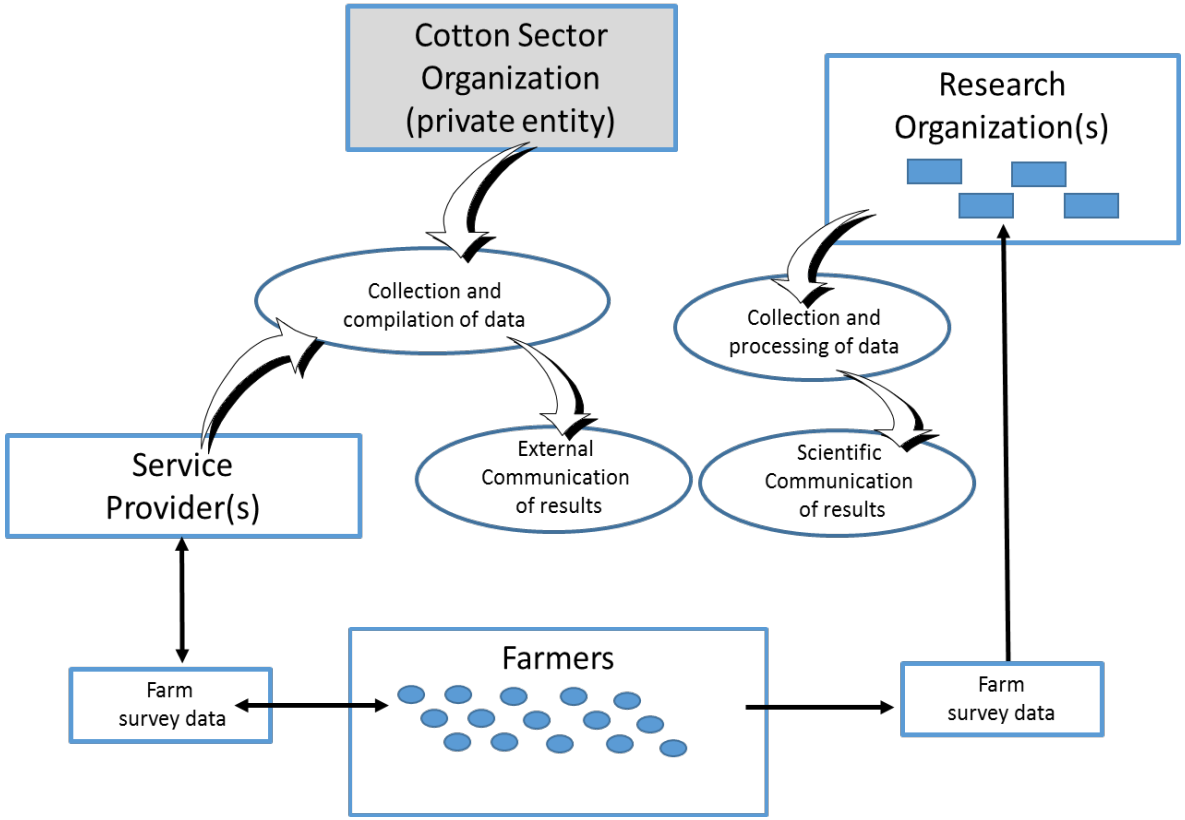
- **Pilot test should prepare to use a maximum of 40 indicators to be economically reasonable.**
- **The most frequently used indicators revealed in this study should be utilized in any case.**
- **Pilot test should be kicked off by a stakeholder workshop that convenes a broad range of national cotton stakeholders**
- **The actors implementing the pilot test should conduct a thorough screening of databases and agricultural data monitoring schemes already existing in the country.**
- **It might be a reasonable idea to develop the proposed guidance manual for the indicator utilization in collaboration with further tests.**
- **Pilot tests should take into account already elaborated survey questions and developed tools for raw data processing.**

Organizational Model - Australia



1. **Governmental and private sector cotton organization share the lead for the project including the external communication of results.**
2. **Updating of data intended on a 5-year cycle aiming to monitor progress.**
3. **Strong embedding of existing data monitoring schemes, which are implemented by other primarily governmental authorities.**
4. **Critical open aspects and questions covered by specific research projects.**

Organizational Model - US



- **Clear lead by one cotton organization.**
- **Integration of service providers for farmer outreach.**
- **External communication of results and embedding into LCA databases.**
- **Integration of scientific organization to allow for additional scientific communication and conclusions.**