Literature Review and Research Evaluation relating to Social Impacts of Global Cotton Production for ICAC Expert Panel on Social, Environmental and Economic Performance of Cotton (SEEP)

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Executive summary

This review seeks to provide an accurate and up-to-date picture of the information sources available on the 'social impacts' of cotton cultivation in ten focus countries, identified as the largest producers by volume. These countries are: China, India, USA, Pakistan, Brazil, Uzbekistan, Turkey, Greece, Syria and Burkina Faso.

'Social impacts' are understood in this review to connote two categories of information: first, data on the 'positive' impacts relating to the role of cotton production in creating jobs and supporting livelihoods, and second, on the 'negative' impacts relating to illegal or unsustainable labour practices. Consistent with the ICAC (2006) definition[1], sustainable production is understood through this report as '*the ability to produce cotton today without diminishing the ability of future generations to produce cotton'*.

It is important to clarify that the term 'social' is understood within this research to connote issues relating in the first instance to employment, labour and working conditions in cotton cultivation, rather than broader community or social development impacts.

The primary conclusion of this initial assessment of available research data is that, for the majority of cases, *there is insufficient data*. This has two implications:

- in the absence of comprehensive or consistent data, it is difficult to establish the precise scale of 'positive social impacts' of cotton-growing through job creation
- there is frequently insufficient information or research to establish with any confidence that reports of 'negative impacts' are unsubstantiated.

It is well understood that cotton plays a most significant role for many millions of people around the world. This means most importantly that growing cotton provides work, and work provides vital income. While it is often asserted that cotton farming employs a substantial number of people, and that this work is important for these people's livelihoods, this situation is seldom well described.

The first part of review therefore provides the most detailed possible picture of the research and data available on employment in cotton-growing in the ten focus countries. While there are some detailed case studies, these are not easily amenable to generalisation. Overall, it is concluded that there is a paucity of reliable and comprehensive data on employment in cotton production, for the following reasons:

- there are several challenges in collating labour force data in agriculture per se, particularly in view of resource constraints
- farm labour may not be clearly or consistently reported in agricultural census data – due to differences in forms of labour and seasonality of work
- there is a lack of disaggregation of labour force data to a cotton-specific level
- there are methodological difficulties in determining 'crop-level' employment
- even where available, data may not be reliable or comparable

[1] Report Of The Executive Director Terry P. Townsend To The 65th Plenary Meeting Of The International Cotton Advisory Committee Goiânia, Brazil September 11-15, 2006. This definition is based on the Brundtland definition of sustainability.

It should be noted that there is a disparity in data availability between the ten focus countries, partly as a function of the resources available to allocate to data gathering, and partly as a function of the view of national institutions as to whether to make such data available. Hence there is significantly more detailed labour force data available on cotton production in the USA, Brazil and Greece, than in Syria, China or Uzbekistan. It is to be acknowledged that UN institutions such as FAO and ILO are actively seeking to improve the collection of labour data in agricultural sectors.

The review then presents data on labour intensivity in (non-mechanised) developing country contexts, to understand how cotton cultivation has been an important contributor to job creation where these jobs are most needed. It is noted that there are differing views in the literature with regard to the employment effects of technology (such as mechanisation and transgenic seed).

Reviewing research on forms of employment in cotton production, the report looks in detail at the common assumption that there exist two main forms of employment in the sector: hired labour on large farms, and family labour on smallholdings. In particular, much research suggests that there is more likely a continuum from 'formality' to 'informality' in employment. In view of the important questions relating to these issues, the review notes that developing a better understanding of the scale and form of hired labour retention in smallholder cotton cultivation may be a priority area for further SEEP consideration, and is included in the recommendations below.

The second half of the review looks at the emerging body of research which focuses on quality, rather than quantity, of labour in cotton cultivation. While it is self-evident that without jobs there are no 'labour standards', this research suggests that a sole focus on job creation in global cotton cultivation is insufficient to explain its 'social impacts'.

The review notes that the qualitative issues relating to labour standards are not readily amenable to representation in purely quantitative or numerical terms, although survey-based quantitative data provide one important source of information. Moreover, it is observed that much of the literature on 'negative social impacts' may be perceived as 'motivated'. In part this is because organisations with an interest in understanding and addressing negative 'social impacts' may have different political and economic interests to those who are answerable to the accusations that they generate, and both parties may understand each other's position poorly. This is particularly amplified where such reports or allegations assume a geo-political dimension, or bring about economic pressures in their effects on trading relations.

In view of these complexities, the review seeks in the first instance to present a clear picture of agreed and recognised international standards on labour practices – the 'core conventions' of the International Labour Organisation (ILO) – and their application to cotton cultivation.

It is further noted that, in the 1998 Declaration on Fundamental Principles and Rights at Work, ILO member states committed to respect, promote, and realise these core labour standards, whether they have been ratified or not. Therefore, regardless of ratification, all member states of the ILO are bound to respect the core ILO conventions. All ICAC member countries are members of the ILO.

The study then presents an analytical overview of national legislation on employment and occupational health and safety relevant to cotton production in the ten focus countries, and explains how national legislation applies to cotton production (and agriculture more generally) in these countries.

Given that small cotton farms use almost all of the global labour employed in cotton to produce 65% of the world's output on 72% of the planted area[2], the study also relates questions raised in the literature to broader socio-economic concerns which are not always included within the (labour-oriented) scope of this review. Principal among these issues are: access to information (relating to market intelligence, production practices and technology), access to markets, access to credit, and the capacity to organise so as to defend and promote collective interests.

The review suggests that there is currently insufficient research to make any comparative assertion with regard to practices in cotton cultivation vis-à-vis other agricultural sectors. What is clear from the review, however, is that cotton, as a 'cash crop', commonly provides the best – and indeed only – point of access to global markets for a significant number of developing country producers, and that the work entailed by this opportunity is both labour-intensive and arduous. This is particularly the case in those developing countries where communities' livelihoods most depend on the revenues generated through cotton cultivation.

However, there is considerable research detailing the ways in which people's participation in cotton growing is not always to their benefit, and may assume hazardous, exploitative or unproductive aspects. The review provides a summary of the key literature relating to health and safety, child labour, forced labour, and the role of women in cotton cultivation, in particular.

Given that the issue of child labour is usually at the forefront of discussions when dealing with labour concerns in the cotton sector – and is reported in many of the countries covered in this review – particular emphasis is placed on analysing the international and national legal framework of child labour.

It is important to understand what is *not* meant by the term child labour, as defined by the International Labour Organisation[3]. Young people's participation in economic activity that does not affect their health and development, or interfere with their schooling, is generally regarded as being something positive, and may assist in helping them develop skills necessary for subsequent work.

The report seeks clearly to distinguish between the characteristics of different research on child labour in different focus countries. In particular, it is clearly noted in most research on children's participation in cotton harvesting in Uzbekistan, that the circumstances of this work differ markedly from children's participation as part of a family unit in rural cotton-growing communities in West Africa and South Asia. The key differentiating issue highlighted in the vast majority of reports on child labour in Uzbek cotton cultivation is the alleged role of the state in coercion of children and young workers.

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[2] The Contributions Of Cotton To Economy And Food Security In Developing Countries, P. Fortucci (Commodities And Trade Division – FAO), ICAC Conference on Cotton and Global Trade Negotiations, Washington DC, USA, 8-9 July, 2002

[3] For full definition see 4.3 *Child labour*

Moreover, it is made clear that it falls outside the scope of this desk-based review to assert the comprehensiveness and veracity of all case study findings with regard to 'negative social impacts'. In order to review or refine these findings, alternative in-country research with equal or more adequate methodology and resources would need to be undertaken.

In concluding, this review of some 168 sources suggests that there are significant negative 'social impacts' associated with cotton cultivation. It is noted that these are increasingly acknowledged as pertinent to the broader debate on the sustainability of the sector, not least due to increasing interest among a broad swathe of consumers in the provenance of the goods they purchase.

Equally, though, cotton is for many millions of people in some of the world's poorest countries a vital – and unique – link to the global economy. A key factor emphasised in the literature studied here is that the vast majority of people whose livelihoods depend on cotton cultivation are located in developing and emerging economies, working on small, predominantly family-based farms.

Hence, the fundamental issue raised by this summary of social research materials is that the positive impacts of cotton production can and should be the *answer to* many of the negative impacts with which it is associated: by creating decent jobs, which enable people to work themselves – safely, equitably and in dignity – toward improved economic circumstances. However, the literature reviewed in this study suggests that considerable further work needs to be undertaken to ascertain – and realise – the circumstances under which all people involved may effectively benefit from their participation in cotton-growing.

In particular, it is widely observed in the literature that the majority of 'labour rights impacts' categorised here emanate from the non-application or ineffective enforcement of wholly adequate legislation (exceptions are noted in the report[4]). It is commonly not therefore a question of imposing 'external' norms, and thus infringing the sovereignty of the state's legal machinery, but rather of clearly demonstrating and communicating compliance with existing regulation. Here, SEEP – as a sectoral expert body – and the ICAC – as an advisor to governments – may have a particularly insightful role to play in recognising and addressing the social impacts of cotton cultivation worldwide.

[4] See 3.4 *National labour legislation and its application to agriculture*

Recommendations

SEEP may wish to consider the following.

In view of the lack of data relating to all social impacts of cotton cultivation; in order to prosecute a clearer case for the positive social impacts of cotton cultivation with regard to job creation; and to provide a more informed response to reports of unsustainable labour practices in the sector:

- To discuss with the ICAC secretariat the potential to include basic survey questions relating to labour within information gathering activities with members. This could include: number of farmer-employers and number of workers, number of labour-days ('man-days') required per hectare/cotton, and labour costs (including hired labour and family labour expressed as an opportunity cost where possible)
- To liaise with FAO on its work on agricultural labour and workforce statistics
- To pursue further research on the relationship between the positive impacts associated with job-rich growth in labour intensive sectors such as small-scale cotton farming, and the effects on labour of technological developments, including mechanisation and transgenic technologies; and to assess SEEP's position in view of this analysis
- To pursue further research on the form and frequency of 'employment' of non-family labour within farming systems characterised by family smallholdings
- To consider elaborating a template for analysing labour dynamics within cotton farming in ICAC member countries, potentially following the good practice cited in this report (such as ILO research[5] seeking to understand the employer perspective on agricultural labour practices, as a basis to propose appropriate, achievable and pragmatic improvement actions)
- To discuss with ICAC the potential to ascertain from member states the extent to which work activities in the cotton sector are categorised under national labour legislation as 'hazardous', and to seek to harmonise understanding and discussion of this issue, particularly in view of the internationally-recognised prohibition on 'hazardous work' for under-18s enshrined in Convention 182 of the International Labour Organisation (which calls upon ILO member governments – which include all ICAC members – to define activities and occupations which give rise to such hazardous work)
- To discuss with the Better Cotton Initiative (BCI) and Instituto Algodão Social (IAS), as well as other relevant initiatives, their approach and best practice methodologies in minimising negative social impacts in cotton cultivation

With regard to labour costs:

- Where possible, mention has been made of labour costs identified in the literature reviewed. Any subsequent analysis of labour costs undertaken by SEEP will be meaningful only to the extent that it takes into consideration the national and regional economic context of labour. The standard means of comparing labour costs is to 'equalise' (ie adjust) absolute costs as a function of Purchasing Power Parities (PPP)[6], recognising that PPP are a useful, if rough, indicator of differences in the cost-of-living in different countries.

[5] Labour and financial markets from the employers' perspective: The case of Ranga Reddy District in Andhra Pradesh (ILO, 2006)

[6] One example is the OECD Labour Compensation per Employee/Hour ($US PPP adjusted) – available at http://stats.oecd.org/wbos/Index.aspx?queryname=430&querytype=view

- There is significant scope to understand better the labour cost implications of cotton-growing in those regions characterised by family smallholdings, where the family is the economic unit and the primary labour input. There are two main avenues for further research: firstly, ascertaining the degree to which, and means by which, household revenues are distributed to household members in view of their labour contribution; secondly, establishing the means to calculate the 'opportunity cost' of family labour which is not directly remunerated.

With regard to determining the scope of SEEP's analysis of 'social impacts':

- The mandate for this review gives strong direction toward a focus on questions relating to employment and labour. In terms of the potential spheres of negative impact, this focus entails the following: breach of international labour standards; non-compliance with national legislation; and impacts on physical well-being and safety. SEEP may wish to consider if this focus is adequate to capture the range of socio-economic issues, positive and negative, associated with smallholder cotton farming. Principle among these are access to information (relating to market intelligence, production practices and technology), access to markets, access to credit, and the capacity to organise to defend and promote collective interests.
- To this end, it may also be useful for SEEP to take cognisance of the "many indirect effects [that] can be observed in areas where cotton production has been successful for several decades [the example is from West Africa]: more schools, more dispensaries, better water supply, more retail stores, more radio sets and motorcycles… Unfortunately, harmonized and repeated multi-local studies are still lacking to properly assess these positive indirect impacts."[7]

[7] Organization in agro-processing, economic growth and poverty alleviation in the case of traditional tropical export commodities : The case of cotton in Western Africa in: Case Studies Of Agri-Processing And Contract Agriculture In Africa, Denis Sautier, Hester Vermeulen, Michel Fok, Estelle Biénabe, RIMISP – Latin American Center for Rural Development, November, 2006

Glossary

ABRAPA	Brazilian Association of Cotton Producers
AFZ	African Franc (CFA) Zone
AMPA	Mato Grosso cotton producers' association (Brazil)
APROCA	African Cotton Producers Association
CFA	West African Franc
CFC	Common Fund for Commodities
CIWCE	Centre for the Improvement of Working Conditions & Environment, Directorate of Labour Welfare Punjab (Pakistan)
CLT	Consolidation of Labour Laws (Brazil)
CONTAG	National Rural Workers' Confederation (Brazil)
FADN	Farm Accountancy Data Network (European Union)
FAO	Food and Agriculture Organization of the United Nations
FACUAL	Mato Grosso cotton growers' support fund (Brazil)
FFS	Farmer Field School
FLA	Fair Labor Association (USA)
FLO	Fairtrade Labelling Organizations International
FLSA	Fair Labor Standards Act (USA)
IAS	Mato Grosso Social Cotton Institute (Instituto Algodão Social - Brazil)
ICG	International Crisis Group
IFAD	International Fund for Agricultural Development
ILO	International Labour Organisation (UN)
ILO-IPEC	ILO International Programme on the Elimination of Child Labour
INCANA	Inter-regional Cotton Network in Central Asia and North Africa
INERA	Environmental and Agricultural Research Institute (Burkina Faso)
IPM	Integrated Pest Management
IREWOC	International Research on Working Children (Netherlands)
IRFT	International Resources for Fairer Trade (India)
IRIN	Integrated Regional Information Networks (UN Office for the Coordination of Humanitarian Affairs)
ISEAL	International Social and Environmental Labelling Alliance
ITF	International Task Force on Commodity Risk Management in Developing Countries
ITUC	International Trade Union Confederation
IUF	International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations
MSI	Multi-Stakeholder Initiative
MTE	Brazilian Labour Inspectorate
NABARD	National Bank for Agriculture and Rural Development (India)
NASS	National Agricultural Statistics Service (USA)
NRSP	National Rural Support Programme (Pakistan)
OECD	Organisation for Economic Co-operation and Development
SASA	Social Accountability in Sustainable Agriculture
SDPI	Sustainable Development Policy Institute (Pakistan)
SIMPOC	Statistical Information and Monitoring Programme on Child Labour (ILO)
SOFITEX	Burkinabè Cotton Company (largest of three)
TCP	Trading Corporation of Pakistan
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
UNHRC	United Nations Human Rights Council
UNICEF	United Nations Children's Fund
UNPCB	Burkinabè cotton producers' association
UNRISD	United Nations Research Institute for Social Development
USDA-FAS	US Department of Agriculture Foreign Advisory Services
WHO	World Health Organisation
WFCL	Worst Forms of Child Labour (defined in ILO Convention 182)

1 Introduction

Background

During the 65th ICAC Plenary Meeting in 2006 in Goiania, Brazil, the Committee directed the Secretariat to form an Expert Panel on the Social, Environmental and Economic Performance of the world cotton industry. It was determined that 'the Expert Panel will provide objective, science- based information to the Committee on the negative and positive aspects of global cotton production and will make recommendations for further action as appropriate'.

At its first meeting in Lubbock, Texas, USA, in September 2007, the Expert Panel agreed that, for social issues, 'a literature review should be conducted before the Panel develops a more specific list of issues for data gathering'.

Objectives

The aim of this research is to enable the SEEP Expert Panel to determine a frame on social and labour issues, by identifying and evaluating the key existing data and information sources on the social impacts, positive and negative, of global cotton cultivation. This research focuses solely on cotton cultivation within the boundaries of the farm, and does not address working conditions in other parts of the value chain such as ginning or spinning.

Scope

It is important to clarify that the term 'social' is understood within this research to connote issues relating in the first instance to employment, labour and working conditions in cotton cultivation, rather than broader community or social development impacts. However, where employment-focused research also identifies broader social development impacts – such as financial inclusion/availability of credit through participation in cotton farming – these are noted and summarised in the research.

It should be noted at the outset that the phenomena which are the subject of this review are not readily amenable to representation in purely quantitative or numerical terms, although survey-based quantitative data provide one important source of information. Such phenomena involve complex qualitative aspects which are typically best captured by case study methodology, alongside survey-based techniques. These phenomena are also potentially contentious and therefore subject to dispute, regardless of the source, method and quality of the research.

In this context, this research cannot seek so much to provide a baseline dataset, as to establish an overview and categorization of the most significant social science studies of labour/social impacts in cotton cultivation in selected regions, to evaluate this research and to suggest areas where greater information and research is required, and potential ways for ICAC to support the development of means to collate this information and research. It should be noted that where data are available – such as children's participation in work, and health and safety – these are commonly not disaggregated beyond the level of 'agriculture sector' (the standard statistical occupational category is 'agriculture, forestry, and

fisheries')[8]. This review seeks clearly to identify where research is cotton-specific, and if it is not cotton specific, to highlight the relative importance of cotton within the agricultural sector in the country in question.

It was agreed with ICAC that this literature review should focus on a defined number of countries. Ten countries were selected, in view of production volume, as follows:

Geographical scope for literature review, by production volume

	000s metric tons / year
China	6608
India	4671
USA	4097
Pakistan	2275
Brazil	1354
Uzbekistan	1170
Turkey	845
Greece	340
Syria	318
Burkina Faso	290

Source: ICAC May 2007

[8] This is the category used in ISIC (International Standard Industrial Classification of All Economic Activities). See 'Agricultural labour force data' below for further detail.

1.1 Literature overview

Methodology

A total of 168 publications were identified during the review, including primary data sets, research papers, literature reviews and project reports. The materials were identified according to the following methodology:

- Establishing the availability and scope of national and comparative agricultural census data (with the assistance of FAO)
- Establishing the availability and scope of national agricultural labour force survey data (commonly through engagement with national Ministries of Labour and/or Agriculture)
- Collating materials provided by key institutions, including national governments and intergovernmental agencies (FAO, ILO, World Bank, UNEP, UNDP, UNICEF, WHO)
- Interrogation of ICAC research archive up to 2007, provided by SEEP – using keywords ("labour/labor","social", "employment", "jobs", "health and safety/OSH", "workers", "workforce", as well as ten focus country names)
- Identification of appropriate peer-reviewed journals (principally, *International Journal of Occupational and Environmental Health*,) and search within archives of these journals (using keywords "cotton" and ten focus country names)
- Consultation with key academic sources, including SEEP panel members (see Annex 1)
- Consultation with ILO Global, Sub-Regional and Country offices and departments appropriate to all ten focus countries (see Annex 1)
- Engagement with civil society organisations relevant to social impacts – IUF global trade union, International Labor Rights Fund, Oxfam, SNV, Helvetas (see Annex 1)
- Archival search of US Department of Agriculture Foreign Advisory Services crop-specific reports on cotton, and crop-specific reports for each focus country
- Archival search of US Department of State Human Rights reports for each focus country
- Archival search of ITUC labour rights reports for each focus country
- Free web search using (combinations of) keywords: "cotton / cotton / algodão / algodón / baumwolle", "employment", "workforce", "workers", "labour/labor", "labour standards/labour rights", "child labour", "forced labour", "bonded labour", and ten focus country names
- Analysing existing materials at the consultant's disposal on basis of previous work in the sector, including Better Cotton Initiative stakeholder consultation research, and guidance and monitoring tools used by Instituto Algodão Social (Brazil)

The materials identified through this process were then filtered, according to the following selection criteria:

- Including only the most 'scientific' research, where this term is understood to connote primary research undertaken according to sound practice in data collection and analysis. *40% of the research reviewed reports primary data, mostly in the spheres of labour force statistics and occupational safety and health impacts.*
- Excluding journalism and media reports, except where these are themselves based on demonstrably sound social research methodologies (eg survey/questionnaire, case study, monitoring/auditing, (semi-)structured interview)
- Including only research most closely relevant to issues specific to cotton cultivation

The materials reviewed vary significantly in form and methodology. 60% of all materials reviewed directly address positive and/or negative social impacts in the cotton sector in one or more of the focus countries. (See 'Evaluation of Research' for an explanation of the status of different forms of research.)

These materials have been categorised within a spreadsheet database. The research is organised by country, theme, name of the publication, date, author, form of research and research methodology, focus on agriculture/cotton, geographical region covered and, where available, web link. Each publication was then summarised to give a broad overview of the key findings and issues raised.

The materials identified are derived from more than 80 different sources, including academic and technical journals, studies undertaken by international and intergovernmental organisations, national government census data, as well as studies by non-governmental organisations and independent research centres.

Accounting for some 17% of all materials identified, the International Labour Organisation (ILO) is the single most significant source of relevant data and research for this review. Journalism and other media articles were retained only in a handful of cases where they referred to the findings of established research, or where they shed particular light on a relevant issue. It should therefore be noted that, with the inclusion of the entirety of journalistic materials, the database would be much longer, and potentially would give rise to a different profile in terms of emphasis on theme and country[9]. See Annex I for an overview of consultees and information sources.

Profile of research identified

This section characterises the focus of the various studies and materials identified. It should be understood that the profile of the research literature reviewed *in no way constitutes a direct proxy* for the preponderance or absence of particular positive or negative social impacts in particular countries. Rather the profile of the literature reviewed is a complex function of:

- The availability of (primarily soft-copy) research to a research team based in the UK, with English, French and Portuguese language skills (particularly in relation to access to research materials on cotton cultivation in China and Syria) – reflected also in the response rate to requests for assistance in identifying research
- The establishment of research and data collection infrastructure, and expertise, in the various countries looked at (particularly with regard to up-to-date and comprehensive agricultural census data)
- The scope and focus of institutions and organisations with an interest in the social sustainability of cotton cultivation (eg where ILO has undertaken labour standards assessment work)
- The existence or otherwise of a local / national / regional governance climate conducive to social research on matters which may be sensitive or contentious.

[9] While an assessment of global media interest is not the function of this work, it is suggested that such an evaluation would have some value in ascertaining the particular profile of 'reputational risk' to the cotton industry – to the extent that global media influence actors as varied as consumers, governments and trading partners – and hence in guiding the response of the industry.

Of the 168 entries established in the accompanying database (see Annex III for overview), 133 are country-specific entries. Below is the distribution of entries between the ten focus countries. India accounts for the largest single proportion (20%) of all country-specific publications, and Greece the fewest (2%).

Distribution of research database entries, % of total entries by country

India	20%
Burkina Faso	17%
Pakistan	12%
Uzbekistan	11%
China	8%
USA	8%
Brazil	8%
Turkey	8%
Syria	6%
Greece	2%

The prevalence of themes attributed to each publication is indicated below. The single most predominant theme was child labour, addressed in 44% of the materials reviewed. The second most prevalent topic was labour force data (broadly defined to include census statistics, workforce numbers, labour costs, and research on forms of employment) which was the main theme in 29% of the research. It should be noted that the issue of pesticides – namely, the human consequences of pesticide exposure as a result of cotton cultivation – was expressly addressed as a 'social impact' in 21% of the materials.

Distribution of research database entries, % of total entries by topic/theme

Main theme		**Subsidiary theme**	
Child labour	44%	Pesticides	20%
Labour force data	29%	Substantive working conditions (eg hours, overtime, contracts)	12%
Health and Safety	28%	Wages/Income	11%
Gender	16%	Migrant workers	5%
Forced and bonded labour*	13%	Hours of work	4%
Result > 100% as some materials cover more than one topic		Family labour	4%

* Note that the substantial body of research dealing with forced/bonded child labour is commonly characterised under the heading 'child labour', but could be meaningfully included the heading of 'forced labour' also.

The table below represents a statistical aggregate profile of the research identified.

	Brazil	Burkina	China	Greece	India	Pakistan	Syria	Turkey	USA	Uzb	Total
Number of publications	10	23	11	3	26	16	8	11	10	15	133
Main Themes											
Child labour	4	8	3	2	13	3	4	9	0	12	58
Labour cost	3	3	1	3	3	2	0	0	3	2	20
Labour force	1	2	2	1	3	1	1	3	4	0	18
Health & safety	3	5	3	0	9	7	0	0	7	3	37
Gender	0	1	3	0	7	4	1	3	0	2	21
Forced labour	3	0	0	0	4	6	0	0	0	4	17
Subsidiary Themes											
Pesticides	3	3	2	0	5	8	0	0	4	3	28
Working condition	2	1	1	0	2	0	1	2	3	4	16
Wages/ Incomes	3	3	2	0	1	2	0	0	1	3	15
Hours of work	0	1	1	0	0	1	1	0	1	0	5
Migrant workers	0	0	2	0	1	0	1	0	3	0	7
Family labour	0	1	1	3	0	0	0	0	0	0	5

Total by theme greater than total number of publications as publications may cover more than one theme

Evaluation of research

It should be noted that a substantial proportion of the literature reviewed takes the form of case study or 'bearing witness', and may be aligned to an advocacy position. This may be because many of the organisations most likely to provide resources to undertake social research on the social sustainability of cotton – or equally on labour rights in agriculture – are those organisations which seek to establish that current practices are not yet sustainable. To this degree, such literature may be perceived to be 'motivated'.

One important distinction should be made here, however, between the research of the International Labour Organisation (ILO) and non-governmental advocacy organisations. The ILO, whose research work is the bedrock for much of this study, is a UN agency established on a tripartite structure, encompassing governments, employers and workers' representatives. As such, the ILO does not prosecute a particular agenda specific to a political or economic constituency.

Moreover, the ILO has produced the most edifying research on some of the complex issues in question here. In particular, research undertaken on labour dynamics in the Indian state of Andhra Pradesh suggest a useful framework for analysis, to which SEEP may wish to pay attention. The research[10] gives consideration to the economic context of a range of actors – expressly including farmer-employers – in order to give a full picture of the dynamics which

[10] Labour and financial markets from the employers' perspective: The case of Ranga Reddy District in Andhra Pradesh (ILO, 2006)

give rise to unsustainable labour practices – in this case, bonded and child labour, as well as unequal wage payments on grounds of gender. On this sound and comprehensive basis, the research is able to propose appropriate, achievable and pragmatic actions which can be undertaken to improve the social sustainability of agricultural labour in the region studied.

It is outside the scope of this desk-based review to assert the comprehensiveness and veracity of all case study findings. In order to review or refine these findings, alternative in-country research with equal or more adequate methodology and resources would need to be undertaken.

Reference is made wherever possible of the form of research – primary, secondary – alongside the methodology and data sources used. Throughout this review, explanation is given as to the reasons for difficulties in data collection – most of which will be familiar to ICAC – and for this reason, the primary conclusion of this initial assessment of available research data is that, for the majority of cases, *there is insufficient data*. This has two consequences:

- in the absence of comprehensive or consistent data, it is difficult to establish the precise scale of 'positive social impacts' of cotton-growing through job creation
- there is frequently insufficient information or research to establish with any confidence that reports of 'negative impacts' are unsubstantiated.

2 Employment in cotton cultivation

"Agriculture is not only about decreasing commodity prices and subsidies; it is also about employment opportunities and chances for poor people to work themselves out of poverty."[11]

It is well understood that cotton plays a very significant role for many millions of people around the world. For those involved in growing cotton – who constitute the focus of the literature reviewed in this study – this means most importantly that growing cotton provides work, and work provides vital income. While this relationship is often cited – that work in cotton farming employs a substantial number of people, and that this work is important for these people's livelihoods – it is seldom well described. Given the need to better understand work in the sector, and to describe its benefits and challenges more accurately, the aim of this part of the study is provide as detailed as possible of the research and data already available which might give a fuller picture of the scale of employment provided by cotton farming in the ten focus countries.

2.1 Agricultural labour force data availability – focus on cotton cultivation

"Cotton employs 7% of the total labour force in developing countries."[12]

"Although it is well-known that cotton production contributes to employment, especially in developing countries, it is difficult to obtain numbers of farmers actually employed."[13]

In order to ascertain the principal 'employment impact' of cotton cultivation – namely the number of jobs afforded to people working in cotton cultivation, and the forms of work – it is necessary to establish baseline workforce figures. The primary sources for such figures are commonly survey-derived data. Surveys are undertaken by a variety of national and international institutions – primary census data are collected by national Ministries of Agriculture and Statistics, and aggregated data are collected by international organisations such as the UN Food and Agriculture Organisation (FAO) and the International Labour Organisation (ILO), the UN agency which is concerned with employment and labour affairs.

At a national level, there are two main sources of census data: the population and housing census and the agricultural census. The primary statistical unit for the population census is the household, whereas for an agricultural census it is the agricultural holding: the agricultural sector is considered as being comprised of two distinct types of agricultural holdings, the household based holdings (family farms/smallholdings) and the non-household holdings (commercial farms/plantations).

The following figures, the most recent available from FAO, give a picture of the scale of the agriculture sector in the ten focal countries, and its importance as a source of employment within the national economy.

[11] World Employment Report 2004-5 - employment, productivity and poverty reduction, Chapter 3 Geneva: ILO, 2004
[12] Cleaner, greener cotton: Impacts and better management practices, WWF-International, October 2007
[13] The Contributions Of Cotton To Economy And Food Security In Developing Countries, P. Fortucci (Commodities And Trade Division – FAO), ICAC Conference on Cotton and Global Trade Negotiations, Washington DC, USA, 8-9 July, 2002

Table I: Agricultural labour force in 10 focus countries (2004)		
	Agricultural labour force in 000s persons	Agriculture as % of total labour force
Brazil	12,134	14.5
Burkina Faso	5,747	92.2
China	510,010	64.3
Greece	707	14.6
India	276,687	57.8
Pakistan	26,682	45.1
Syrian Arab Republic	1,636	26.2
Turkey	14,854	43.3
United States	2,791	1.8
Uzbekistan	3,029	25
Source: Food and Agriculture Organization of the United Nations (FAO). 2006. FAOSTAT Online Statistical Service. Rome: FAO. Available online at: http://faostat.fao.org (retrieved February 2008)		

However, it is to be observed at the outset of this review that there is very little census-derived data relating specifically to employment in cotton cultivation, and those data which are available may be of variable reliability. This is for several reasons:

A. There are several challenges in collating labour force data in agriculture *per se*, particularly in view of resource constraints.

There is an evident correlation between the availability of agricultural labour force data (as with other statistical data) and GDP per capita. Given the significant resources required to collate the information, the poorer an economy is, the less likely it is to report data. The Agricultural Labour Statistics from the World Census of Agriculture 2000 indicate that 11% of participating countries published no information on agricultural labour, with 89% of participating countries providing at least some information related to agricultural labour. It should be noted that only one of the ICAC focus countries – Pakistan – has participated in the pilot round of agricultural censuses.

However it should be noted that the UNFPA and FAO are seeking to promote more comprehensive agricultural data collection, and in particular FAO is seeking to coordinate the linkage of Population and Agricultural Censuses in the context of the programme for the World Census of Agriculture 2010[14].

B. Farm labour may not be clearly or consistently reported in agricultural census data – due to differences in forms of labour and seasonality of work.

Organisations collating agricultural labour force data increasingly attempt to distinguish between two types of labour inputs on agricultural holdings: labour provided by household or family members, and labour provided by paid outside workers. However, much of the literature review here suggests that there is not a clear cut distinction between 'family labour' and external 'hired labour'. This important issue is explored later in the review. As Fortucci observed in a paper for ICAC in 2002, "the extent to which family members are

[14] Economic Commission For Europe – Statistical Commission, Conference Of European Statisticians, Fifty-Fourth Plenary Session, Paris, 13-15 June 2006,Seminar On Population And Housing Censuses, *Session I: Exploring The Relationship Between The Population And Housing Census And The Agricultural Census*

involved is often difficult to define, particularly in developing countries. Differences in farm structures also result in great diversity in the extent of reliance on farm labour in the production process."[15] It is to be noted that the FAO 'World Programme for the Census of Agriculture 2010' suggests a list of supplementary items on farm labour for the census of agriculture based on the recommendations on labour statistics provided by ILO[16].

Moreover, the fact that labour requirements in cotton cultivation are largely seasonal greatly complicates the assessment of the labour needs. As FAO comments, "one weakness in agricultural employment data from the population census is that they are normally collected in respect of a person's main activity during a short reference period, such as a month. This may not identify all persons working in agriculture, because of the seasonality of agricultural activities." [17]

C. Lack of disaggregation to cotton-specific data.

Whereas FAO global agricultural data disaggregate data on holdings and coverage by crop for wheat, maize and rice (Supplement to the Report on the 1990 World Census of Agriculture), no such data is available for cotton.

D. Difficulties in determining 'crop-level' employment.

Cotton is frequently rotated and grown alongside other crops. Hence, there is some challenge in ascribing labour to a particular crop. Hence for Fortucci (op cit), "the labour force directly involved in cotton production at the farm level in the world could exceed one hundred million, although the numbers of persons in rural households benefiting from cultivation would be at least double that amount, even though many of these people would work for much of the time in crops other than cotton."

A similar challenge is also noted by a recent study which looks at the Greek cotton sector[18]: "[concerns arise] from the nature of family labour; for instance, if a farmer's sole employment is in farming, the full year's labour time will be allocated to it, while in reality only a proportion of labour time is actually spent on agricultural tasks. Accordingly the FADN [EU Farm Accountancy Data Network] estimates are likely to overestimate the amount of time spent on a particular crop and conversely underestimate the return to labour."

One methodology which is used to derive some form of crop-specific labour input data – in the absence of survey data – is to establish the annual number of labour-days required per hectare/acre and then to multiply this figure by the total crop coverage in the region in question. (Establishing the number of labour-days may in itself, of course, introduce a broad range of imprecision.)

[15] The Contributions Of Cotton To Economy And Food Security In Developing Countries, P. Fortucci (Commodities And Trade Division – FAO), ICAC Conference on Cotton and Global Trade Negotiations, Washington DC, USA, 8-9 July, 2002
[16] International Labour Organisation: Current International Recommendations on Labour Statistics, Geneva, 2000
[17] 'Consolidation of Agricultural Labour Statistics from Agricultural Censuses', Dirk U. Hahn, Report prepared for the Food and Agriculture Organization, Rome, December 2007
[18] Study On The Cotton Sector In the European Union, LMC Ltd for European Commission, 2007

E. Even where available, data may not be reliable or comparable.

Field experience related in the literature reviewed here suggests that "labour data collected may not always be reliable. Farm labour is a difficult concept to measure, given the complex arrangements for organizing farm work, and its seasonal nature. It is difficult to get useful information with just a few questions. Data such as labour input by family members, paid and unpaid farm labour, duration of work and non-farm work by household members are best collected in a more in-depth survey."[19]

Moreover, comparison of agricultural census data should be undertaken with some considerable caution: national definitions on certain key areas – such as 'working age' – apply. For instance, in (economy-wide) labour force statistics collected by the Government of Pakistan, 'working age' is defined as 10 years and above (although national employment legislation may entail a more restricted concept).

It is noted that ICAC is well aware of these data issues, from it experience in collecting data relating to production practices. A caveat noted by the ICAC Secretariat in 2005: "The ICAC Secretariat is aware that cost of production data come from actual surveys of farming practices in some instances such as the USA and Australia. While some countries undertake sample surveys, cotton researchers complete survey forms in others. The source of data for individual input costs or operations can vary greatly from country to country. When and how the opportunity costs of inputs and operations are calculated is also a source of variation among countries. Therefore, it is quite possible that the ICAC cost of production data represent potential costs rather than the actual costs. […] No opportunity costs are available for some inputs/operations. […] Family labour employed in field operations [is a] critical factor making comparisons difficult and sometimes invalid among countries."[20]

Hence, the current figures available to the review are based on a variety of methods, and include the most credible 'best estimates' where this is the only source. These are summarised below, together with an overview of the methodology used, where this is made explicit in the research cited. In general there are two preferred approaches to establishing estimates for employment levels in cotton cultivation:

1. to use the ratio of cotton area to total crop area as a proxy for the ratio of cotton labour to total agricultural labour
2. to establish labour input requirements (number of workers as factor of labour-days required per hectare/acre) and to multiply this by the area cropped in hectares/acres

In order to demonstrate the positive employment impact of cotton, further efforts need to be made to coordinate and collect employment data specific to cotton cultivation. This effort would need to recognise the substantial data collection challenges highlighted in this review. It is, however, noted that since the 2005 ICAC Production Practices survey, the questionnaire sent to national contacts has included a question on the number of cotton growers in the country in question, and this information has been provided by some member countries.

[19] 'Consolidation of Agricultural Labour Statistics from Agricultural Censuses', Dirk U. Hahn, Report prepared for the Food and Agriculture Organization, Rome, December 2007
[20] Cost Of Production In The USA And Other Countries, R. Chaudhry, ICAC, 2005

Table II: Data sources on 'persons working' in cotton cultivation in 10 focus countries				
	No. of persons	**Designation**	**Methodology**	**Source**
Brazil	160,000	'Farmworkers involved in cotton production'	Estimate	Dr. E. C. Freire, Dr. S. Barbosa, personal communication, 2008
	9,075	'Number of cotton growers in Brazil, 2008'	Estimate	Dr. E. C. Freire, Dr. S. Barbosa, personal communication, 2008
Burkina Faso	380,000	'Workers in cotton cultivation'	Unspecified	Shui, FAO, 2004[21]
China	46.2 million	'People involved in cotton production alone'	Estimate by Research Centre for Rural Economy	P. L. Pui Fung, Oxfam International, 2005
	40 million	'Farmers directly engaged in cotton cultivation'	Estimate on basis of farm size and crop coverage	P. Fortucci, FAO, 2002
	24 million	'People working in cotton production in 2000'	Estimate on basis of ratio of cotton area to total crop area	Importance Of Cotton For Employment In China, from: ICAC, March-April, 2004
Greece	79,700[22]	'Farmers involved in cotton farming'	Unspecified	LMC Ltd for European Commission DG Agriculture, 2007
	85,000	'No. of cotton growers'	Survey response	ICAC, Production Practices, 2005
India	4 million	'Cotton farmers'	Unspecified estimate	Gujarat Institute of Development Research, 2005
	4 million	'Cotton farmers'	Unspecified estimate	NABARD, 2006[23]
	60 million	'People dependent on cotton & the textile industry'	Unspecified estimate	NABARD, 2006 (ibid)
Pakistan	2 million	'Cotton pickers'	Unspecified	Karin Siegmann, SDPI, 2007
	1.3 million	'Cotton farmers'	Unspecified	Kooistra et al, 2006
	1.6 million	'Farmers in cotton production'	Unspecified	World Bank 'Pakistan: Growth and Export Competitiveness', 2006
Syrian Arab Republic	300,000	'Persons involved in cotton cultivation as seasonal workers'	Unspecified	SBA Ltd for Ministry of Local Administration & Environment, 2003
Turkey	300,000	'Farmers and families'	Unspecified estimate	Aegean Textiles and Raw Materials Exporters' Association, 2004
	683,667	'Seasonal farm labourers'	Calculated as: 1 seasonal worker (60 man-days) per hectare of seed cotton	S. Gazanfer, ICAC submission on Injury due to low price, 2002
	50,931[24] 4,000	'No. of cotton growers' (Aegean) (Antalya)	Survey response	ICAC, Production Practices, 2005
United States	24,805	'No. of cotton growers'	Survey response	ICAC, Production Practices, 2005
Uzbekistan	1.68 million	'Rural working population' (not cotton-exclusive)	(240,000 farms with an average of 7 workers / farm)	Uzbekistan Farmers' Association, April 2007 (cited by ILO, 2008)
Sources: as cited				

[21] Shui, S. "Importance of Cotton Production and Trade and Strategies to Enhance Cotton's Contribution to Economy and Food Security in Africa." FAO Commodity and Trade Division." In WTO African Regional Workshop on Cotton, 23-24 March 2004, WTO Document WT/L/587

[22] As noted below, the study suggests that Greek cotton farming entails significant use of additional (unpaid) family labour

[23] Commodity Specific Study: Cotton, National Bank for Agriculture and Rural Development, Mumbai, 2006

[24] ICAC (2005) notes that: "The number of growers shown in the Aegean region of Turkey are for only one cooperative (Taris). Some growers are not members of this cooperative."

2.2 Overview of workforce data in cotton cultivation in ten focus countries

Brazil

The vast majority of Brazilian cotton is now grown on large-scale *fazendas* in the central west of the country, with Mato Grosso state responsible for more than half of national production. A significant number of family smallholdings[25] – 80% of which are smaller than 10 hectares (ICAC, 2005) – continue, or have re-commenced, to grow cotton in rotation with food and other crops in the North East of the country. The figures on numbers of cotton farmers cited below (Freire & Barbosa, 2008) suggest that the number of smallholders cultivating cotton in the North East region has increased very significantly in the past year.

Table III: Estimated number of cotton growers in Brazil – 2005 to 2008, by state

State	2005	2006	2007	2008
MT	350	530	530	530
GO	450	260	100	100
BA	250	230	180	180
MS	40	30	35	35
DF	6	4	3	0
MA	2	4	4	15
PI	-	-	-	35
TO	2	2	2	0
SP	400	300	200	170
PR	300	150	150	120
NE	3,500	3,400	3,400	7,740
MG	450	150	50	150
RO E ACRE	50	10	10	0
Total	**5,800**	**5,070**	**4,664**	**9,075**

Source: Dr. Eleusio Curvelo Freire, Dr. Sebastião Barbosa, personal communication, 2008

The most recent ICAC-published employment data available for Brazil date from 2002[26]. Based on official data collected by the State government of Mato Grosso, national employment in cotton and related service industries stood at 118,000 in 2002. This figure is supplemented by a recent estimate by Freire & Barbosa, 2008 – this puts the total workforce involved in cotton production in Brazil at 160,000, employed on a total of 1,091,500 ha under cotton.

It should be noted that the most mechanized producer states, such as Mato Grosso, operate capital-intensive labour-extensive production systems. In direct communication, the Instituto Algodao Social has indicated that the average labour input on cotton plantations in Mato Grosso state has declined from 5 labour-days[27] per hectare per annum in 2005 to 3 labour-days per hectare per annum in 2007. A more detailed account of the labour inputs in

[25] There are many definitions of 'smallholder' used worldwide, based on area farmed (eg 2-4 ha in India), as well as form and structure of farming. For the purposes of this report, which focuses on the labour aspects of production, the primary definition of a smallholder is: a farmer who is not structurally dependent on permanent hired labour, and who relies mainly on their own and their family's labour inputs. Importantly, it should also be noted that, in global cotton cultivation, smallholders tend to be defined as those farm households that own and/or cultivate *less than 5 hectare*s of land.

[26] ICAC Reports On Injury Due To Low Cotton Prices International Cotton Advisory Committee Working Group on Government Measures July 2002

[27] See *Labour intensivity in global cotton cultivation* for full explanation of 'labour-days' concept.

cotton cultivation in Brazil by Freire & Barbosa, 2008 (personal communication) is provided below, distinguishing between three different production systems: mechanized cropping, small/medium-sized growers and family farming:

Table IV: Labour inputs in Brazilian cotton cultivation, 2007/08 season, by scale and system of production				
Form of labour	**Labour input intensivity per ha**	**Labour cost (day)**	**Labour cost per ha**	**Cropping area**
System 1: Large-scale mechanized cropping system in Cerrados				
"Fixed" workforce (contract)	1 labour-day	R$30	R$30	1,026,500 ha – 94% of total area
Seasonal workforce	3 labour-days	R$30	R$90	
Specialized workforce (machine operators etc)	5 labour-days	R$55	R$275	
System 2: Small / Medium-size grower in the South /Southeast (PR,SP,MG)				
"Fixed" workforce (contract)	1 labour-day	R$25	R$25	26,000 ha – 2.4% of the total area
Seasonal workforce	26 labour-days	R$25	R$650	
Specialized workforce (machine operators etc)	2 labour-days	R$55	R$110	
System 3: Smallholder Family Farming in the Northeast				
"Fixed" workforce (contract)	1 labour-day	R$25	R$25	39,000 ha – 3.6% of the total area
Seasonal workforce	65 labour-days	R$15	R$975	
Source: Dr. Eleusio Curvelo Freire, Dr. Sebastião Barbosa, personal communication, 2008				

Burkina Faso

A recent study pointed out that 17% of the population of Burkina Faso is linked to the cotton economy and cotton production accounted for 4-7% of fiscal revenue of the country[28]. In general, West African cotton cultivation costs are among the lowest in the world: cost-competitiveness is derived primarily from the use of the whole family working on the fields without receiving any payment (Oxfam 2004). About two thirds of the labour in cotton cultivation is performed by family members. However, most cotton farmers in West Africa are not 'pure' cotton farmers and cultivate cotton in addition to food crops. As in other West African cotton-producing countries, labour intensivity is high in Burkinabè cotton cultivation. Minot and Daniels suggest that it requires 186 labour-days per hectare (compared to maize with only 121 labour-days) and on average 23% more hired labour per hectare than other crops[29].

ICAC research[30] also notes that, as elsewhere in the West African Franc Zone (AFZ), cotton production in Burkina Faso is highly labour-intensive, using manual or ox-drawn implements and relatively few purchased inputs per ton of production. ICAC cites a general labour input requirement figure for the region of about 150 labour-days per hectare per annum (60 labour-days per acre), including 50 labour-days for hand picking. ICAC (2005) also notes that, "for most cotton farmers, the net income from seed cotton (about 120,000 CFA francs or $240) is the only money they receive during the entire season, for a family of 6 to 8 people."

[28] Gergely, N. 2005. « Le coton: quels enjeux pour l'Afrique ». Fondation pour l'agriculture et la Ruralité dans le Monde. Les dossiers de FARM, novembre 2005. Paris, France.
[29] Impact of Global Cotton Markets on Rural Poverty in Benin, Minot, N. and Daniels, L., International Food Policy Research Institute: Washington DC, 2002
[30] Is West African Cotton Competitive With The U.S. On The World Cotton Market? Gérald Estur, ICAC, 2005

China

China has by far the largest labour force in cotton production – estimated by some at around 40 million workers. As Fortucci[31] observes, the Chinese example provides an indication of the magnitude of the potential scale of labour involvement under small farm and low capital input conditions. ICAC research from 2004[32], adapted from a study undertaken by the Chinese Ministry of Agriculture, concurs that there are no definitive statistics on employment in the cotton sector in China. The study proposes the following estimation methodology: to use the ratio of cotton area to total crop area as a proxy for the ratio of cotton labour to total agricultural labour. "The labour requirement per hectare for cotton is estimated to be approximately three times that of corn, 2.5 times that of wheat and twice as much as for rice. Based on such assumptions, it is estimated that about 24 million people were working in cotton production in 2000, about 7% of total farm employment, estimated at 330 million. This translates into ratios of approximately 0.17 hectares and 185 kilograms per person. Considering that the average household comprises four persons, it is estimated that over 100 million rural people are dependent on cotton production for at least part of their living" (ICAC, 2004). This study further notes that, "in the Eastern part of China (Mainland), farmers are generally not fully employed by cotton and their other crops. In contrast, in the Western part of the country, cotton farmers cannot manage the farm work by themselves during the main cropping season, especially during harvest. Xinjiang cotton farmers must hire migrant workers from other parts of the country for handpicking cotton from their high-yielding and rather large fields."

This ICAC study also explains that, while it may seem not significant in the context of the national labour force, the employment impact of cotton cultivation in China must be viewed from a regional perspective, as production is not evenly geographically distributed in the country. Cotton production is concentrated in three areas: the Yangtze River reach, the Yellow River reach and the westernmost region of Xinjiang. The relative importance of the cotton sector to local agriculture varies greatly, as reflected in cotton's share of the total cropping area. In most producing areas, cotton is just one of the diverse farming activities undertaken within individual farm-households. The most specialised cotton producing region is Xinjiang, with about 25% of the total farming areas devoted to cotton, and cotton is the only crop grown by many ethnic minority farmers with relatively low incomes. In the Eastern provinces, cotton production is highly fragmented in tiny plots in each of the numerous small farming households. In 2000, cotton's share of crop area represented between 5 and 10% in 5 provinces (Henan, Shandong, Hubei, Jiangsu and Anhui) and over 2% in 4 other provinces (Hebei, Hunan, Tianjin, Jiangxi).

In general terms, then, Chinese cotton farms are generally (micro-) smallholdings, cultivating cotton on a small segment of their farm: 90% of farms are between 0.2-1 ha (ICAC, 2005). As ICAC notes, China (Mainland) has the smallest acreage unit of the cotton farming system in the world where on the average the farm size is 0.3 hectare in the Yangtze River Valley and the Yellow River Valley. Cotton is planted on one-third of land, and the two regions together grow more than half of the total cotton area in the country. While Fortucci (2002) suggests that "almost no machinery is used in cotton production, and labour is the key

[31] The Contributions Of Cotton To Economy And Food Security In Developing Countries, P. Fortucci (Commodities And Trade Division – FAO), ICAC Conference on Cotton and Global Trade Negotiations, Washington DC, USA, 8-9 July, 2002
[32] Importance Of Cotton For Employment In China, from: ICAC, March-April, 2004

input", recent ICAC research (2005) suggests that small-scale tractors are used for 90% of the land labour including pesticide application (on average the fields are sprayed 20 times per season).

Greece

Greece is the largest cotton producer in the EC, with around 80,000 farmers (see table above) involved in cotton farming. These are concentrated in Anatoliki Makedonia, Kentriki Makedonia, Thessalia and Sterea Ellada. The majority of farmers grow between 2-5 hectares of cotton.

The most recent English-language employment data available on Greek cotton cultivation are contained in a 2007 study[33] on the sector commissioned by the European Commission. The study used the EU FADN (Farm Accountancy Data Network[34]) questionnaire methodology, from a sample of 200 cotton growers in several cotton-growing regions in Greece. The study data suggest that cotton is the single most important employer of family labour in Greek agriculture (compared to durum wheat and maize). The key findings of the study, with regard to labour inputs, labour use and labour costs, are summarised below.

Table V: Labour inputs and labour costs in Greek cotton production, 2006

	Labour days spent on cotton production (all regions)	Labour costs (€) (Makedonia-Thraki)	Labour costs (€) (Ipiros-Peloponis, Thessalia, Sterea-Ellas)
Household labour (unpaid)	10 days/hectare/year	€593 (194.6 hrs of unpaid labour, expressed as 'opportunity cost' at average hourly wage of €3)	€615.6 (220.3 hrs of unpaid labour, expressed as 'opportunity cost' at average hourly wage of €3.1)
Paid labour	4 days/hectare/year	€83.4	€30.2
Contracted labour[35]	3 days/hectare/year	€263.4	€247.5

Source: Study On The Cotton Sector In the European Union, LMC Ltd for European Commission, 2007

India

Cotton farms in India are found in the 'cotton belt' that starts in the north-west, crosses through the centre of the country and ends in the south-east. Estimates of the number of farmer involved in cotton cultivation vary widely: Gujarat Institute of Development Research (2005) and NABARD (2006 – see below) put the figure at 4 million farmers, while campaigning organisations[36] have claimed that as many as 10 million Indian farmers cultivate cotton. In the central and south, cotton farms are usually family-run, mixed, and small (according to ICAC 2005 55% are less than 2 hectares and 32% between 2-6 hectares). Picking is entirely by hand.

The National Bank for Agriculture and Rural Development (NABARD) undertook a commodity specific survey[37] in 2006, which analysed the economy of the cotton farm –

[33] Study On The Cotton Sector In the European Union, LMC Ltd for European Commission, 2007
[34] See http://ec.europa.eu/agriculture/rica/index_en.cfm
[35] The distinction made between 'paid labour' and 'contracted labour' here is on the basis of unskilled/semi-skilled work versus provision of specialised/technical services.
[36] The Deadly Chemicals in Cotton, Environmental Justice Foundation in collaboration with Pesticide Action Network UK, London, 2007
[37] Commodity Specific Study: Cotton, National Bank for Agriculture and Rural Development, Mumbai, 2006

including labour costs – in three cotton-producing states: Gujarat, Punjab and Andhra Pradesh. Below is a comparative overview – taken from NABARD research, based on interview and survey data from 184 cotton growers, as well as other actors including extension and NABARD officials – of the economics of cotton cultivation in two states, Gujarat and Punjab.

Table VI: Economic structure of the cotton cultivation cycle in Gujarat and Punjab (Indian Rps/acre)

Input	Local cotton		Hybrid cotton		Bt Cotton	
	Gujarat	*Punjab*	*Gujarat*	*Punjab*	*Gujarat*	*Punjab*
Seeds	158	148	546	800	1850	2095
Fertilisers & manure	486	459	1172	907	1172	1147
Insecticides	1191	1140	1525	2199	835	975
Irrigation	257	468	1694	873	1694	1039
Human labour	913	1490	1750	1794	2110	1716
Machine / bullock labour	1070	432	1199	678	1437	753
Depreciation	111	85	196	101	196	100
Interest on working capital	274	267	540	664	685	736
Marketing	110	105	110	104	110	104
Family labour	835	1003	1403	1071	1403	1350
Costs of cultivation	**5406**	**5597**	**10135**	**9191**	**11493**	**10015**

Source: Commodity Specific Study: Cotton, National Bank for Agriculture and Rural Development, Mumbai, 2006

Pakistan

The Pakistani cotton belt covers Punjab and Sindh provinces. Estimates of the number of farmers appear to reside on a figure of 1.3 million farmers suggested in 1998[38] – this figure is cited in Kooistra (2006) and elsewhere. The most recent ICAC (2005) survey figures indicate an average farm size of 3.8 hectare: this figure masks some variety in scale of farming, however. ICAC (2005) figures suggest that while around one third of farms in Punjab are smaller than 1 hectare, almost one third are larger than 3 hectares; whereas in Sindh, average farm-size is larger, with 40% of farms smaller than 5 hectare, and 10% larger than 20 hectare. The World Bank[39] puts the number of farmers in cotton production in Pakistan at 1.6 million farms, with the smallholder (<10 ha) share of cotton farming at 94% of farms and 70% of land. While most farms are family-run, there are 35 state farms. SDPI suggests that cotton cultivation in Pakistan employs "in three to five waves, from August to February, an estimated two million cotton-pickers"[40].

Various types of labour contracts prevail for different operations in Pakistani cotton cultivation, including both skilled and unskilled workers employed on regular and casual terms. Unskilled labour is employed on a regular basis, particularly for the application of fertilisers, sowing, soil-softening and irrigation. Sometimes a regular waged labourer is used to supervise casual and seasonal labourers employed on the farm for harvesting.

Syria

INCANA (Inter-regional Cotton Network in Central Asia and North Africa) indicates that "almost 20% of the economically active population in Syria are dependent for all or part of

[38] Pakistan: Environmental Impact of Cotton Production and Trade, Tariq Banuri, UNEP, February 1998
[39] 'Pakistan: Growth and Export Competitiveness', World Bank, 2006
[40] SDPI Research & News Bulletin, Vol. 14, No. 3 July — September 2007, Islamabad, 2007

their income on cotton production or processing"[41]. More specifically, a report prepared by SBA Ltd for the Syrian Ministry of the Local Administration and Environment, suggests that "over 300,000 persons are involved in cotton cultivation as seasonal workers"[42].

The USDA FAS GAIN report (2007) highlights that "Cotton production is controlled to a great extent by the Cotton Bureau of the Syrian Ministry of Agriculture and Agrarian Reform. The Cotton Bureau sets the total planted areas and encourages early planting and harvesting of seed cotton." ICAC (2005) notes that Syria is the only country where a single variety is grown in every region – cotton being planted in the north, east, and central parts of Syria. ICAC (2005) survey data indicates no response with regard to farm size. The entire crop is hand picked.

Turkey

The major areas of cotton cultivation are West (20%), South-West (60%) and South (20%) Turkey. Most of the 300,000 cotton farms are small scale and family-run, averaging 5 hectares (ICAC, 2005). ICAC also notes that, "although the cotton production sector in Turkey is moderately mechanised, there are many production activities which are still labour intensive. This is especially true for harvesting which is mostly carried out by hand picking. Therefore, the labour cost occupies a large portion of the production costs in all the regions. It has been calculated that in average a total of 60 man-days are required per hectare of cotton production. However, as the working periods are scattered during the production season, it is difficult to quantify the exact number of farm labourers needed on an annual basis. Assuming that these labourers find other work when they are not engaged in cotton production activities, it is estimated that around one seasonal labourer would be necessary for 60 working days (totalling around three months) per year per hectare on cotton production."[43]

United States

US cotton farms are located in the following states: Texas, Georgia, Mississippi, Arkansas, North & South Carolina, Tennessee, Louisiana, Alabama, Missouri, Arizona, Oklahoma, California, Kansas, Florida, Virginia and New Mexico. In total just under 25,000 farmers cultivate 5.3 Mha of cotton producing land[44]. The cotton farms are usually very large (around 1200 hectares) and intensive monocultures using high-yielding varieties without rotation crops. Given the very high level of mechanisation, cultivation is capital intensive and labour extensive.

The US government agencies do not collect cotton-specific employment data – distinguishing in its labour force data only between field workers and livestock workers. According to the most recent NASS agricultural employment data[45], during the January 2008 reference period, field workers received an average of $9.64 per hour, while livestock

[41] INCANA Country Report: Syria, General Commission for Scientific Agricultural Research (GCSAR), Dr. Al-Salti M. N., Director of the Cotton Research Administration, Aleppo, 2004
[42] The Cotton Textile Industry in Syria: An Environmental Overview, SBA Ltd for Syrian Ministry of the Local Administration and Environment, 2003
[43] Reporting Injury to National Economies from Low Cotton Prices: Report of Turkey, Dr Sebahattin Gazanfer, Delegate of Turkey, ICAC Working Group on Government Measures, Ankara, 2002
[44] Cotton Production Practices, International Cotton Advisory Committee, Technical Information Section, 64th Plenary Meeting Liverpool, United Kingdom September 2005
[45] Farm labor, National Agricultural Statistics Service (NASS), January 2008

workers earned $10.19 per hour. The field and livestock worker combined wage rate was $9.87 per hour. The number of hours worked averaged 38.4 hours for hired workers during the survey period (one week).

The most recent analysis of labour costs specific to US cotton cultivation was undertaken in 2001, summarised below.

Table VII: Labour costs per planted acre of cotton in USA, by total cost group, 1997 (US$)

	Low-cost	Mid-cost	High-cost	All ARMS farms
Hired labour	35.66	41.96	47.15	41.21
Opportunity cost of unpaid labour	22.98	32.51	39.76	31.26

Source: Characteristics and Production Costs of U.S. Cotton Farms, Nora L. Brooks, USDA-ERS, 2001

Uzbekistan

According to the Uzbekistan Farmers' Association (cited by ILO – personal communication), as of 1 April 2007, there were 240,000 farms in Uzbekistan (this figure is not exclusive to cotton), with an average of 7 workers per farm, encompassing a rural working population of about 1.68 million. UNDP[46] notes that, in the 1990s, rural households were allocated land plots (average size 0.12 ha) which have since become the basis for small family or *dekhan* farms. During the same period, the vast majority of state and collective farms were converted into *shirkats* (cooperative farms based on household contracting). Since the late 1990s, private commercial farms have also been introduced. While until recently the majority of cotton was produced on *shirkats*, the government's policy is to convert 90% of *shirkats* to private farms by 2009.

In contrast to the *dekhan* farmers, UNDP notes, "private farmers are allowed to use hired labour and to have larger plots (up to 10 hectares), but are subject to compulsory procurement at state-determined prices (particularly for cotton and wheat)." UNDP further suggests that much of the rural population is still employed on *dekhan* farms, "which in most cases amounts to little more than subsistence agriculture" (ibid). "The transformation of *shirkats* into private farms is also further reducing employment, since the more efficient private farms have higher labour productivity rates and therefore employ fewer workers. These trends are pushing growing numbers of rural residents into small subsistence farming, on to *mardikhors* (informal labour markets), or into emigration." (op cit).

[46] Poverty and inequality in Uzbekistan, Uktam Abdurakhmanov & Sheila Marnie in: Development and Transition 5, December 2006, UNDP/LSE

2.3 Labour intensivity in global cotton cultivation

It is commonly cited in the literature that, because of its labour intensivity in developing country contexts, cotton cultivation has been an important contributor to job creation where these jobs are most needed. In order to situate this assertion, the table below summarises the best available data on labour inputs in cotton cultivation according to country context.

It should be noted that the concept of 'labour-days' used here equates to the conventional concept of man-days per hectare per annum. The term 'man-days' is not used here, because it does not adequately describe work done in many contexts by both women and men.

Table VIII: Labour requirements of cotton cultivation in 10 focus countries

	Production system	Labour characteristics	Labour inputs required (per hectare per annum)	Source
Brazil	Mechanised (*cerrado*)	"Fixed" workforce (contract) Seasonal workforce Specialized workforce	1 labour-day 3 labour-days 5 labour-days	Dr. Eleusio Curvelo Freire, Dr. Sebastião Barbosa, personal communication, 2008
	Small-medium farms	"Fixed" workforce (contract) Seasonal workforce Specialized workforce	1 labour-day 26 labour-days 2 labour-days	
	Family farms	"Fixed" workforce (contract) Seasonal workforce	1 labour-day 65 labour-days	
Burkina Faso	Family farms	Family & seasonal labour	186 labour-days	Minot & Daniels IFPRI, 2002
		Family & seasonal labour	150 labour-days	ICAC, 2004
China	Agglomeration of micro-smallholdings	n/a	n/a	n/a
Greece	Small-medium farms	Household labour (unpaid)	10 labour-days	LMC Ltd for European Commission, 2007
		Paid labour	4 labour-days	
		Contracted labour	3 labour-days	
India	Family farms (Andhra Pradesh)	Agricultural labour	190-225 labour-days	Reddy, Subrahmanyam, ILO, 2006
Pakistan	Family farms	n/a	n/a	n/a
Syria	Family farms	n/a	n/a	n/a
Turkey	Small-medium farms / part-mechanised	Family / seasonal labour (NB increasing mechanisation since data published 2002)	60 labour-days	ICAC, 2002
United States	Mechanised	n/a	n/a	n/a
Uzbekistan	Coop. & private farms	n/a	n/a	n/a

Sources: as cited

2.4 Employment trends in cotton – impacts of technology

While the research cited thus far suggests there are few absolute definitive or authoritative figures on the numbers of people working in cotton cultivation in the ten focus countries, there has been some research interest in job creation in the sector, in terms of the impact of forms of technology on employment in the sector. The most attention has been paid to the impact on employment of mechanisation and plant technology, specifically biotech cotton (Bt in particular).

Mechanisation

The degree of mechanisation in the sector will evidently determine the scale and form of employment. For instance, in countries such as the United States and Brazil, cotton farmers invest heavily in machinery to work their large farms. In developing countries, cotton is typically produced on small farms with intensive use of labour. By means of example, Fortucci cites the comparison between the USA and China: "with 5.3 million hectares planted to cotton in 2000, the United States had some 31,500 farms engaged in cultivation, while there were around 40 million small farms engaged in cotton production in China on a planted area of about 4.2 million hectares. Farms in the United States are large and highly mechanized while small farms in China, as in other developing countries, rely on labour."[47]

More recently, as noted above, the Instituto Algodão Social has indicated that average labour inputs on cotton farms in Mato Grosso state, the largest producer state in Brazil, has declined from 5 labour-days per hectare per annum in 2005 to 3 labour-days per hectare per annum in 2007, due primarily to efficiencies gained from technology. Elsewhere, mechanisation has also yielded economic gains for farmers, in the context of constricting labour market dynamics. "The cotton harvest in Turkey is to a large extent done by hand. For this reason it requires a substantial labour force at this level of production. Harvesting, which used to be done in all of the regions by local workers at the beginning, triggered a worker influx from the south-eastern Anatolian region to the Aegean and Cukurova regions, due to these regions' becoming rapidly industrialized. In parallel with the increase in production in the south-eastern Anatolian region by means of GAP (Southeast Anatolian Project), the worker influx to Aegean and Cukurova Regions has been gradually reduced. This has caused the production cost to rapidly increase in such regions. At present, Turkey is in the transition stage from hand to mechanical picking of cotton"[48].

This research points to a key issue for SEEP's attention: namely the complex relationship between 'social performance' – defined narrowly here as job creation – and 'economic performance' – similarly narrowly defined as farm-level profitability. Where the 'social performance' of cotton is best described in terms of its role in creating jobs, and thus income, for a very significant number of workers, this may find itself in tension with the element of 'economic performance' afforded by technological advances which diminish the requirement for manual labour, and thus jobs.

Research suggests that this issue takes on different inflections in different regions. In West Africa, for example, including the focus country Burkina Faso, cost competitiveness is

[47] The Contributions Of Cotton To Economy And Food Security In Developing Countries, P. Fortucci (Commodities And Trade Division – FAO), ICAC Conference on Cotton and Global Trade Negotiations, Washington DC, USA, 8-9 July, 2002
[48] 'Economical and social perspectives of transition to mechanical cotton picking in Turkey', Erdal Oz, Ege University, published summary of paper presented at ISSCRI Conference, Montpellier, May 2008 (slight alterations to English-language translation)

derived in part from labour cost savings. "African franc zone cotton producers rely on unpaid family labour."[49] Aside from significant investment and resource constraints, there is therefore little economic impetus to mechanise. Moreover, expert bodies such as the ILO propose that, "given sub-Saharan Africa's rapidly growing labour force, agricultural research should also explore the best ways to foster labour-intensive production methods."[50] Namely, labour intensivity can be a positive factor in economic development where 'job-rich' growth promotes increased employment in a context of general 'underemployment'. ILO (op. cit.) further notes that "value added per worker in Sub-Saharan African agriculture has actually declined over the past 25 years, from US$425 in 1980, to US$368 in 1990, to US$362 in 2001. This is partially the result of falling agricultural prices and also of low agricultural productivity."

Other focus countries, such as Uzbekistan, have seen an effective move away from mechanisation in recent times, with unclear effects on employment. UNRISD suggests that "whereas in 1992–1993, combines harvested up to 40 per cent of the crop, this went down to 6 per cent in 1996 and only 4 per cent in 1997. In many places, and in Ferghana especially, practically the entire crop is picked manually. […] Cotton pickers who are paid a daily wage are less expensive per tonne of cotton harvested than combines, although this was contested by some of the farm managers interviewed. It may also be the case that this use of manual labour represents an effort at employment provision in a context where manual processing of the crop is the only activity directly paid in cash. This shift increases the demand for women's and children's seasonal labour input, the traditional source of labour for manual operations."[51] The effective de-mechanisation of the Uzbek cotton sector should also be viewed in the context of unemployment arising from de-collectivisation: "The transformation of *shirkats* into private farms is also further reducing employment, since the more efficient private farms have higher labour productivity rates and therefore employ fewer workers".[52]

Bt Cotton

There has been similar consideration of the employment effects of the introduction of Bt Cotton. Again, research suggests that the actual impact of the technology varies according to the regional context – particularly in terms of labour market dynamics. Thus, where rural unemployment and underemployment are of concern, research has focused on the threat to livelihoods posed by diminished employment opportunities. "Reductions in the use of pesticides arising from the cultivation of Bt cotton might lead to less employment for farm workers. However, recent data from the Makhathini Flats have shown that, overall, this can be compensated for by increased demand for farm workers during the harvest, because of increased yields[53]. While this issue of labour is not relevant for small-scale farmers who do not employ labourers [*sic*], it may require consideration in the case of larger farms. Problems could arise if farm workers are not able to obtain employment on other farms

[49] ICAC Commodity Risk Management Approaches For Cotton in West Africa, Gérald Estur, ICAC, June 2004
[50] Case study from ILO World Employment Report 2004-5: Challenges and potential in sub-Saharan Africa's agricultural sector, ILO, 2005 (Sources: World Bank, 2004a; Hazell, 2002; Cleaver and Donovan, 1995.)
[51] Agrarian Reform, Gender and Land Rights in Uzbekistan, Deniz Kandiyoti, UNRISD, 2002
[52] Poverty and inequality in Uzbekistan, U. Abdurakhmanov & S. Marnie in: Development & Transition 5, December 2006, UNDP/LSE
[53] Shankar B and Thirtle C (2003) Pesticide Productivity and Transgenic Cotton Technology: The South African Smallholder Case, Working Paper, Dept. of Agricultural & Food Economics, University of Reading.

during the growing period of the crop."[54]

Elsewhere, where labour markets are tight in terms of availability of suitably skilled workers, the literature has emphasised that "in developing countries that experience significant loss of farm labour due to dislocation to cities, violent conflict and disabling diseases, the use of herbicide-tolerant biotech cotton in conjunction with post-emergent herbicides to control seedling weeds (Vargas, 1996) should also ease the farm labour burden, compared with traditional hand weeding operations."[55]

2.5 Forms of employment in cotton cultivation: workforce characteristics

As evidenced by the categorisations used in figures and estimates of employment in cotton cultivation cited above, there are a variety of forms of labour in cotton cultivation, as in agriculture more generally. For instance, the China National Bureau of Statistics states that the category of 'agricultural labourers' refers to "the employed persons that major engaged in agriculture in 2006, including all the agricultural employed persons in rural households, urban agricultural production households and agricultural holdings in China."[56]

FAO's analysis of labour force data[57] also distinguishes between differing forms of employment status, depending on whether the person is working as an own-account worker, family worker or employee, and is collected for each economically active person. This is useful for analysing persons with an agricultural main occupation according to whether they are agricultural holders (an "own-account worker"), working on the household's holding (contributing family worker), or in paid agricultural work (employee).

However this study has found a significant gap in research and data on the extent of 'employment' *per se* in cotton cultivation. Namely, much research makes a 'common sense' assertion that there are two forms of employment structure in cotton cultivation: large farms which employ hired labour, and smallholdings which do not employ hired labour. This is evidenced by generalisations such as: "this issue of labour is not relevant for small-scale farmers who do not employ labourers"[58] and undoubtedly characterises a large part of the picture.

It is noted that many smallholder producers mainly use family labour and are not structurally dependent on hired labour. Local labour exchange systems within a given community may also be common. A further complicating factor in analysing work in certain contexts is the reality of extended family relationships and related difficulties in defining operators and units of production: 'family' labour may entail a broader range of individuals than biological relatives. SASA reports that some confusion surfaced in the course of their producer interviews in Burkina Faso regarding traditional norms of patrilineal land ownership and

[54] The Use of GM Crops in Developing Countries – Case study 1: Bt Cotton in China and South Africa, Nuffield Council on Bioethics, London, 2003
[55] Report Of The Second Expert Panel On Biotechnology Of Cotton, International Cotton Advisory Committee, November 2004
[56] See www.sei.gov.cn/hgjj/yearbook/2007/indexeh.htm
[57] 'Consolidation of Agricultural Labour Statistics from Agricultural Censuses', Dirk U. Hahn, Report prepared for the Food and Agriculture Organization, Rome, December 2007
[58] The Use of GM Crops in Developing Countries – a follow-up discussion paper: Case study 1: Non-food crops – Bt Cotton in China and South Africa, Nuffield Council on Bioethics, London, 2003

ideas of what constitutes 'family' in family labour[59].

There is also a significant volume of research which refers to the use of external labour inputs in smallholder cotton cultivation, particularly during harvesting: this may be external community labour, migrant workers, or other forms of seasonal labour. Within the scope of the focus countries in question here, the use of external hired labour during harvesting on 'family smallholdings' is identified in Burkina Faso[60], Pakistan[61], India[62], Turkey[63] and Syria[64].

This question is of direct relevance not only to creating a clearer understanding of the positive social impacts of cotton cultivation in terms of employment creation, but also of the challenges associated with inequitable forms of employment in the sector. It is a fundamental question in approaching 'terms of employment' in smallholdings, because terms of employment depend on the notion of a remunerated employment relationship formalised by verbal or written contract, and the law governing the exercise of this contract. As such this gap in research – the scale and form of hired labour retention in smallholder cotton cultivation – requires primary consideration by the SEEP.

Recent research by FAO and ILO suggests that over 40% of the global agricultural workforce is composed of waged workers, distinct from farmers, because they do not own or rent the land on which they work nor the tools and equipment they use. Such workers "are employed on small- and medium-sized farms, including family farms, as well as large industrialized farms and plantations. They work for some kind of 'wage' which can include payment 'in kind', under a variety of work arrangements. These work arrangements are not always recognised as employment relationships, and often entail relationships of subordination and dependency. As a result, waged agricultural workers lack many rights and access to social protection, thereby increasing the vulnerability."[65] The research observes that waged agricultural workers may be full-time, seasonal, temporary or casual, migrants, indigenous workers, or piece-rate workers, or a combination of these. Moreover, the report notes that "many small farmers are also 'wage-dependent', working regularly on farms or plantations to supplement their basic incomes" (op. cit.).

The 'employment continuum' in cotton cultivation

One useful distinction for SEEP to retain in further analysis of the employment impacts of cotton cultivation is the level of formality and proximity of ties between employer and employee. Permanent workers usually have more formal work arrangements, meaning that their work is covered by a contract, protected by labour laws and provides access to certain social security and employment benefits (health care, insurance, pensions, annual, sick and maternity leave). Non-permanent workers – such as temporary, casual and

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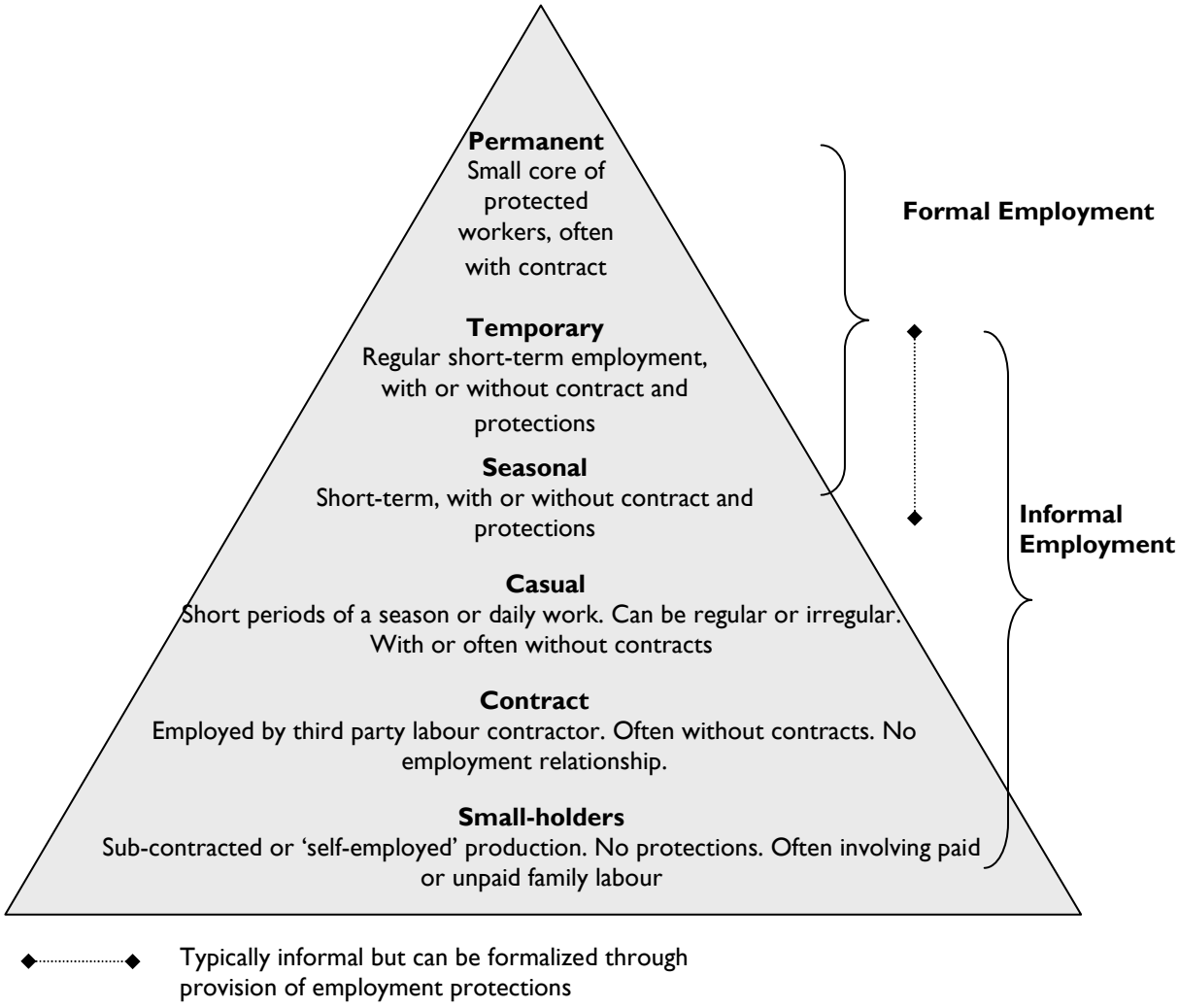
[59] SASA Final Report on Social Standards and Social Auditing Methodologies, Rachel P. Lorenzen, Cameron Neil, Krisha Corbo, Dr Sasha Courville, ISEAL Alliance, London, 2004
[60] "Going to Kompienga": A study on child labour migration and trafficking in Burkina Faso's south-eastern cotton sector, De Lange, IREWOC, 2006
[61] SDPI Research & News Bulletin, Vol. 14, No. 3 July — September 2007, Islamabad, 2007
[62] Labour and financial markets from the employers' perspective - The case of Ranga Reddy District in Andhra Pradesh, ILO, 2006
[63] Baseline survey on worst forms of child labour in the agricultural sector: Children in cotton harvesting in Karatas, Adana, International Labour Office – IPEC, 2003
[64] The cotton textile industry in Syria – An environmental overview, Ministry of the Local Administration and Environment, Ministry of Industry, 2003
[65] Agricultural Workers and their Contribution to Sustainable Agriculture and Rural Development, Peter Hurst, Paola Termine and Marilee Karl, FAO – ILO – IUF, Geneva, 2007

contract staff – tend to have more informal relationships, often working without a contract and being denied access to key labour rights and benefits. It is noted that boundaries between the formal and informal are often blurred. Several theorists of agricultural labour, such as Dolan and Sorby[66], adopt the notion of an 'employment continuum' to show how – in general – ties between employer and worker become progressively looser and more informal as you move from temporary and seasonal work near the top of the pyramid, down toward contract labour or unpaid labour in contract farming.



Based on Dolan and Sorby, 2003; p.29

2.6 Understanding 'labour dynamics' in cotton cultivation

As ICAC asserts, "cotton is truly a small farmers' crop"[67]. Indeed, in very general terms, it should be noted that, while larger farms (mainly in developed countries) account for around one quarter of world total cotton planted area and one third of world output, they only employ a small fraction of the global cotton labour force. On the contrary, small cotton

[66] Gender and Employment in High-value Agriculture and Rural Industries: Agriculture and Rural Development Working Paper Series No. 7, Dolan, C and Sorby, K., World Bank, 2003
[67] Cotton Production Practices, International Cotton Advisory Committee, Technical Information Section, 64th Plenary Meeting Liverpool, United Kingdom September 2005

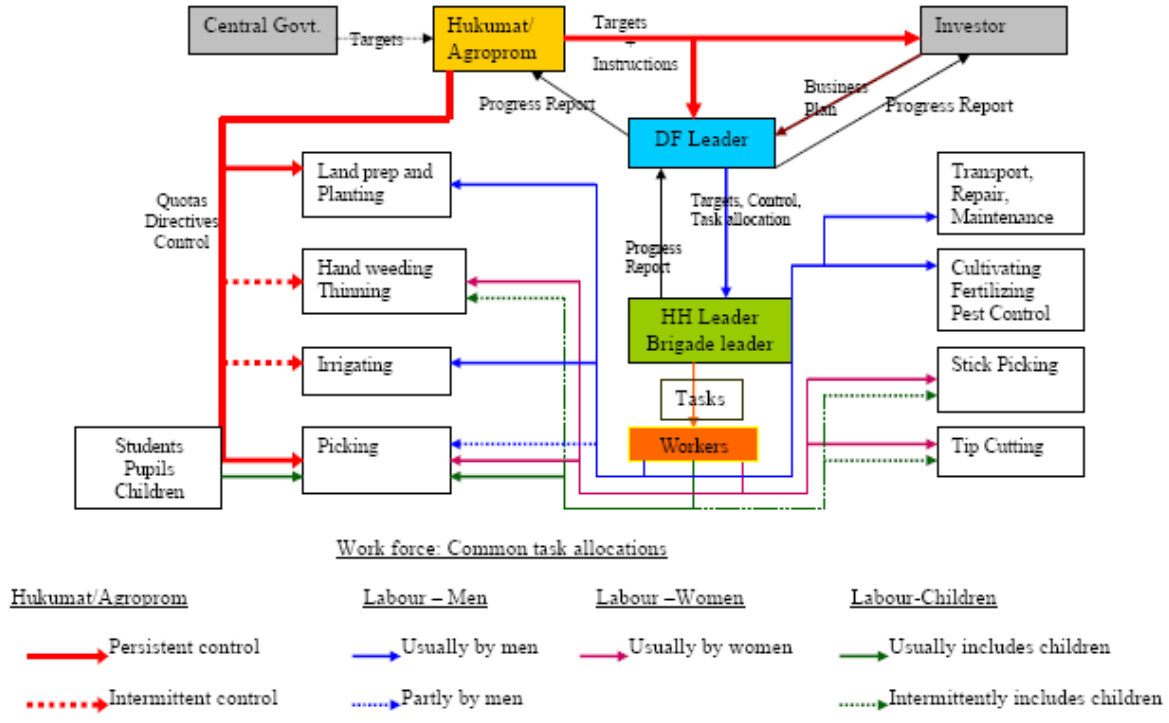
farms use almost all of the global labour employed in cotton to produce 65% of the world's output on 72% of the planted area[68].

In the context of the smallholder systems which employ the vast majority of labour associated with cotton cultivation, cotton farming entails a significant volume of labour inputs during the most labour-intensive phases of the cultivation cycle:

- Land preparation and planting
- Hand weeding and thinning
- Irrigating (where crop is not rain-fed)
- Picking

There are also a series of other on- and off-farm tasks which necessitate labour, in the context of non- or low-mechanised farming systems: pesticide application, stick-picking, tip-cutting, as well as transport, storage and handling.

While production practices are the object of very significant research and communication, there is less literature formalising the different forms of labour input in cultivation. In order to analyse – and communicate – the social performance of cotton farming, SEEP may wish to develop a schema to describe the relationship between labour and other inputs in the cotton cultivation cycle. Below is an example of a schematic representation of labour dynamics, relating to a 'typical' cotton growing collective *dekhan* farm in Tajikistan[69]. (The schema incorporates decision flows and task allocation: farm management tasks are not included.)



[68] The Contributions Of Cotton To Economy And Food Security In Developing Countries, P. Fortucci (Commodities And Trade Division – FAO), ICAC Conference on Cotton and Global Trade Negotiations, Washington DC, USA, 8-9 July, 2002
[69] Extract from: Review of the Tajik Cotton Sector, KasWag AgriConsulting Worldwide, October 2007

3 Quantity and quality? 'Decent Work' in agriculture

Up to this point, this review has focused on the sources of data which will best assist SEEP in identifying and tracking the positive impact of cotton cultivation on employment, through job creation.

There is also an emerging body of research which is covered in this second part of the review, which focuses on a different aspect of employment in cotton cultivation: quality, rather than quantity, of labour. While it is self-evident that without jobs, there are no 'labour standards', a sole focus on job creation in global cotton cultivation is insufficient to explain its 'social impacts'. It is proposed later in this part of the review that a useful organising concept for SEEP to retain may be the ILO notion of 'Decent Work': this relatively recent concept seeks to explain how work can contribute to economic and social development by yoking together the poles of 'job creation' and 'standards at work', concepts which are sometimes perceived to be in tension with one another.

It should be noted that the qualitative issues relating to labour standards are not readily amenable to representation in purely quantitative or numerical terms, although survey-based quantitative data provide one important source of information. Such phenomena involve complex qualitative aspects which are typically best captured by case study methodology, alongside survey-based techniques. These phenomena are also potentially contentious and therefore subject to dispute, regardless of the source, method and quality of the research.

Moreover, by its nature, much of the literature on negative social impacts may be perceived as 'motivated'. In part this is because organisations with an interest in understanding and addressing negative 'social impacts' may have different political and economic interests to those who are answerable to the accusations that they generate, and both parties may understand each other's position poorly. This is particularly amplified where such reports or allegations assume a geo-political dimension, or bring about economic pressures in their effects on trading relations.

In view of these complexities, the review seeks in the first instance to present a clear picture of agreed and recognised international standards on labour practices and their application to cotton cultivation.

3.1 Labour standards: content and status of international standards relating to labour

What is the ILO?

The International Labour Organization (ILO) is the specialised UN agency which promotes internationally recognised human and labour rights to improve the working conditions, living standards, and the equitable treatment of workers worldwide. The ILO formulates international labour standards in the form of Conventions and Recommendations setting minimum standards of basic labour rights. Within the UN system, the ILO has a unique tripartite structure with workers and employers participating as equal partners with governments in the work of its governing organs.

The ILO 'core conventions'

An ILO Convention is an international agreement normally about a labour-related issue. Once a government has ratified an ILO Convention, it has to ensure that national laws, policies and practice conform to the Convention, which then has the force of an international treaty. The so-called 'core labour standards' consist of 4 standards, laid out in eight Conventions:

- Freedom of association and the effective recognition of the right to collective bargaining (Conventions No. 87 & No. 98) - workers everywhere should have the right to organise in trade unions and negotiate their working conditions collectively.
- The elimination of all forms of forced and compulsory labour (Conventions No. 29 & No. 105) - workers should be free from any form of forced labour, such as slavery, servitude, compulsory labour for political re-education, or debt indenture.
- The effective abolition of child labour (Conventions No. 138 & No. 182) - children, meaning persons below the age of 15 (or as defined by national law), should not work so that they have the opportunity to learn and develop freely.
- The elimination of discrimination in respect of employment and occupation (Conventions No. 100 & No. 111) - discrimination on the grounds of gender, race, nationality, religion, political opinion or social origin is banned, as is discrimination in remuneration on the grounds of gender.

The eight ILO core conventions are international standards that apply to industrial countries as much as to developing countries (but are addressed to member states, not private sector actors). Because the ILO core conventions are essential labour standards, they have been integrated in a range of guidelines for companies, such as the UN Global Compact and the OECD Guidelines for Multinational Enterprises. The ILO core conventions also form the basis of the codes developed by most private voluntary initiatives on supply chain labour standards, such as the US Fair Labor Association or UK Ethical Trading Initiative; the core conventions are also the basis for the labour rights component of the FLO Fairtrade standards which apply to cotton farmers.

The content of the eight core conventions, and other key ILO conventions relating to the agriculture sector, is summarised at Annex 2.

3.2 Applicability of ILO core conventions

In 1998, the International Labour Organisation produced the Declaration on Fundamental Principles and Rights at Work. In the Declaration, ILO member states agreed that they should all respect, promote, and realise these core labour standards, *whether they have been ratified or not*. Therefore this entails that, regardless of ratification (as indicated in Table VII below), all member states of the ILO are bound to respect the core ILO conventions. All ICAC member countries[70] are members of the ILO. This observation should inform interpretation of the table below, which indicates ratification of ILO core conventions, and other key ILO conventions, in the ten focus countries in question here.

Table IX: Ratification of ILO Conventions in 10 focus countries

ILO Convention	Brazil	Burkina Faso	China	Greece	India	Pakistan	Syria	Turkey	USA	Uzbekistan[71]
29 (Forced labour)	X	X	O	X	X	X	X	X	O	X
87 (Freedom of Association)	O	X	O	X	O	X	X	X	O	O
98 (Right to Organize)	X	X	O	X	O	X	X	X	O	X
100 (Equal Remuneration)	X	X	X	X	X	X	X	X	O	O
105 (Forced labour)	X	X	O	X	X	X	X	X	X	X
111 (Discrimination)	X	X	X	X	X	X	X	X	O	X
138 (Child labour)	X	X	X	X	O	X	X	X	O	X *(see footnote)*
182 (Worst forms of child labour)	X	X	X	X	O	X	X	X	X	X *(see footnote)*
110 (Plantations)	O	O	O	O	O	O	O	O	O	O
141 (Rural workers' organisations)	X	X	O	X	X	O	O	O	O	O
184 (Safety and Health in Agriculture)	O	O	O	O	O	O	O	O	O	O

Source: ILO

Legend:	ILO Core Conventions	X=ratified
	Other relevant ILO conventions	0=not ratified

[70] Argentina, Australia, Belgium, Benin, Brazil, Burkina Faso, Cameroon, Chad, China (Taiwan), Colombia, Cote d'Ivoire, Egypt, Finland, France, Germany, Greece, India, Iran, Israel, Italy, Kazakhstan, Kenya, Korea, Mali, Netherlands, Nigeria, Pakistan, Paraguay, Poland, Russia, South Africa, Spain, Sudan, Switzerland, Syria, Tanzania, Togo, Turkey, Uganda, United Kingdom, United States, Uzbekistan, Zambia, Zimbabwe

[71] As of 24 June 2008, the ratification documents for C138 and C182 had been communicated to ILO in Geneva from the Government of Uzbekistan.

3.3 Overview of relations between international labour standards, national labour legislation and enforcement mechanisms in the agricultural sector

The 'core labour standards' of the ILO are internationally recognized as universal human rights. Beyond the core labour standards, however, there lies a broad series of other standards on working conditions. These standards relate to issues such as wages, working hours, occupational health and safety, and mandatory benefits such as pensions and social security coverage. These standards are not universal rights and do not set absolute standards. They tend to be set in national labour law and vary with the level of development and local living standards in each country.

These specific standards are sometimes referred to as 'substantive' labour standards or, commonly, 'cash standards'. The distinction between cash and non-cash standards is, in principle, simple: cash standards are those that cost money to employers, such as higher wages and health benefits. Non-cash standards are those that have no direct impact on legitimate labour costs, such as eradicating child labour. It is commonly held that, if set too high, these 'cash' standards can increase labour costs beyond what is justified by increases in productivity levels and may therefore decrease export competitiveness. For this reason, these standards are potentially more contentious and have sometimes been confused or elided with the 'non-cash' core labour standards in the protracted debate over labour standards and trade protectionism.

This is, of course, not to say that such standards are entirely open to interpretation. Rather, it implies that, in order to understand the significance of non-core labour standards, it is necessary to understand how these standards are set in the local context. In many cases, this means referring to, in order of pre-eminence: national labour law, collective agreements at national, regional/sectoral or enterprise level, company regulation, and the content of contracts of employment.

3.4 National labour legislation and its application to agriculture

The national labour and OHS (occupational health and safety) legislation which applies to the agriculture sector in the ten focus countries is set out in the table below.

Table X: Overview of national labour legislation in 10 focus countries

Country	Key labour law applicable to agriculture	Key OHS law applicable to agriculture
Brazil	Federal Constitution Consolidated Labour Laws (CLT)	Regulation of 03-03-05 on health and safety at work in agriculture, forestry and fisheries No. 31
Burkina Faso	Law 11-92/ADP of 22 December 1992, implementing Labour Code	-
China	1994 Labour Law 2008 Labour Contract Law (LCL) 1991 Regulations Prohibiting the Use of Child Labour (amended 2002)	Occupational Disease Control Law of 27 October 2001 Work Safety Law of 29 June 2002
Greece	(According to EC Directives)	(According to EC Directives)
India	Minimum Wage Act 1948 Plantation Labour Act 1951 Bonded Labour System Act 1976 Protection of Human Rights Act 1993 Equal Remuneration Act 1976 Child Labour Act 1986 (amended in 1999) Unorganised Labour and Agricultural Workers (Welfare) Act, 2006	Plantation Labour Act, 1951 Insecticide Act, 1968
Pakistan	Constitution of Pakistan *(not directly applicable to agriculture)* Employment of Children Act, 1991 *(not directly applicable to agriculture)*	(No occupational heath and safety legislation directly applies)
Syria	Law No. 24 amending Labour Law No. 91 Agricultural Relations Act No. 134, 1958 Order No. 417 of 26 Aug. 1959 (revised 2001) – hazardous occupations Act No. 21 of 08-05-1974 respecting peasants' co-operative associations (revised 1989/1992) (NB statutory protections apply only to salaried employees – ie not to family/household workers)	
Turkey	Regulation of 2004-04-06 on working conditions of workers in agricultural and forest areas. Regulations of 2003-04-16 on working conditions of employees in agriculture 2004 Employment of Children Law	Regulation of 26 December 2003 on protection of workers' safety and health from risks related to chemical substances (provides for list of dangerous chemical substances, and precautions)
USA	Fair Labour Standards Act (Each state also has its own laws relating to employment, including the employment of minors. If state law and FLSA overlap, the law which is more protective of the minor will apply.)	Occupational Safety and Health Act of 1970
Uzbekistan	Constitution of the Republic of Uzbekistan of 8 December 1992 Labour Code of the Republic of Uzbekistan of 21 December 1998 Law "On Education" of 29 August 1997 Law "On Protection of Labour" of 6 May 1993 Law "On Employment of Population" of 1 May 1998 Law "On Farms" of 30 April 1998 Law "On Agricultural Cooperative (Shirkat)" of 30 April 1998 Regulations "On Family Contract in Agricultural Production" of 15 July 1998 List of activities where labour of persons under 18 years is prohibited (9 June 2001, No. 1040) Law "On the Guarantees of the Rights of the Children" (effective from 8 January 2008)	

Sources: national legislation, ILO NATLEX, ILO regional offices – this table is provided as an indicative source, and does not claim exhaustiveness, not does it constitute legal opinion or advice

It should be noted that, as elsewhere in the world, some of the countries in question make a distinction in the application of labour legislation to the agriculture sector.

One notable case here is Pakistan. Workers in the agriculture sector – who constitute 60% of the national workforce – do not currently benefit from the statutory protections afforded by labour laws. However, it is noted that the Government of Pakistan is in the process of developing a regulatory code for Corporate Agriculture Farming – that is, applying labour law to larger-scale agriculture[72]. A Memorandum of Understanding was signed in 2002 between the Ministry of Labour and MinFAL (the Ministry of Food, Agriculture and Livestock); a draft bill has been prepared which is still confidential. The extension of labour legislation constitutes the first part of the national Decent Work programme signed by the Government of Pakistan with ILO.

The legislative situation in the United States is also of note in this regard. As the US Department of Labor notes[73], there are conditions which exempt certain employees from the minimum wage provisions, and/or the overtime pay provisions of the Fair Labor Standards Act. "Employees who are employed in agriculture as that term is defined in the Act are exempt from the overtime pay provisions. They do not have to be paid time and one half their regular rates of pay for hours worked in excess of forty per week. Agriculture does not include work performed on a farm which is not incidental to or in conjunction with such farmer's farming operation. It also does not include operations performed off a farm if performed by employees employed by someone other than the farmer whose agricultural products are being worked on. Any employer in agriculture who did not utilize more than 500 "man days" of agricultural labor in any calendar quarter of the preceding calendar year is exempt from the minimum wage and overtime pay provisions of the FLSA for the current calendar year. A "man day" is defined as any day during which an employee performs agricultural work for at least one hour."

Additional exemptions from the minimum wage and overtime provisions of the Fair Labor Standards Act for agricultural employees apply to the following (ibid.):

- Agricultural employees who are immediate family members of their employer
- Those principally engaged on the range in the production of livestock
- Local hand-harvest labourers who commute daily from their permanent residence, are paid on a piece rate basis in traditionally piece-rated occupations, and were engaged in agriculture less than thirteen weeks during the preceding calendar year
- Non-local minors, 16 years of age or under, who are hand harvesters, paid on a piece rate basis in traditionally piece-rated occupations, employed on the same farm as their parent, and paid the same piece rate as those over 16.

As evidenced below, there are several labour situations typical to small-scale cotton cultivation in many of the focus countries which are not subject to national labour legislation. For the main part, this is where work is performed as part of a family unit, and is hence not deemed to be a form of salaried employment covered by employment legislation.

It should also be noted that there are instances where employment legislation originally

[72] Central Labour Advisor, Ministry of Labour, Islamabad, personal communication, 2007
[73] Fact Sheet 12: Agricultural Employers Under the Fair Labor Standards Act (FLSA), U.S. Department of Labor: Employment Standards Administration - Wage and Hour Division, November 2007

formulated for an urban work setting has been extended to the agriculture sector. The most relevant example here is the Brazilian CLT Consolidation of Labour Law. Farmers' organisations have queried the applicability of working time regulations which do not permit for derogation to collective bargaining over maximum working hours in seasonal agricultural activities such as harvesting. The statutory daily maximum of 8 hours plus 2 hours' overtime is not perceived by agricultural employers to be sufficiently flexible in the context of labour needs at peak times, such as (cotton) harvesting.

3.5 Spheres of 'social impact' - 'social impacts' in smallholder production?

The mandate for this review gives strong direction toward a focus on questions relating to employment and labour. In terms of the potential spheres of negative impact, this focus entails the following:

- Breach of international labour standards
- Non-compliance with national legislation
- Impacts on physical well-being and safety

SEEP may wish to consider if this focus is adequate to capture the range of socio-economic issues, positive and negative, associated with smallholder cotton farming. This proposition is made in the light of the fact that "cotton is truly a small farmers' crop". As noted above, small cotton farms use almost all of the global labour employed in cotton to produce 65% of the world's output on 72% of the planted area[74].

That is, work on 'labour standards' is generally based on compliance with national law and international standards encapsulated in ILO conventions. However, some of the highest priority impacts identified in the literature reviewed here take place in the socio-economic sphere, where the grounding is not usually legal compliance – or not solely legal compliance. Instead, the rationale for addressing these broader social impacts is based on the broader-reaching concept of 'sustainability': consistent with the ICAC (2006) definition[75], sustainable production is understood as *'the ability to produce cotton today without diminishing the ability of future generations to produce cotton'*.

Of course, to some extent, the social issues involved in small-scale family cotton farming do correlate with 'traditional' labour concerns, in terms of who works on family plots, how tasks are distributed, the conditions people labour in and the financial rewards they receive. However, they also raise different questions around the broader economic and social effects of farming activities. For example, as smallholders switch their land and labour from subsistence farming or domestic markets to export markets, what effects does this have on family food security, nutrition and health? How do the environmental impacts of horticulture production influence livelihood prospects in the longer term? How does contract farming affect gender relations in the household and children's welfare?

Smallholder production involves very different contexts and labour arrangements compared with large scale commercial farming. Much labour-oriented research on export agriculture has so far given only limited attention to smallholder production and more research in this area is needed. What this review attempts to make clear is the diversity and complexity of the issues involved. A key question is, what are the income, labour and land control impacts of smallholder cotton farming, and how are the burdens and benefits distributed between family members and hired labour? The answers to such questions are rarely straightforward. As the research on female and child labour cited below clearly indicates, impacts are often paradoxical and are mediated through local social institutions (on land titling, gender

[74] The Contributions Of Cotton To Economy And Food Security In Developing Countries, P. Fortucci (Commodities And Trade Division – FAO), ICAC Conference on Cotton and Global Trade Negotiations, Washington DC, USA, 8-9 July, 2002
[75] Report Of The Executive Director Terry P. Townsend To The 65th Plenary Meeting Of The International Cotton Advisory Committee Goiânia, Brazil September 11-15, 2006

relations and socio-cultural norms).

More specifically, it is noted that the experience of efforts to remediate negative social impacts among smaller, more vulnerable agricultural producers – not uniquely cotton growing communities – have generated important lessons, namely:

- smallholders typically do not have the means to implement changes in labour practices without assistance – this may take the form of training and guidance, provision of materials such as personal protective equipment, or may relate more broadly to their economic circumstances.
- labour standards – which derive from a relationship of employment – cannot easily be applied where family labour, characterised by a lack of a formal employment relationship, is the prevalent labour input
- there is a significant risk of unintended consequences, most markedly market exclusion; as the Ethical Trading Initiative states in its Smallholder Guidelines:

  "When working with potentially vulnerable groups, such as smallholders and their workers, the margin for error is small. The livelihood of smallholders and workers may be at risk from unintended impacts of any compliance work, further undermining their ability to benefit from their involvement in the supply chain, or even removing them from it."[76]

However, it is also recognised that smallholder systems do not operate entirely outside the scope of hired labour. Given the pronounced seasonality of labour demand in cotton growing, a recurrent pattern in many of the regions covered in this review is the movement of various forms of casual labour toward the harvest: casual workers are drawn to cotton-picking, often paid at a piece rate or a daily wage and almost always on an informal basis which likely precludes the possibility of asserting any labour rights enshrined in national labour legislation. This work need not give rise to infringements of labour rights, but necessarily constitutes a high risk. Because of its informal and dispersed nature, little research data of consequence is available on the forms and conditions of seasonal hired labour in smallholder contexts. It is suggested that SEEP could profitably pursue research to find out more about this group of, potentially most vulnerable, workers.

[76] ETI Smallholder Guidelines, Ethical Trading Initiative, UK, 2005

4 Overview of typical 'social impacts' relating to agricultural work

4.1 Agricultural work and labour standards

This review suggests that there is currently insufficient research to make any comparative assertion with regard to practices in cotton cultivation vis-à-vis other agricultural sectors. What is clear from the literature review, however, is that cotton, as a 'cash crop', commonly provides the best – and indeed only – point of access to global markets for a significant number of developing country producers, and that the work entailed by this opportunity is both labour-intensive and arduous. This is particularly the case in those developing countries where communities' livelihoods most depend on the revenues generated through cotton cultivation.

The literature suggests that work in cotton cultivation bears many of the characteristics of work in agriculture more generally, summarised as follows by the ILO[77]:

- Of the 1.3 billion women, men and children who work in agriculture, 450 million work for wages.
- Women account for over half of agricultural labour.
- Seventy percent of the world's working children are involved in agriculture.
- Agriculture is one of the top three hazardous occupations, along with construction and mining.
- 170,000 agricultural workers die each year in workplace accidents.
- The fatal accident rate in agriculture is double that of other industries.
- 40,000 agricultural workers die each year from exposure to pesticides.

[77] ILO Facts on Agriculture, ILO, Geneva, 2003

4.2 Health and safety

Health and safety is a critical social issue in all agricultural sectors. Cotton is no exception. Given that the focus in this part of the review is on worker health and safety, the key issue relating to work in the cotton sector relates to pesticide use. This is also the 'social impact' around which there is the most substantial body of research.

While there is considerable literature on the potential health consequences of pesticide use, there are few comprehensive statistics relating to cotton cultivation. Kooistra[78] cites WHO figures suggesting that, at a global level annually 40,000 lives are lost due to pesticide application[79], representing 10% of all injuries in the agricultural sector[80]. Although higher numbers have been asserted[81] it is difficult to make reliable estimates due to a general lack of data, a lack of disaggregation by crop and the inability to separate pesticide exposure from other causes of disease.

Every year, Mancini suggests[82], an estimated 1 million to 5 million cases of pesticide poisoning occurs in the world, the majority of which are reported in developing countries[83]. However, little is reported about the long-term effects[84]. Moreover, Mancini (ibid.) contends, in Pakistan and India, agricultural labourers and farmers working in cotton fields are exposed to some of the most toxic pesticides. Furthermore, the socio-economic and climatic conditions of the South Asia region make the standard protective measures and equipment for safe handling and spraying of pesticides unsuitable.

The literature clearly establishes that the highest risks to human health relate to application of cotton pesticides. It should be noted that one area of considerable contention is the potential for workers involved in harvesting to be exposed to pesticides. It is noted that pesticides are not applied on cotton immediately prior to or during harvest. Given that all pesticides used in cotton are in principle biodegradeable, it is commonly held that people harvesting cotton would not come into contact with systemic pesticides during the harvesting process. However, several of the sources cited here contend that pickers *are* subject to exposure and hence contamination. This contention depends on the implicit assertion that pesticides are persistent up to and including the harvesting stage. However, it is noted that a minority of the research cited here focuses on establishing persistence of pesticides on leaf[85] or bud up to the harvesting stage. It is proposed that this technical issue does not fall under the scope or capacity of this review, and merits further discussion by SEEP experts.

In India, Mancini et al. (2005)[86] followed the health of 50 cotton growers over the course of

[78] The sustainability of cotton: Consequences for man and environment Karst Kooistra and Aad Termorshuizen Biological Farming Systems, Wageningen University, April 2006
[79] WHO, 2002. World health report 2002
[80] ILO, 1997. International conference on occupational health and safety in agriculture, Itasca, Illinois, 22-25 October 1997 No. 22
[81] Gaag, N. 2000. The facts on pesticides. New Internationalist. 323 05 2000 www.newint.org/issue323/facts.htm
[82] Statement of FAO: Impacts of Farmer Field Schools on Cotton Growers in Asia, Francesca Mancini, 65th Plenary Meeting of the International Cotton Advisory Committee, Goiania, Brazil, September 2006
[83] WHO, 1999. Public Health Impact of Pesticides Used in Agriculture. World Health Organization, Geneva, Switzerland.
[84] Kishi, M., 2005. The health impacts of pesticides: What Do We Know, What Can Be Done? In: Pretty, J.(Ed.), The Pesticide Detox. Earthscan, London, Sterling, VA, pp. 23-38.
[85] Given that defoliants are commonly not used in smallholder cultivation.
[86] Mancini, F., Van Bruggen, A., Jiggins, J.L.S., Ambatipudi, J.C., Murphy, H. 2005. Acute pesticide poisoning among female and male cotton growers in India. International Journal of Occupational and Environmental Health 11

one year during which she reported 323 events, of which 207 (84%) were associated with symptoms of mild to severe pesticide poisoning, and 32 (10%) were associated with symptoms typical of poisoning by organophosphates (used in 47% of the pesticide applications). Although in 6% of the spray sessions the neurotoxic effects on workers were serious, none sought medical care (Mancini et al, op.cit.). Responses to Mancini et al's survey questionnaires showed that 433 farmers (68.6%) sprayed pesticides themselves and were thus directly exposed. More than 75% used moderately or highly hazardous pesticides (based on WHO classification); 88% used no protection while handling pesticides. About 50% of sprayers mixed different brands. Retailers were the source of information about pesticides for 56%.

Focusing on Pakistan, Tariq et al[87] present a review of studies undertaken since 1960, giving an integrated picture of the implications of pesticide use for humans, animals, water and soils. In some areas of Punjab and Sindh, groundwater has been found to be contaminated due to pesticide use. There is also considerable evidence that farmers have overused and misused pesticides especially in cotton-growing areas. Due to occupational exposure, the report suggests, farmers are at higher risk to acute and chronic health effects associated with pesticides. Furthermore, Tariq et al observe that the intensive/over-use of pesticides in cotton areas involves a particular risk for field-workers, and results in residue concentration in cottonseed oil and cakes. In another study, Parveen et al. (1996) reported the presence of methamidaphos and monocrotophos residues in cottonseed in which all the samples surpassed the statutory Maximum Residue Levels (MRLs). However, Tariq et al notes that the literature indicates that these pesticides are hydrophilic in nature and the likelihood of their bioaccumulation is very low.

WWF-Pakistan[88], citing Irshad (2005)[89], reports that "it has been estimated that thousands of farmers are poisoned due to pesticide exposure, 63% households experiences sicknesses, 1% are hospitalized, 0.01% die with poisoning in [the] cotton zone of Punjab". WWF-Pakistan also indicates that "blood samples of cotton pickers in Multan district showed that 88% contained pesticide residues", although the study does not identify whether this relates to actual residues of different pesticides in the blood, or a reduction in cholinesterase levels due to exposure to anti-cholinesterase pesticides. The research does not establish the stage of the cotton cycle at which cotton pickers may have come in contact with pesticides.

Research suggests that women and children are most vulnerable to pesticide exposure. Issues relating to women's role in cotton cultivation are discussed more fully below. Mancini (2005) notes that typical female tasks in Indian cotton farming include mixing concentrated chemicals and refilling spraying tanks, and that these tasks are as hazardous as direct pesticide application. Moreover, this report suggests that low-income marginal farmers are also more often subjected to severe poisoning than are landlords.

Children – whose role in the sector is discussed below - are disproportionately affected by the toxic and long-term effects of pesticides for a number of critical reasons[90]. They absorb pesticides more rapidly than adults, have a less developed ability to detoxify and excrete

[87] Pesticides exposure in Pakistan: A review, Environment International 33,8 2007, Tariq et al, 2007
[88] Better management practices for cotton and sugarcane, Crop Management Review, WWF-Pakistan, 2006
[89] Insecticides a curse or cure and rational use of integrated pest management. Proc. Environmentally sustainable development Vol. III. COMSAT Institute of Technology pp 1399-1408. Irshad, M. (2005)
[90] UNEP, 2004. Childhood Pesticide Poisoning. Information for Advocacy and Action. Chemicals Programme of the United Nations Environment Programme, U.C. (Ed.).

substances and are also at greater risk for chronic and long-term developmental adverse effects. This is most critical for the reproductive systems of pre-pubescent girls.

Some of the broader socio-economic implications associated with the misuse of pesticides cited in the literature include: building up of pest resistance, a decline in populations of natural enemies and increased risk of pest outbreaks and, resulting in the failure of the chemical crop protection strategy. The increasing cost of inputs – Mancini (2006) notes insecticides alone represent around 15-25% of the cotton production cost in China, India, Pakistan – not paired with higher yield levels has reduced the profitability of cotton cultivation in many areas in the region[91] [92]. Poor farmers often are unable to repay the compound interest on debts contracted with money lenders or input dealers to purchase production inputs. In some cases, farmers have resorted to selling their most important production asset, the land, compromising the livelihood of their families. Even though no systematic study has been conducted yet, media in India describe cotton districts, where farmers live in the most distressful conditions, as suicide hot- spots[93].

Aside from the health and economic implications of pesticide use, there are also a series of broader 'environmental' concerns which have profound implications for the health and well-being of cotton-farming communities, including: groundwater contamination from pesticide run-off, water scarcity and stress, habitat loss and soil degradation. For instance, in some cotton-growing areas, depletion and contamination of fresh water sources have become major concerns. Substantial pesticide residues have been found in several brands of bottled drinking water and soft drinks in India[94].

In Brazil[95], analysis of samples of water taken from streams, rivers and surface water in the Pantanal basin, southern Mato Grosso state, detected traces of alachlor (WHO III), chlorpyrifos (WHO II), endosulfan (WHO II), metolachlor (WHO III), monocrotophos (WHO Ib) and profenofos (WHO II): all pesticides applied to cotton within the study area, although the study does not specify that cotton was the exclusive recipient of these applications.

The Environmental Justice Foundation[96] also cites research to the effect that "numerous studies undertaken in major cotton producing countries such as USA, India, Pakistan, Uzbekistan, Brazil, Australia, Greece and in West Africa have documented detectable levels of hazardous pesticides commonly applied to cotton in local water resources".

[91] Subrahmanyam, S., Sudhakar Reddy and Verstralen, K., 2003. Labour and financial markets from employers' perspective. The Case of Ranga Reddy District in Andhra Pradesh. Centre for Economic and Social studies. ILO Report.
[92] FAO, 2004. Environmental Education for Poor Farmers. Ooi, P.A.C., G. Walter-Echols, D. Weidong, A. L. Morales-Abubakar, L. Guan Soon, P. Pachagounder, M. H. Soomro, C. Galvan, F. Mancini, R. Petersen, K. Kamp (Eds.). FAO Regional Office for Asia and the Pacific.
[93] NAAS (National Academy of Agricultural Sciences), 2006. Roundtable on: The fabric of Cotton: seeds, farmers and textiles: What should be India's cotton agenda? Working draft: background paper July 3, 2006. India, New Delhi.
[94] CSE, 2003. Pesticide residues in bottled water, CSE Report. Centre for Science and Environment, New Delhi, India.
[95] Laabs et al., 'Pesticides in Surface Water, Sediment, and Rainfall of the Northeastern Pantanal Basin, Brazil', Journal of Environmental Quality, 31: 1636-1648, 2002
[96] The deadly chemicals in cotton, Environmental Justice Foundation in collaboration with Pesticide Action Network, 2007

4.3 Child labour

The issue of child labour is usually at the forefront of discussions when dealing with labour concerns in the cotton sector and is reported in many of the countries covered in this review. Given its immediate emotive charge – and the emphasis on child labour by some campaigning organisations – it is useful to clarify what is intended by this term, with reference to the ILO Conventions, the internationally-recognised standards on labour rights.

It is important to understand what is *not* meant by the term child labour. Young people's participation in legitimate work in line with their age, that does not affect their health and development, or interfere with their schooling, is generally regarded as being something positive, and may assist in helping them develop skills necessary for subsequent work.

Child labour, by contrast, is work that deprives children of their education, their health and their dignity. *In reality, however, there is no clear line dividing 'good' children's work from 'bad' child labour*. Rather, it is practical to refer to two approaches to defining child labour, as does the ILO in its conventions on child labour (C138 on minimum age and C182 on Worst Forms of Child Labour). These approaches focus on age and activity respectively.

- Age: according to the first approach, children under a certain age should not work. ILO convention 138 sets this at 15 (14 in developing countries), or statutory school-leaving age, whichever is higher. The two main exceptions are: a lower minimum age of 13 (12) for 'light work' – which neither harms a young person's development nor prejudices school attendance – and a higher minimum age of 18 for hazardous work.

- Activity: according to the second approach, child labour is defined according to its negative effects on children. 'Hazardous work' is work which jeopardises children's physical or psychological well-being, due to the nature or conditions of the work. This aspect is key in understanding the concept of child labour in cotton, because *several activities relating to cotton cultivation may be deemed hazardous*, including pesticide application and harvesting (the latter is defined as such under Uzbek national legislation, for instance). Convention 182 calls upon ILO member countries to determine through national legislation which activities are categorised as 'hazardous' for the purposes of younger workers.

Convention no. 138 requires that ratifying countries (158 countries at January 2006) establish and pursue policies to effectively abolish child labour. The convention defines a minimum age for admission to employment or work, which shall not be less than the age of completion of compulsory schooling, so that the children can develop physically and mentally before entering the workforce.

Table XI: Minimum age for entry into employment in accordance with ILO Convention No. 138

General minimum age	Minimum age for 'light work'	Minimum age for hazardous work
In normal circumstances: 15 years or older no younger than compulsory school age	13 years	18 years (16 years under certain strict conditions)
Where the economy and educational are insufficiently developed, countries can temporarily set the minimum age at 14 years	12 years	18 years (16 years under certain strict conditions)

'Light work': under this definition, ILO Convention No.138 allows for children aged 13-15 to carry out work under the following conditions: that it is not likely to be harmful to their health or development; that it does not prejudice their school attendance, their participation in vocational training programmes approved by competent authorities or their capacity to benefit from the instruction received.

ILO Convention No.182 defines some practices of child labour as worst forms, which have to be immediately eliminated. Worst forms are practices such as child slavery, forced labour, debt bondage, trafficking, serfdom, prostitution, pornography, and various forms of work that is hazardous to a child's health, safety and morals. Each ratifying country (of which there were 77 as at January 2006) has to establish a detailed list of the worst forms of child labour. The convention requires the ratifying states, as a matter of urgency, to take effective measures to secure the prohibition and elimination of these worst forms of child labour.

In addition to these 2 conventions, ILO convention No.184 on Safety and Health in Agriculture (2001) specifies that: "The minimum age for assignment to work in agriculture which by nature or the circumstances in which it is carried out is likely to harm the safety and the health of young persons (below age of 18 who have attained the minimum legal age for admission to employment) shall not be less than 18 years (art. 16)". The Convention further states that: "National law can authorize the performance of hazardous work as from 16 years of age on the condition that appropriate prior training is given and the safety and health of the young workers are fully protected" (art.16(3).

For reference, the ratification of conventions C138, C182 and C184 in the ten focus countries are re-capped here:

Table XII: Ratification of ILO Conventions relating to child labour in 10 focus countries

ILO Convention	Brazil	Burkina Faso	China	Greece	India	Pakistan	Syria	Turkey	USA	Uzbekistan[97]
138 (Child labour)	X	X	X	X	O	X	X	X	O	X
182 (Worst forms of child labour)	X	X	X	X	O	X	X	X	X	X
184 (Safety and Health in Agriculture)	O	O	O	O	O	O	O	O	O	O

Source: ILO

Legend:	ILO Core Conventions	X = ratified
	Other relevant ILO conventions	0 = not ratified

The national legal provisions on minimum age for employment, including definitions of light and hazardous work where available, are summarised in the table below.

[97] As of 24 June 2008, the ratification documents for C138 and C182 had been communicated to ILO in Geneva from the Government of Uzbekistan.

Table XIII: Legislation on minimum age for access to employment in 10 focus countries		
Country	**Minimum age**	
	Basic	**Hazardous Work**
Brazil	16 (14 for Apprenticeship)	18 (work that constitutes a physical strain or from employment in nocturnal, unhealthy, dangerous, or morally harmful conditions) - cotton-picking included as 'hazardous work' prohibited for under-18s
Burkina Faso	14 (exceptions may be authorised) 12 for light agricultural work - up to four and one-half hours per day	18 – Labour Code states that Ministerial Decree should list occupations in which children under 18 years may not work (Decree not available)
China	16 in all sectors: minors (under-16s) permitted in special circumstances to work in summer employment or work-study programmes	18 in mines and heavy industrial job
Greece	15 (12 for light work on family undertakings)	18
India	No minimum age - household enterprises are exempt from prohibitions on employing children under 1986 Act: no limits on young children working for their own parents. Under Plantation Labour Act, 1951, children/adolescents may work up to 27 hours a week.	14 (13 occupations and 57 processes are barred as hazardous to the children's lives and health under Child Labour Act 1986: domestic work, restaurant and hotel work added in 2006). *Does not apply to family farming.*
Pakistan	14 for general employment *No minimum age for family-based agriculture*	14 – Employment of Children Act of 1991 prohibits the employment of children in specified occupations and processes deemed dangerous or hazardous to their health (including pesticide application), but not from working in family-run farms.
Syria	12 (Under Art.47 of 1958 Agricultural Relations Act, it is prohibited to employ under-12s in agricultural work; young persons over 12 but under 18 years of age may be employed in agricultural work only with the consent of legal guardians.) Syria amended 1959 Labour Code in December 2000 to increase minimum age for employment from 12 to 15 years for *non-agricultural labour*. In all cases, parental permission is required for children under the age of 16.	15 (for application of agricultural chemicals) Order No. 183 of 2001 lists further prohibited activities for under-18s – including: manufacture of fertilizers from urea, dung, blood, bones and work in their storage areas; and storage and packing of cottonseeds in ship holds
Turkey	15 (at 14 may be employed picking fruit, vegetables or flowers)	18 – 2004 law on Employment of Children sets out prohibition to employ minors in a list of job such as jobs which are carried out with material which are harmful to health.
USA	16 (light work at 14 provided that work does not interfere with schooling health and well being – except mining and manufacturing) 16 during school hours (even in hazardous conditions if the farm is owned or operated by parents); 14 outside school hours; 12 with written consent of the parents; No age limit if when the minor is employed by his parents on a farm owned or operated by his or her parents	16 for hazardous work in agriculture (18 in other areas of economy). 11 prohibited agricultural activities defined as 'Hazardous Orders', including handling or applying agricultural chemicals that are acutely toxic.
Uzbekistan	16 (light work at 14 with written permission of Parents for 10 to 20 hours per week) Art. 20 of Law "On the Guarantees of the Rights of the Children" (2008) guarantees 'the right of the child to work by way of providing the necessary conditions to working persons under eighteen years of age to combine their education with work'	18 for unfavourable working conditions such as night shift or *cotton picking*.
Sources: national legislation (see Table X), ILO NATLEX, ILO-IPEC – this table is provided as an indicative source, and does not constitute legal opinion or advice		

4.3.1 Child labour on family smallholdings

The majority of child labour reported in the regions looked at here takes place in the context of 'family labour' on cotton smallholdings. It is often a point of some contention whether this form of children's economic activity is deemed to constitute 'child labour' *per se*. Indeed, in agriculture generally, it is very common for children to work as part of the family unit. Parents expect and often need their children to help out in the fields. ILO Convention 138, which sets the universal minimum age for employment, recognises the special circumstances presented by family-based child labour. Article 5 of Convention 138 states:

"The provisions of the Convention shall be applicable as a minimum to the following: mining and quarrying; manufacturing; construction; electricity, gas and water; sanitary services; transport, storage and communication; and plantations and other agricultural undertakings mainly producing for commercial purposes but excluding family and small-scale holdings producing for local consumption and not regularly employing hired workers."

By definition, however, farmers growing cotton as a cash crop in developing countries are doing so in order to sell it outside the sphere of local (ie national) consumption (although there is a distinction here between West Africa – which exports the majority of its lint production – and India and Pakistan which are net importers of lint).

Moreover, the terms of C138 must also be understood in the context of C182 on Worst Forms of Child Labour, and C184 on Safety and Health in Agriculture. These conventions are clear: all forms of children's activity – domestic, unpaid and commercial – which endanger the physical well-being (this is the 'hazardous' aspect of Worst Forms which is most relevant to cotton cultivation) are unacceptable for children under the age of 18 (except in a defined number of exceptional circumstances defined under national law), and should be a matter of priority for all actors concerned to end. The relative prioritisation – proposed by the ILO – of the forms of children's activity to be addressed and eradicated are indicated in the table below.

Table X1V: What 'child labour' is to be eradicated?[98]

	Work excluded from minimum age legislation [99]	Light work	Non-hazardous, non-light work	Hazardous work (and also other worst forms of child labour)
Children between the minimum age and 18				
Children between 12/13 and minimum age				
Children below 12/13 years of age				

[98] Adapted from ILO "A Future Without Child Labour" 2002

[99] Such as household chores done by children in their own home, and work carried out in the context of education and training in the context of protective conditions

4.3.2 Enactment and Enforcement of Child Labour Laws

Child labour legislation often applies only to certain sectors or exempts entire industries or occupations. The sectors most frequently excluded are those where the highest numbers of working children are found, such as small-scale agriculture. For example, in India and Pakistan, the minimum work age of 14 applies only to certain specified occupations and processes. Exceptions are also made in some countries for apprenticeships or educational work. In Brazil, for example, children under 14 are prohibited from working, except as apprentices.

Some countries have a single minimum age for hazardous work, while others specify several such ages, depending on the type of work. Some countries have a multitude of laws addressing child labour – often spanning decades – that may be inconsistent with one another or confusing to implement and enforce.

One of the most serious issues relating to child labour laws is their inadequate enforcement by many governments. In many countries, labour inspection is not a priority. Labour inspectorates often lack the vital resources and staff needed to reach remote areas and effectively monitor the child labour situation. In addition, they may not be motivated to enforce child labour laws if they do not perceive the employment of children as a problem.

4.3.3 Child labour and rural poverty

It is now commonly held that child labour is both a symptom of – and a perpetuating factor in – rural poverty. Child labour has to be seen not only as a consequence, but also as a cause, of poverty and underdevelopment. That is, children subjected to forms of labour exploitation, with little or no basic education, are likely to grow into illiterate adults, who have little prospect of breaking out of the trap of poverty into which they were born or of contributing to the development of society. As the IUF, the global trade union representing agricultural workers worldwide, states:

> *"Children work because their parents are poor; they have to supplement the family income or provide unpaid labour. Child labour in agriculture cannot be tackled in isolation from one of its main causes – rural poverty. Trade unions can work to eliminate child labour but the main priority has to be improving the living and working conditions of adult workers and through this eliminating the need for children to work. Cheap child labour undermines or weakens the possibility of negotiating a fair and decent wage for adult workers. We must work to eliminate child labour in order to help break the cycle of rural poverty."*
> *[Ron Oswald, IUF]*

However, child labour cannot be relegated to a pure side-effect of an all-determining economic circumstance: in the majority of jurisdictions covered here, with the exception of India[100], ILO Conventions have been ratified and local labour laws proscribe child labour as defined by the ILO.

In particular, it is clearly noted in most research on children's participation in cotton harvesting in Uzbekistan, that the circumstances of this work differ markedly from children's

[100] As of 24 June 2008, the ratification documents for C138 and C182 had been communicated to ILO in Geneva from the Government of Uzbekistan.

participation as part of a family unit in rural cotton-growing communities in West Africa and South Asia. The key differentiating issue highlighted in the vast majority of reports on child labour in Uzbek cotton cultivation – discussed below – is the alleged role of the state in coercion of children and young workers[101].

4.3.4 Availability and Reliability of Child Labour Data

Accurately identifying the extent of child labour within a country is an essential step towards the development of effective strategies for eliminating and preventing the problem. There is a great need for reliable child labour data – not only to assist governments in developing solutions but also to enable them to monitor progress. Significant problems in the collection and reporting of child labour data remain, but with the assistance of the ILO, efforts are now underway to improve data quality. Some of the efforts being undertaken by individual countries to improve the accuracy of child labour data include:

- conducting specialized national child labour surveys with the assistance of the ILO
- using standard definitions and methodology for collecting and reporting child labour data, based on those developed by the ILO's SIMPOC (Statistical Information & Monitoring Programme on Child Labour) programme and tested in several countries
- institutionalising the regular collection of child labour data by integrating a child labour component into periodic labour force surveys.

4.3.5 Overview of research on child labour by country

Within the countries in question here, there are a variety of data available on working children, very few of which are comparable or consistent.

Brazil

In Brazil, a report of the Institute for Work and Society Studies identified 69 main rural and urban activities in which children worked. Common rural activities included: harvesting corn, manioc, and other crops; fishing; mining; raising livestock; and producing charcoal. The most recent child labour data (for 2005) collated by national agencies (IBGE and PNAD)[102] indicate that: 1,864,822 children aged between 10 and 14 were involved either in economic activities ('economic activity' does not constitute child labour *per se*). Of these, 1,094,361 were involved in the agricultural sector.

ILO-IPEC Brazil[103] notes that child labour is a problem within smallholder, family-based cotton growing. IPEC has identified four states with substantial incidence of child labour in cotton cultivation: Paraná, Paraiba, Mato Grosso and Bahia. In all cases, these are family cotton farmers; in these areas, school calendars are modified to allow children's participation in harvesting. Due to rural depopulation of adolescents, it tends to be younger children that are working.

[101] 'Young workers' are defined as workers aged between the minimum age for access to employment (normally 14, 15 or 16) and 18.
[102] DIEESE Anuário dos Trabalhadores 2007
[103] Renato Mendes, ILO-IPEC Brasilia, personal communication, 2007

Burkina Faso

The national household survey carried out in 2003 in Burkina Faso indicates that 27.2% of children from 5 to 14 year old attend school and 97.44% of working children work in the agriculture sector[104].

There is one piece of detailed research looking at both supply- and demand-side factors in the use of child labour in Burkinabè cotton cultivation, which points to elements of child trafficking for purposes of labour. Using a methodology including interviews, testimonies collected from working children, parents and employers, and secondary sources, A. de Lange[105] focuses on child labour migration in south-eastern Burkina Faso. This migration within country borders leads children from the province of Gnagna to the more southern cotton-producing areas of Kompienga and Tapoa. Empirical evidences derived from interviews with migrating children and their parents, as well as with farmers who employ them demonstrate that children are being trafficked. The report then gives insights into the reason why the children decides to leave their home and assesses the effectiveness of current interventions that are underway to prevent the movement of children.

The US Department of State[106] observes with regard to Burkina Faso: "The law sets the minimum age for employment at 14 years; however, child labor was a problem. The minimum age for employment was inconsistent with the age for completing educational requirements, which generally was 16. In the domestic and agricultural sectors, the law permits children under the age of 14 to perform limited activities for up to four and one-half hours per day; however, many children under the age of 14 worked longer hours. An estimated 51 percent of children worked."

It is noted that ILO-IPEC is currently commissioning research which will aim to analyse the situation of child labour in the cotton-growing area of Boucle du Mouhoun in north-east Burkina Faso, estimating the prevalence of child labour, describing the nature of work and the working conditions (with a specific description of the WFCL) and the revenues generated for the children and their families.

China

There is very little data available on child labour in Chinese cotton cultivation.

A recent publication by ITUC[107] makes specific comments with regard to the use of children's work as part of official or semi-official school "programmes". The report suggests that school children are obliged to work harvesting the yearly cotton harvest in the Xinjiang Uyghur Autonomous Region of China (XUAR). Teachers and students are quoted, describing the harshness of the working conditions. According to the report, children live in dormitories for up to six weeks every year and work from 7am until dark with only half an hour for lunch and can be fined where they fail to meet the specified target. The report further documents incidents of injury and sexual aggression.

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[104] Burkina Faso – Country Statistics, ILO-UNICEF-World Bank, Understanding Children's Work, 2003
[105] "Going to Kompienga": A study on child labour migration and trafficking in Burkina Faso's south-eastern cotton sector, Albertine de Lange, IREWOC, Netherlands, 2006
[106] Country Reports on Human Rights Practices – Burkina Faso (U.S. Department of State, 2006)
[107] Child labour, forced labour and "work experience" in China – the blurred lines of illegality (ITUC/GUF/HKCTU, HKTUC Hong Kong Liaison Office 2007)

Greece

The US Department of Labor[108] indicates that: "The minimum age for employment in the industrial sector is 15 years, with higher limits for certain activities. Child labor laws do not cover children working on family farms or in family businesses. Age limits were enforced by occasional Labor Inspectorate spot checks and generally were observed. Child labor is not used in Greek industry, commercial agriculture, or mining. In general, Greek law prohibits employing individuals under age 15 and there are higher age limits for certain hazardous industries. The employment of children, where informally practiced, is limited to family farms and family enterprises, generally on a part-time basis. This work is not viewed in Greece as exploitation but is accepted as part of the socialization process to enhance family ties."

India

Cotton cultivation in India is labour-intensive crop with peaks of demand at weeding and harvesting time for female labour. Several reports[109] focus on the use of bonded young (7-14 years) female labourers employed in hybrid cottonseed production in India, in order to manually cross-pollinate cotton flowers: the impact of this task is commonly viewed as exacerbated by occupational exposure to pesticides. Some recent reports suggest that the overall number of children employed in hybrid cottonseed production in India is on the rise (Venkateswarlu, 2007), entailing that during the 2006-07 cultivation season nearly 416,460 children were employed in cottonseed farms in Gujarat, Andhra, Pradesh, Tamil Nadu and Karnataka states which account for nearly 92% of the total production area in the country.

One report[110] expressly suggests a link between prices paid to farmers and the use of child labour in cottonseed production in India focusing on replacement costs of child labour with adult labour. The study gives a wage estimation of the cost of a partial and complete substitution of child for adult labour and stresses the subsequent argument for an increase above the present procurement price. A further report[111] contends that, every year, several thousand tribal children between the ages of 10-14, shepherded by contractors come to work on the cotton farms of the Sabarkantha, Banaskantha, and Mehsana districts of Gujarat. The report suggests that children are paid daily wages of Rs.40, with deductions made for provisions supplied at the workplace.

As in Pakistan, the most common type of contract offered to adult field-workers/pickers is a piece-rate contract. The implications of piece-work have been explored in depth by ILO India[112]. This study, based on close primary research in Ranga Reddy District in Andhra Pradesh, notes that the piece rate contract system is replacing the daily wage system mainly because it solves the problem of labour scarcity in the peak season and also because the

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[108] Foreign Labor Trends: Greece, U.S. Bureau of International Affairs, US DoL, 2003

[109] Child Bondage Continues in Indian Cotton Supply Chain, India Committee of the Netherlands, Venkateswarlu, D, 2007; Seeds of Change – Impact of intervention by Bayer and Monsanto on the elimination of child labour on farms producing hybrid cottonseed in India (OECD, DWHH, ICN, EWN NRW, ILRF, 2007), Venkateswarlu, D, 2007; Review of Child Labour, Education and Poverty Agenda – India Country Report, Global March, ICCLE, 2006; Child labour in hybrid cottonseed production in Gujarat and Karnataka, India Committee of the Netherlands, Venkateswarlu, D, 2004; Contract Farming in India: Impacts on Women and Child Workers (IIED Gatekeeper Series 111, 2003) Singh, S, 2003

[110] The price of childhood (ICN, ILRF, EWN NRW, 2005), India Committee of the Netherlands, ILRF, EWN, NRW, 2005

[111] Wages of adolescence: Annual exodus of tribal adolescents from South Rajasthan to Bt Cotton Seed plot of North Gujarat – A case study, Migrant Workers Protection Front, 2007

[112] Labour and financial markets from the employers' perspective - The case of Ranga Reddy District in Andhra Pradesh (ILO, 2006)

cost of monitoring the labour is low. However, piece-rate contracts made with individual labourers have an adverse social impact because children may also accompany the parent to boost the parent's income for the day. Female labourers participating in the harvesting of cotton bring their children, especially female children. The employers pay Rs.1.25 - Rs.1.50 per kg, for the first round of harvesting, and then increase the rate to Rs.2.00 to Rs.2.50 per kg for subsequent harvests. An adult female labourer earns about Rs.40 per day and child will add about Rs.20–30 per day. Thus, female labourers have an incentive to involve their children in harvesting activity. The study notes the difficulty for employers to put an end to the involvement of children as female labourers refuse to work if their child is prohibited from accompanying them. The report concludes that a potential solution to this problem lies in shifting cotton harvesting remuneration from a piece-rate to a daily wage rate or contracting work out to a group of labourers.

It is noted that in light of such reports on the use of children in cottonseed production in some states, Central Government consultation is underway with the states in question – Karnataka, Andhra Pradesh, Rajasthan and Gujarat – requesting them to place this activity on the hazardous list under the law[113]. (Since labour is a concurrent subject under the Constitution, the Centre cannot amend laws unilaterally.) As of January 2008, the Child Labour Technical Advisory Committee is considering proposals to bring more clarity on the position of home-based child workers as well as agricultural workers.

Pakistan

According to the Pakistan Integrated Household Survey 1991, 62.9% of working children are agricultural workers and constitute 20.1% of all workers in that sector. A recent World Bank paper[114] exploits a 'natural experiment' approach[115] to identify the impact of legislation (Employment of Children Act 1991) in Pakistan on participation of children in the labour markets. The Employment of Children Act of 1991 prohibits the employment of children in specified occupations and processes deemed dangerous or hazardous to their health but not from working on family-run farms. Spraying cotton with pesticides (but not picking) is classified as 'hazardous' work under this legislation. The World Bank study finds some evidence that the Employment of Children Act 1991 was an effective tool in reducing the child labour immediately after its implementation.

The ILO estimated that 14.4% of children ages 10 to 14 years in Pakistan were working in 2002. Most working children are found in agriculture, including cotton. Research undertaken in the late 1990s by the Punjab Province government's Centre for Improvement of Working Conditions and Environment[116] (CIWCE) indicates that participation of children (girls) in cotton harvesting is commonplace in cotton-growing regions of Punjab (eg Lodhran), and that in some instances rural schools close during the cotton harvesting season.

Syria

There is no cotton-specific research available relating to the scale of child labour in Syria.

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[113] 'Child labour: Govt to expand list of hazardous jobs, amend law', Vikas Dhoot, The Indian Express, 8 January 2008

[114] Analyzing the Impact of Legislation on Child Labor in Pakistan (World Bank, Policy Research Working Paper 4399, 2007)

[115] A 'natural-experiment' approach focuses on a predetermined set of comparisons between the treatment group and the control group

[116] Women Cotton Pickers – District Lodhran, Labour and Manpower Department, Government of Punjab, Pakistan 1997

UNICEF research undertaken in 2002[117] indicates that, for the age group 10-11 the labour force participation rate stands at 3.1 percent, corresponding to approximately 26,500 children. For the age group 12-14 and 15-17 the rates and absolute numbers are 12.8 percent and about 171,500, and 32.9 percent and about 423,000 respectively. The majority of working children (65% in the 10-14 age group) are employed in agriculture. Girls are employed almost exclusively (over 90%) in this sector. About half of all employed children are unpaid workers in family businesses (most often in agriculture). In the age group 10-14, 54.6 percent corresponding to 108,000 children work here. In the age group 10-17, children working without pay in family business constitute 44.1% and almost 274,000 individuals.

Syria has ratified both ILO Conventions No. 138 and No. 182 on child labour. However, the amending legislation applies only to children who work for a salary: it does not extend protection, including effective inspections, to children engaged in work in the informal sector (ie family agriculture), where child work is likely to be concentrated and which may involve hazardous conditions. UNHRC documents[118] suggest that the amendments to the 1958 Agricultural Relations Act, proposed in 2002, do not adequately address these concerns. As UNDP[119] notes, "ratification of the core ILO conventions is not the same as implementation and a lot needs to be done in implementing the agenda of labour rights in Syria. […] A well functioning labour market is compatible with a pro-active stance on labour rights."

Turkey

Turkey is one of the few countries where ILO has undertaken an assessment of the scale of child labour in cotton cultivation specifically. This research was done in 2003, and as a result of subsequent activities by national government with ILO-IPEC, it is noted that the situation has likely demonstrably improved.

The 2003 baseline survey performed in Adana region[120] observed that children's time-use patterns are very much engrained in the agricultural production cycle. This is exacerbated where the child joins the family as seasonal migrant labour. Children who work in the cotton harvest are particularly burdened with work from May to October. This implies that regular school attendance for many of these children is not possible. When children not attending school were asked by ILO researchers why they did not go to school, they overwhelmingly replies (94.4 per cent), "because of work". Not surprisingly, school dropout rates are rather high as well. In the case of children involved in seasonal agricultural labour migration, the dropout rate was 20 per cent. The gender discrepancy in this regard is quite significant, 6.9 per cent for boys and 31.6 per cent for girls. Besides the adverse effect on work on education, there is also a risk of poor health and arduous living and working conditions in the cotton fields (risk of injury from tools and machinery and from shouldering heavy loads, risk from insect and snake bites, and exposure to agrochemicals).

ILO (2007)[121] notes that, in the Karatas region where the original survey was undertaken,

[117] Magnitude and Characteristics of Working Children in Syria (FAFO, UNICEF 2002)
[118] Human Rights Violations In Syria: NGO Report To The United Nations Human Rights Committee 84th Session, Eric Sottas, 2005
[119] Macroeconomic policies for poverty reduction: the case of Syria (UNDP, 2006)
[120] Baseline survey on worst forms of child labour in the agricultural sector: Children in cotton harvesting in Karatas, Adana (International Labour Office – IPEC, 2003)
[121] IPEC Highlights 2006 – Pilot Programme for working children from migrant farm families in Turkey (ILO-IPEC, Turkish Ministry of National Education, 2007)

the Turkish Ministry of National Education (MONE) has implemented an ILO-IPEC programme (2005-07) to address the specific needs of children involved in seasonal agricultural work and its impact on education. At the heart of the programme are the creation of year-round boarding school programmes and a school based child labour monitoring (CLM) system that brings educators and parents, employers (farmers), social workers and local authorities together to identify working children and follow up so they do not return to work. Younger siblings are also taken care of with special pre-school programmes, year round kindergarten and other services to keep them from starting to work.

USA

There is very little current research or data on the participation of children and young workers in cotton cultivation in the US. Given the proportionally low levels of relatively specialised labour required by the highly mechanised production systems in place, child labour is not judged to be an area of high risk.

Uzbekistan

The US Department of State Human Rights Report 2007 for Uzbekistan[122] concurs with the majority of research on the issue of child labour in Uzbek cotton cultivation, stating that:

> *"The large-scale compulsory mobilization of youth and students to help in the fall cotton harvest continued in most rural areas. Such labor was poorly paid; living conditions were poor, and children were forced to inhale harmful chemicals and pesticides sprayed on the fields. There were reports from human rights activists that local officials in some areas pressured teachers into releasing students from class to help in the harvest and, in many areas, schools closed for the harvest. Although most of the students involved in the cotton harvest were older than 15, there were occasional reports from human rights sources that children as young as 11 also participated. The latest available statistics from 2006 on the percentage of children involved in labor ranged from 2 to 19 percent. Much child labor was concentrated in family-organized cotton harvesting.*
>
> *Current legislation does not explicitly provide jurisdiction for inspectors from the Ministry of Labor and Social Protection to focus on child labor enforcement. Enforcement of child labor laws is implicitly under the jurisdiction of the Ministry of Labor, the prosecutor general, and the MOI [Ministry of Internal Affairs] and its general criminal investigators. The law provides both criminal and administrative sanctions against violators, but authorities did not punish violations related to the cotton harvest, and there were no reports of inspections resulting in prosecutions or administrative sanctions. Enforcement was lacking due in part to long-standing societal acceptance of child labor as a cheap method of cotton harvesting."*
> [US Department of State, Country Report on Human Rights Practices]

Uzbekistan has ratified seven ILO core conventions - on forced labour, freedom of association, and non-discrimination, having recently ratified both conventions on child labour[123]. ILO-IPEC has had a 3-year regional programme in Central Asia (including

[122] Uzbekistan: Country Reports on Human Rights Practices - 2007, Bureau of Democracy, Human Rights, and Labor, March 11, 2008 www.state.gov/g/drl/rls/hrrpt/2007/100623.htm

[123] As of 24 June 2008, the ratification documents for C138 and C182 had been communicated to ILO in Geneva from the Government of Uzbekistan.

Uzbekistan) from 2004-7, with a focus on the Worst Forms of Child Labour in agriculture, and this activity is likely to continue.

There is comprehensive legislation in place on child labour in Uzbekistan; the concern highlighted in the literature is that this legislation is not implemented with regard to cotton harvesting. The Uzbek Labour Code sets the minimum age of employment at 14, prohibits under-18s from working in hazardous conditions and sets out limited working hours for workers aged 14–18.

While many civil society and media reports refer generically to the single issue of 'child labour', there are two distinct areas of potential breach with ILO standards:

- the state-sanctioned use of child labour (as well as state-endorsed coercion of other workers, in particular university students) – namely forced child labour and forced labour: this factor distinguishes reported practices in Uzbekistan from other instances of child labour discussed here, which relate to the socio-economic pressures of family farming in the context of rural poverty, rather than to elements of organised coercion and coordination on the part of the state
- health and safety during harvesting[124]: including transport to and from fields, accommodation and provision of food and water – namely, hazardous work, indicating a 'Worst Form' of child labour.

It should be noted that the use of child labour in Uzbek cotton has not been researched extensively, principally because of difficulties of access and transparency. There are no exhaustive and reliable statistics on the number of working children. However, there are several credible sources of reported instances of child labour in Uzbekistan (UN Committee on the Rights of the Child[125], Council of Federation of Trade Unions of Uzbekistan[126], US Department of State (loc. cit.), Save The Children[127], International Crisis Group[128]). The UN Human Rights Committee (2006) in its concluding observations noted that it "remains concerned about […] the educational consequences of children working during cotton harvest season" and called on the State party to "guarantee that the cotton harvest season does not compromise children's right to education."

Cotton picking in Uzbekistan is seasonal, paid work: IRIN (2004)[129] cites a rate of 30 soum/kg (c. 0.03US$) and suggests that this is paid to all workers, regardless of age. However, this payment commonly amounts to a low sum and payment is frequently delayed; moreover, workers incur costs for food and accommodation during harvesting (up to c.1000 soum daily), meaning that they may effectively accrue debt. Working hours depend on the age of the child. ILO-IPEC notes that school pupils pick cotton between September

[124] Cf interview with Farm Director "As a result [of the decline in mechanisation] there is no need to take off the leaves of the cotton plants [by means of defoliants] to prepare them for cotton harvesting. Despite the fact the price of cotton is rising, we continue to pick most of it by hand. Therefore there are practically no cases in which the children are poisoned with defoliants and other toxic chemicals. However their health does suffer from the lack of drinking water, the poor living conditions, and lack of nutritious food. " Forced Child Labour in Uzbekistan's 2007 Cotton Harvest: Survey Results, Group of Human Rights Defenders and Journalists of Uzbekistan, Tashkent, 2008.
[125] Concluding observations: Uzbekistan, (United Nations Convention on the Rights of the Child, Committee on the Rights of the Child, 2006)
[126] Problems of employment and labour migration in the countries of Eurasian Economic Union (Speech by Ms Jachongirova, 2006), Council of Federation of Trade Unions of Uzbekistan, 2006
[127] Child Labor in Uzbekistan (Save The Children, Tahlil, 2001)
[128] The curse of cotton: Central Asia's destructive monoculture (International Crisis Group, 2005)
[129] Uzbekistan: Focus on child labour in southern cotton sector, (IRIN 12/10/2004)

and November (depending on region), as schools are closed during the cotton-picking season.

UNICEF Uzbekistan (correspondence 2005) suggests that children are employed in cotton-picking in an organised manner only after the best part of the cotton has been picked and when work in cotton fields does not yield substantial earnings for agricultural producers. Governmental procurement quotas were introduced some years ago for some agricultural crops, such as cotton, that have strategic significance for the national economy. Several reports observe that rural students/ pupils play the role of the labour reserve that ensures that the government quotas are reached.

The existence of abusive labour practices in cotton cultivation is formally denied by the Government of Uzbekistan, by reference to admittedly comprehensive employment legislation. However, it is widely held that this legislation is commonly not implemented with regard to cotton harvesting, which is not perceived to be employment but 'duty'. Namely, the cultural practice of 'collective work for the collective good' is invoked as grounds for the labour practices entailed in cotton harvesting. It is not explained how the notion of coercion is consistent with this tradition.

4.4 Bonded and forced labour

"Forced labour is higher in agriculture than in other sectors."[130]

The main international reference documents on forced labour include the ILO Forced Labour Convention 29 (1930) and Abolition of Forced Labour Convention 105 (1957). The Conventions define forced or compulsory labour as 'all work or service, which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily'. A worker's right to freely enter into employment and terminate employment when they desire is widely recognised as a human right. The term forced labour may conjure images of physically bonded workers treated as slaves. While this form of forced labour still exists in some countries, the more prevalent form is that of indebting an employee to a third party which exacts labour from the worker, such as a landlord.

The underlying factors that contribute to forced labour and bonded labour include:

- The use of labour intermediaries who provide casual labour to employers, commonly under conditions which compromise the workers' rights; recruitment agencies with unreasonable service fees which can be repaid only by continued work
- Social exclusion, often connected to caste or tribe
- Asymmetric information, whereby illiterate workers are not aware of their rights and can be taken advantage of
- Labour migration – particularly the situation of (irregular) migrant workers, who are commonly unaware but also unable to assert their legal labour rights, as non-registered workers
- Financial and labour market monopolies, which limits the workers' employment and credit options; inequitable loan or credit schemes managed by the employer
- In-kind remuneration, which allows employers to exacerbate dependent relations and hide low wages
- Coercion on the part of state authorities – the situation relating to these aspects of allegations concerning cotton harvesting practices in Uzbekistan is covered above. It should be noted, however, that the most recent global ILO report on forced labour made express reference to this aspect of cotton harvesting activities in the region: "In Tajikistan and Uzbekistan, for example, forced labour in the cotton industry has affected mainly women, children and young students. During the planting[131] and harvesting seasons, they are transported to the cotton fields and made to work for little or no remuneration. Coercion can be exercised through such penalties as threats of dismissing students from university. Women are sent by families according to an established quota, whereas children take part in this compulsory work as part of their school curricula."[132]

This section considers the literature on labour coercion in cotton cultivation in the focus countries. Research is only available on four countries – Brazil, Burkina Faso, India and Pakistan. It should not be inferred from this that the phenomenon is exclusive to – or necessarily focused in – these regions. On the contrary, it may be observed that some degree of acknowledgement through analysis of the issue constitutes the vital first step of

[130] SARD and agricultural workers, Karen Powell, FAO, 2005

[131] This point is contended by others, on the basis that there are no manual seed operations requiring large amounts of labour during planting in Uzbekistan.

[132] A global alliance against forced labour: Global Report under the Follow-up to the ILO Declaration on Fundamental Principles and Rights at Work, ILO, Geneva, 2005 – p.25

addressing the often complex and sensitive issues relating to labour coercion.

Brazil

While forced labour in its various forms is a global problem[133], Brazil is one of the few countries which openly acknowledges this problem. The Brazilian Labour Inspectorate has monitored use of forced labour since 1995. 4000 labour inspectors work in urban and rural areas, with support of police and MPT (Public Prosecutor for Labour): inspections may be triggered either by denunciation by unions, or case brought by individual to local labour authorities; or by inspectorate's observation of economic activities (eg over-production). Since 2004, the Inspectorate has released the names of non-compliant estates every six months (most recently in January 2008).

The International Labour Organization, the Ethos Institute, and the Repórter Brasil NGO have developed a facilitated research system based on this disclosure. This tool is used by public and private banks to prohibit lending to offenders, and to avoid state and private procurement from offenders. As of 2008, 5 cotton estates were found not to comply with forced labour regulation which involved 355 workers and represented 2.72% of the overall number of non-complying estates[134]. (Estates are included in the non-compliance list only after the conclusion of an administrative process determined by the Labour Inspectorate.)

The Labour Inspectorate (personal communication) indicates that the regional concentration of forced labour is in Northern region (Amazon) and Central Western region (Mato Grosso, Tocantins, Goias and Mato Grosso do Sul). All expert parties agreed that forced labour is used to clear land for various activities, including cotton; however it is not used in hoeing, pesticide application or harvesting – namely forced labour is not deployed in cotton cultivation *per se*.

Moreover, within the national picture, both Government and civil society organisations concur that forced labour in agri-business is *not* common – and the Labour Inspectorate has found fewer cases in cotton than in other export crops. Other sectors, such as cattle-ranching and charcoal manufacture – represent a significantly larger proportion of cases of non-compliance with forced labour legislation[135].

Instituto Algodão Social

IAS was created in 2005 by producers in Mato Grosso 'to 'regularise labour relations' in Mato Grosso cotton sector, in response to concerns of Government, civil society and buyers relating to use of forced labour. IAS has made considerable steps toward implementing a farm-level labour auditing system. The Institute is a private not-for-profit, currently funded by the FACUAL cotton growers' support fund for Mato Grosso and AMPA, the state growers' association, affiliated to ABRAPA. With the launch of the 'Seal of Social Compliance', IAS seeks to become self-funding through a levy (30 cents per bale) on issuing the seal.

IAS currently covers 400 large-scale growers in Mato Grosso – the vast majority of state-

[133] A global alliance against forced labour: Global Report under the Follow-up to the ILO Declaration on Fundamental Principles and Rights at Work, ILO, Geneva, 2005
[134] http://www.reporterbrasil.org.br/listasuja/index.php?lingua=en
[135] Report on a supplementary study of the magnitude of slave labour in Brazil (ILO, 2003)

wide production – of which 357 have been audited. Working with five two-person teams comprising health & safety and labour specialists, the Institute delivers training to farm managers, monitors farm labour standards and proposes corrective actions. The IAS audit protocol comprises a series of questions similar to most standard labour auditing protocols, and covers a broad series of compliance benchmarks to national labour law. During monitoring visits, a proportion of workers are interviewed (15%), alongside questions put to management. IAS is seeking to expand the scope of work to include environmental impacts: monitoring already includes health and safety – pesticide use and storage, provision and use of Personal Protective Equipment – and it is intended to include this to cover input usage levels and better agronomic practice. While IAS currently only covers Mato Grosso, there are plans for ABRAPA to support the establishment of similar initiatives in other key producing states - Bahia, Paraná, Goias and Mato Grosso do Sul. In all except Paraná, these would be funded by the equivalents of FACUAL in Mato Grosso – cotton growers' support funds.

Burkina Faso (sub-regional)

There are also reports of some instances of forced child labour in parts of West Africa, including the eastern border region of Burkina Faso, a focus country here. In particular, ILO-IPEC reports that in the north of Benin, around Banikoara, children are forced to work seasonally in the cotton fields, and are commonly trafficked by third parties from neighbouring Burkina Faso. ILO-IPEC Benin has produced a documentary – available in DVD format – which includes footage of children and young workers applying pesticides with no protective equipment, and also contains interviews with these young workers, focusing on their living and working conditions, as well as the circumstances under which they have migrated (typically from Burkina Faso) to work on cotton farms in Northern Benin.[136]

A NGO working on the issue - the Africa Third Millennium Group – indicates that in the Banikoara region, a farmer may have on average 10 children working on his farm: the children, aged between six and 17, live on the farm, under harsh conditions. On average, they work ten hours a day, and are poorly nourished. Supported by ILO-IPEC, Africa Third Millennium Group has developed a project – the 'Support Project to Care for and Rehabilitate Children Victimised by the Worst Forms of Labour and Trafficking in Banikoara's Agricultural Sector' – which aims at educational rehabilitation and awareness-raising on forced child labour.

Pakistan

Bonded labour is prohibited under the Pakistan Constitution and the Bonded Labour System (Abolition) Act, promulgated in 1992. The National Steering Committee on Bonded Labour comprises stakeholders and civil society organizations along with the government to control and abolish bonded labour in Pakistan. However, Pakistan is still the subject of much international concern regarding bonded labour, particularly in eastern parts of Sindh province and some areas in Southern Punjab which constitute the majority of the 'cotton belt', and this phenomenon has been fully documented in the literature, but there has been no focused study on the specific situation in the cotton sector – all research has looked at

[136] Film documentaire: les enfants travailleurs ruraux, IPEC-BIT Bénin, 2005

'agriculture' generally, albeit within the 'cotton belt'.[137,138,139,140,141]

While the situation has improved, not least due to serious and concerted efforts by the state and donor programmes, there remain serious and widespread challenges to changing the labour and lending practices which give rise to labour bondage. Bondage here means the 'unfreedom' of a worker to leave their employment due to the need to continue working in order to repay a debt liable either to the employer or to a third party, which can only be repaid by this waged work. In its most typical manifestation, a worker – usually an adult man – takes a loan or salary advance from an employer, labour contractor or landlord. Then the debtor – and often family members as well – is obliged to work for that person for reduced wages until the debt is repaid. The terms of the unwritten, interlinked labour-credit contract are strongly biased in favour of the lender. To meet family needs, the worker is forced to borrow additional cash and the debt burden mounts. The victims of bonded labour tend to be the poorest and least educated segments of the population, from low castes and religious minorities.

Of particular note is the joint NRSP-ILO project on 'Prevention of Family Indebtedness Microfinance and Related Services Project in Hyderabad': the Project's purpose was to provide a social safety net for the former *haris* (bonded labourers). The safety net was intended to reduce the likelihood of freed bonded labourers being exploited or returning to bonded labour as a result of indebtedness. The safety net's economic components included access to affordable micro-credit, a savings programme and, most innovatively, a land-lease programme that has so far enabled 54 families to own a piece of land. Eventually, 400 families will own a small plot of land to which they hold title.

India

Bonded labour is banned by law in India. Presently there is no empirical study substantiating the existence of 'bonded labour' practices in the cotton sector. However, bonded child labour is reportedly widespread in certain areas of central India, such as Bihar, Orissa and Andhra Pradesh. In some villages, landlords have been found to rely almost exclusively on child bonded labour. More detail on the forms of bonded child labour – particularly in cotton seed production – are contained in the section on child labour above.

Debt bondage in farming is the most widespread form of forced labour in India. There is a startling variation among estimates of bonded child labour in the Indian farm sector. Official Government of India figures put the total number of bonded workers (children and adults) at 353,000, while NGO estimates range from 2.6 million (child and adult) bonded workers to 15 million bonded child farm workers[142].

[137] Bonded labour in agriculture: a rapid assessment in Punjab and North West Frontier Province, Pakistan (International Labour Office, InFocus Programme on Promoting the Declaration on Fundamental Principles and Rights at Work, Working Paper 25, 2004)
[138] Bonded labour in agriculture: a rapid assessment in Sindh and Balochistan, Pakistan (International Labour Office, InFocus Programme on Promoting the Declaration on Fundamental Principles and Rights at Work, Working Paper 26, 2004)
[139] Information on Pakistan - Compliance with ILO Convention No.29 on Forced Labour (Anti-Slavery, 2006)
[140] Bonded Labour in Pakistan (ILO, InFocus Programme on Promoting the Declaration on Fundamental Principles and Rights at Work, Working Paper 01, 2001)
[141] Travail forcé des enfants: mécanismes et caractéristiques (ILO – IPEC, 2007)
[142] International Resources for Fairer Trade, India, personal communication, 2006

4.5 Gender impact: women in cotton cultivation

"While export agriculture can be a good source of livelihood, the distribution of work burdens and income benefits between family members can be uneven."[143]

"As in the poorest regions of the world agriculture has the greatest dominance of female employment, a focus on this sector can also contribute to greater equality in the world of work."[144]

The research reviewed here strongly suggests that a) women are vitally involved in smallholder cotton cultivation and; b) this role is seldom fully acknowledged or rewarded. The 'feminisation' of agriculture has been the subject of much research in recent years: in several cases it has been noted that this phenomenon has been amplified by the large-scale migration to urban areas of men seeking higher-paid work[145].

Women participating in the cotton sector in many of the smallholder-dominated countries considered here face similar problems: lack of access to credit, lack of decision-making independence, lack of property entitlement, lack of representation and participation in collective organisation, disproportionate health risks from pesticide use, and lack of coverage by national labour legislation. In family farming contexts, the majority of literature concludes that women's work as family labour is grossly under-reported, and occupational segregation gives rise to uneven costs/benefits to be drawn from participation in cotton cultivation. Women may put in many more hours of labour on an export crop, but receive little share in the money earned or say in how it is spent. On the other hand, it is noted that some female family members – particularly those involved in premium-paying niche market value chains such as Fairtrade and organic – report increased independence and status in family decision-making, as a result of their work on an export crop such as cotton.

4.5.1 Occupational segregation, remuneration and women as 'family labour'

Women in smallholder contexts are commonly involved in critical cotton cultivation activities such as sowing, fertilising, weeding and harvesting. Women's participation in smallholder cotton farming may be under a variety of arrangements including: as family labour, as day-labour, or as contract labour.

One marked example of 'occupational segregation' is to be found in the gender dimension of cotton harvesting in Pakistan. A recent newspaper article written by the former State Secretary of Planning highlights an ongoing concern with regard to women's role within Pakistani cotton cultivation. "The cotton crop is picked exclusively by women. Millions of women cotton pickers spend winter months of November and December and earn about [PK]Rs7000 for two months of arduous labour. Although it is below the minimum wage, still it provides a useful supplement to poor households in the region. With cotton crop dipping by 20 per cent, the wages of these hardworking poor rural women also fall by the same amount."[146]

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[143] Global Agri-Food Chains: Employment and Social Issues in Fresh Fruit and Vegetables, Sarah Best and Ivanka Mamic, ILO, 2007

[144] ibid

[145] Feminization of India's agriculture workforce (International Labour Office, ACTRAV, 2003)

[146] 'Cotton crisis and rural poverty', Dr Akhtar Hasan Khan, Dawn 3 March 2008

The vast majority of research indicates that the quasi-entirety of cotton picking in Pakistan is performed by women workers. Such women are hired by the day: SDPI research [2007] suggests that the typical current daily rate is 60-80 PKR. Where payment for cotton-picking is in kind, CIWCE (personal communication) confirms that this is currently (2007) at a rate of between 1/14th - 1/16th of cotton picked (which is typically up to one maund/40kg). CIWCE also suggests that women employed for soil-softening (when plants are 4-5" high) are underpaid, perhaps more so than during harvesting.

In other regions, such as Uzbekistan, research suggests that women involved in cotton cultivation have been disproportionately affected by macro-economic change – such as in agriculture and land policy. UNRISD research uses enterprise-level data to illustrate two pathways of farm restructuring in Uzbekistan. For UNRISD, "the shift from collective farms to joint-stock shareholding companies (*shirkats*) has resulted in a process of labour retrenchment that has affected women significantly. The liquidation of collective farms in favour of independent farms organized as Farmers' Associations has consolidated farm management as a male occupation. While the actual labour input of women into farming activities on household plots, private subsidiary plots and in cotton production has remained extremely high, they are increasingly incorporated into the workforce either as unpaid family labourers or as casual labourers earning piece-wage rates."[147]

ICG also highlights the vulnerability of women workers in Uzbek cotton cultivation[148]. The ICG report suggests that Uzbek women are not only to subject disadvantageous land tenure arrangements, but also undertake arduous work in harvesting – often unpaid – under threat of losing entitlement to welfare benefit.

4.5.2 Health and safety for women cotton growers and workers

As noted in the section on health and safety above, where chemical pesticides are used, these bring with them additional dangers for women, whose reproductive health may be put at significant risk. Furthermore, in the smallholder-dominated regions looked at here, women also assume the vast majority of domestic labour responsibilities: aside from the physical implications, where women are used to spray pesticides before then preparing the household meal, for instance, this may endanger the health of the household.

The implications of exposure to pesticides during cotton cultivation for women's and girls' health are broadly covered in the section on health and Safety above, particular with regard to India, where the most research work has been undertaken on this important topic.

The Pakistan Journal of Biological Sciences (PJBS, 2005)[149] notes that some 2.6 million women pick cotton in 9 major cotton growing districts of Pakistan. The study cites a 2001 study estimating that, out of this 2.6 million, some 2.2 million women become ill from their exposure to pesticides[150]. Women cotton pickers complain of dizziness, muscular pain and suffocation due to acute pesticide poisoning because of inhalation of fumes. (The study notes that, while women are generally not at all involved in pesticide application, they are

[147] Uzbekistan – Agrarian Reform, Gender and Land Rights in Uzbekistan, Deniz Kandiyoti, UNRISD, 2002
[148] The curse of cotton: Central Asia's destructive monoculture (International Crisis Group, 2005)
[149] Rizwan, S. et al, 'Advance effect of pesticides on reproduction hormones of women cotton pickers' (Pakistan Journal of Biological Sciences, 11, 2005)
[150] Policy and Strategy of Rational Use of Pesticides in Pakistan, 2001, pp.36-38

involved in several on-farm and off-farm activities at the time of spraying. It does not suggest a direct link between cotton-picking and pesticide exposure.) The study seeks to test the hypothesis that, after a spraying season, occupational exposure to pesticides may cause changes in hormonal levels which would be detectable in a short-term study. To test this hypothesis, the PJBS study undertook an analysis of the changes in reproductive hormones before and after a spraying season in both a group of women farmers exposed to – and a control group not exposed to – synthetic pesticides in the Khairpur region. The result of the study shows that both pre-season and post-season, significant disparities in levels of Luteinizing hormone (LH), follicle-stimulating hormone (FSH), progesterone and estradiol levels were found between cotton pickers and non-pickers. In particular, levels of FSH and progesterone were normal among both the experimental (picker) and control (non-picker) populations during pre-season, but were proportionately higher ($p<0.01$) in the experimental population (pickers) after exposure to pesticides. The PJBS study concludes that it is very likely that pesticides affect the hormone levels of cotton-pickers in the Khairpur region.

It is noted that in 1990, the Agriculture Prices Commission of Pakistan reported ill effects of pesticide residues on the health of cotton-picking women[151]. The women's division had referred this matter for research to PARC in 1987-88. No research has been undertaken to date. A study of 300 cotton-picking women in Lodhran District (Punjab) undertaken by the Punjab provincial government (CIWCE)[152] notes that "there is absolutely no health and safety hazard in the profession of cotton picking" as picking starts long enough after the final pesticide application. However the CIWCE report finds that the women cotton-pickers interviewed were paid 40 rupees / 40 kg by landlord-employers, and that they were both uneducated (90%) and predominantly unmarried (67%). These women also commonly worked 7 days a week.

4.5.3 Land tenure, access to markets and to credit for women

FAO[153] has undertaken concerted work on the gender dimension of norms relating to agriculture, all relevant to cotton, focusing on three areas of law: rights to land and other natural resources; agricultural labour rights; and rights concerning agricultural self-employment activities, encompassing women's status in cooperatives and family enterprises on the one hand, and their rights of access to credit, training, agricultural extension and marketing services on the other. While these issues are often dealt with separately in the literature – foremost for reasons of clarity – they are in reality intertwined. For example, access to credit partly depends on land ownership, as land titles can be used as collateral to secure loans. Moreover, cooperative by-laws may require land ownership as a condition for membership of rural cooperatives. On the other hand, women's limited access to credit and employment constrains their ability to purchase land.

To this end, a 2006 paper on the 'Feminization of Agriculture in China'[154] highlights that policies that ensure equal access to land, regulations that dictate open access to credit, and economic development strategies that encourage competitive and efficient markets have all contributed to an environment in which women farmers can and appear to succeed. The

[151] 'Cotton crisis and rural poverty', Dr Akhtar Hasan Khan, Dawn 3 March 2008
[152] Women Cotton Pickers – District Lodhran (Labour and Manpower Department, Government of Punjab, Pakistan 1997
[153] Gender and law – Women's rights in agriculture (FAO Legislative study, 76, 2002)
[154] Feminization of Agriculture in China: Debunking the Myth and Measuring the Consequence of Women Participation in Agriculture (Latin American Centre for Rural Development, 2006)

paper concludes that there is no reason why Chinese women cannot produce equally efficiently to men.

Equally, civil society reports from India (such as SEEDS, 2001[155]) document the substantial and enduring barriers and biases obstructing efforts to strengthen women's relationship to the resource-generating asset of land. The SEEDS report suggests that women's independent claims to land have been difficult to achieve, and presents a range of cooperative strategies for enabling women to retain and cultivate the land and shows how micro-credit and other programmes can be redirected to increase the amount and productivity of land under women's control.

4.5.4 Equitable and transparent distribution of household revenues

When credit or purchase payments are made, these may commonly be appropriated by the male head of the household in many smallholder contexts. It is for this reason that the FLO seed cotton standard for small farmers requires that, in the case of women farmers, "it has to be ensured that payments are given to the woman growers directly (not to the husband)". Moreover, the FLO smallholder standard also prescribes a minimum requirement that "employment is not conditioned by employment of the spouse; spouses have the right to off-farm employment".

Similarly, in Syria, IFAD reports that women's limited control over agricultural resources is a barrier to their access to production credit, equipment and resources: male control of marketing further reinforces women's lack of control over income[156].

Cultural factors

Social Accountability in Sustainable Agriculture (SASA)[157] notes the complexities of taking adequate consideration of cultural factors determining gender while assessing the implementation of ostensibly gender-blind/non-discriminatory labour conditions. The SASA Burkina Faso Audit[158] noted that women commonly needed to seek authorisation from their husband to obtain employment outside off-farm. This raises difficult questions about the freedom or chosen nature of employment in the context of international labour norms. SASA (loc. cit.) reports another example raised in a labour standards workshop in Pakistan, where "organisations indicated that they could not promote women because male workers would not respect them. While this is discrimination, cultural realities mean that providing equal opportunities to women will require a long-term process initiated and owned by the certification applicant and its clients".

What are the gender implications of lower input farming?

There is not a clear consensus on the gender impact of less input-intensive cotton farming

[155] Are We Not Peasants Too – Land Rights and Women's Claims in India (SEEDS, 21, 2002). SEEDS is published by the Population Council, US and 'presents innovative and practical program ideas to address the economic roles and needs of low-income women'.
[156] www.ifad.org/gender/learning/sector/agriculture/31.htm
[157] SASA Final Report on Social Standards and Social Auditing Methodologies, ISEAL Alliance, London, 2004
[158] SASA Final Report on Internal Control Systems & Management Systems, ISEAL Alliance, London, 2004

techniques. Some reports on organic cotton growing (such as in West Africa[159]) have contended that access to organic techniques have increased women's participation and ownership of cotton fields. Firstly, as organic-specific credits – together with the reduced input requirements of organic methods – have enabled women to access funds independently and to invest these in their own production. (However, and more problematically, it is equally contended by some observers that women may be over-represented in organic initiatives as these are not perceived by men to be 'serious' economic alternatives to conventional farming methods.) Second, rational input-minimisation techniques present less of a threat to women's health through diminished contamination risk. However, it is contended elsewhere – by FAO India[160], for instance – that given the increase in mid-cycle labour inputs (weeding etc) necessitated by a shift to IPM, for example, this increased labour requirement may fall disproportionately on the shoulders of women workers.

IPM labour demand has therefore been suggested also as limiting IPM diffusion. It should be noted, however, that the most recent EU-FAO cotton IPM project in India undertook an assessment of the changes in the gender division of labour before and after the adoption of IPM in cotton farms[161]. An analysis of the physical labour use, carried out on a sub-sample (43 FFS and 52 control farms), showed that the adoption of IPM in the studied farms did *not* lead to an increase in the overall physical labour requirement, nor in the total time spent on plant protection.

Clearly, a good number of the contributory causes to women's unequal position in cotton cultivation lie outside the scope of a sector-specific study such as this, as they are endemic and structurally entrenched: land rights, preponderance of unpaid 'family labour' and cultural views, for instance.

[159] Ferrigno, S et al, Organic Cotton: A New Development Path For African Smallholders? (IIED Gatekeeper Series 120, 2005)
[160] Fact Sheet India: Women in Agriculture, Environment and Rural Production, FAO, 1999
[161] Mancini F., Thermorshuizen A. J. Jiggins and A. van Bruggen, 2008. Increasing the environmental and social sustainability of cotton through farmer education in Andrha Pradesh, 2007, Agricultural Systems 96, 16-25

4.6 Worker and producer organisation

This section reviews the literature on two parallel questions which are key to the 'social impacts' of cotton cultivation: the socio-economic implications of farmer organisation – such as the ability to collectively procure inputs, to negotiate on price and to access larger and higher value markets – and the 'labour standard' of freedom of association and the rights to collective bargaining. These issues are not identical, and 'producers' (employers) and 'workers' (employees) may indeed find themselves on different sides of the negotiating table. However, the impacts concerning producer and worker organisation relate to the same fundamental issue – the importance of organisation in promoting and defending collective interests. Farmers and workers who are organised are better able to realise their economic and labour rights. Accordingly, the emphasis here – as in the literature – is on producer organisation in smallholder-predominated regions, and worker organisation where cotton work is characterised by larger-scale, more formal employment.

For instance, in the Burkinabè context, the 2005 OECD Sahel Club review of cotton sustainability in West Africa[162] emphasises the need for the 'strengthening of cotton producer organisations', in order to increase participation of producers in international value chains, as well as to promote gender equality and equitable access to services and profits related to cotton cultivation.

The issue of worker / farmer organisation also provides a clear example of why addressing the social impacts of cotton cultivation in developing economies purely from a labour rights perspective is not always the most apt or comprehensive approach. From a labour rights point of view, freedom of association means that workers should be free to organise and not hindered in so doing by employer or state. The problem alluded to in much of the literature is that the constraint on worker or farmer organisation is frequently material, not coercive: it is the lack of resources and capacity to form organisations which commonly prevents such development.

4.6.1 Producer organisation

In one sense, the forms of producer organisation found in smallholder-predominated regions in question here can be understood as fulfilling the mandate of 'freedom of association' as defined in the ILO conventions on the topic: smallholders are, nominally, employers, and employers – as well as employees – are entitled to freedom of association under the ILO Convention No. 87. However, Convention No. 98 – on the right to collective bargaining – refers to negotiation between two parties linked by a relationship of employment (the 'social partners'). The negotiation undertaken by smallholder organisations is commercial negotiation on price with a trading partner and hence cannot sensibly be understood as 'collective bargaining'.

Some strong forms of farmer/producer organisation have developed in francophone West Africa, including Burkina Faso, where the vertically integrated structure of the cotton sector has facilitated the potential for farmers to negotiate prices with the parastatals and their private-sector successors. Burkina Faso has seen the development of perhaps the strongest producer structure in the region, the UNPCB, which holds a 30% share in SOFITEX, which

[162] Economic And Social Importance Of Cotton in West Africa: Role Of Cotton In Regional Development, Trade And Livelihoods, Sahel and West Africa Club Secretariat / OECD, November 2005

administers ginning, marketing and distribution in the largest of the three 'cotton regions'.

By contrast, producers in several of the other focus countries have less integrated and less developed structures of representation.

It should also be noted that UNEP has focused in the important potential role for producer cooperatives (sector associations) in China, in its recommendations to the Ministry of Agriculture[163]. For UNEP, "establishing cotton production cooperatives is a possible solution. The cooperative is organized by farmers on the principle of voluntary participation. It should be an economic corporate organization and can assume a legal status. The cooperative will have the ability to purchase good quality cotton seed, cultivate one variety in one region in order to ensure the quality, and demand high prices for high quality products. Additionally, it can increase agricultural inputs, introduce new varieties and benefit from technical innovations."

4.6.2 Worker organisation

Freedom of association and the right to collective bargaining are established in ILO Conventions as 'core' labour standards and hence have the status of universal human rights. The key reference points for social standards set in this area are ILO Conventions No. 87 (Freedom of Association and Protection of the Right to Organise Convention, 1948) and No. 98 (Right to Organise and Collective Bargaining Convention 1949), as well as ILO Convention No.141 (Rural Workers' Organisations 1975). ILO Convention 141 on Rural Workers' Organisations specifically articulates that member states and other actors involved with rural workers should take steps to assist the development of viable worker's organisations as a means of enhancing working conditions and the livelihoods for workers.

There is, however, a profound challenge in addressing freedom of association in the majority of developing countries analysed in this report. In brief, there is commonly little formal worker organisation in the agricultural sector (other than in large-scale plantations), particularly in the cotton sector which is dominated in labour-force terms by smallholder production. The ILO states: "trade union organisations are generally weak in rural areas […] collective bargaining is often limited to large plantations. Seasonal, migratory and casual labour processes, with the added constraints of illiteracy, ignorance of workers' rights, and isolation render the task of organising among rural workers particularly difficult. ILO tripartite bodies have consistently recalled the need to apply in practice basic labour rights in rural areas and strengthen rural workers' organisations" [cited in SASA, 2004[164]].

In pragmatic terms, within the cotton sectors of the countries studied here, one can most usefully speak of the role of worker representative organisations (trade unions) in the context of large-scale cotton farms, as found in the US and Brazil, in particular.

While under Brazilian law all workers are free to join a trade union, most informal sector workers, such as unregistered agricultural workers, fall outside the official union structure; they therefore do not enjoy union representation and usually are unable to exercise fully their labour rights. In the agricultural sector, the US Department of State estimates that some 70% of workers are unregistered. However, agricultural trade unions are very much

[163] The Cotton Sector in China: UNEP Country Projects – Round II – A Synthesis Report, UNEP-ETB, 2002
[164] SASA Final Report on Social Standards and Social Auditing Methodologies, ISEAL Alliance, London, 2004

in existence in Brazil. Rural union organisations federate to a national coordinating body, the Confederacão Nacional dos Trabalhadores na Agricultura (CONTAG), which is affiliated to the central labour union, the Central Unica dos Trabalhadores (CUT). CONTAG is of particular interest, as it is a pioneer trade union in providing representation for both agricultural employees and small farmers.

5 Social impacts in cotton cultivation in the context of economic development

"Despite the serious social and environmental problems that have accompanied the expansion of cotton cultivation, there is little doubt that already low incomes would be far lower, and poverty higher, without cotton."[165]

The citation above – which emanates from an independent and frequently outspoken civil society organisation – captures much of the ambivalence of the literature on 'social impacts' of cotton cultivation.

The review of some 168 sources cited here suggests that there are significant negative 'social impacts' associated with cotton cultivation. It is noted that these are increasingly acknowledged as pertinent to the broader debate on the sustainability of the sector, not least due to increasing interest among a broad swathe of consumers in the provenance of the goods they purchase.

It is arguable that research in the sector has tended to focus on 'production' – technology and technique. Moreover, and logically enough, traditional extension and research methodologies have located the 'human interface' of production in the figure of the farmer. Yet the farmer, commonly the male head of household in many production systems, is not the only individual implicated in cultivation, and may espouse interests which are different, or even in tension with, other people – family, community or workforce – involved in growing cotton.

This study suggests that a broader frame of reference is required in order to understand both the positive and negative impacts of cotton production. How, for instance, can it be reliably asserted that cotton is a major creator of employment in some of the world's regions where employment is most needed, if there are no consistent figures relating to the workforce employed in cotton cultivation?

Equally, though, cotton is for many millions of people in some of the world's poorest countries a vital – and unique – link to the global economy. Perhaps the key fact emphasised in the literature studied here is that the vast majority of people whose livelihoods depend on cotton cultivation are located in developing and emerging economies, working on small, predominantly family-based farms.

Given that many of the negative 'social impacts' identified in the research studied here are closely linked to the circumstances of rural poverty, few – if not all – studies question that revenues derived from cotton production can be part of a dynamic of economic development which can ameliorate the circumstances of poverty which give rise to – and perpetuate – the social impacts identified in this study.

To this end, it will be useful for SEEP to take cognisance of the "many indirect effects [which] can be observed in areas where cotton production has been successful for several decades [the example is from West Africa]: more schools, more dispensaries, better water supply, more retail stores, more radio sets and motorcycles… Unfortunately, harmonized

[165] Cultivating Poverty, Oxfam Briefing Note 30, Kevin Watkins, Oxfam International, 2002

and repeated multi-local studies are still lacking to properly assess these positive indirect impacts."[166]

That is, while the exclusive focus of the SEEP mandate on cultivation at farm-level is understood, and apt, no discussion of the economics of the cotton farm can be entirely divorced from the role of primary producers within the value chain to which they contribute, and the extent to which producers and workers can capture the value of their production. "The fate of cotton production is thus tightly connected to the organization of its processing, which is itself related to the processing technology. The potential contribution of cotton production to economic growth and poverty alleviation largely depends on the organization implemented for industrial processing." (op. cit.)

Hence, the fundamental issue raised by this summary of social research materials is that the positive impacts of cotton production can and should be the *answer to* many of the negative impacts with which it is associated. However, considerable further work needs to be undertaken to ascertain – and realise – the circumstances under which all people involved may effectively benefit from their participation in cotton-growing.

The rule of law is the prime yardstick by which to measure acceptable labour practices. It is widely observed that the majority of 'labour rights impacts' categorised here emanate from the non-application or ineffective enforcement of wholly adequate legislation (exceptions have been noted above). It is commonly not therefore a question of imposing 'external' norms, and thus infringing the sovereignty of the state's legal machinery, but rather of clearly demonstrating and communicating compliance with existing regulation. Here, SEEP – as a sectoral expert body – and the ICAC – as an advisor to governments – may have a particularly insightful role to play in recognising and addressing the social impacts of cotton cultivation worldwide.

[166] Organization in agro-processing, economic growth and poverty alleviation in the case of traditional tropical export commodities : The case of cotton in Western Africa in: Case Studies Of Agri-Processing And Contract Agriculture In Africa, Denis Sautier, Hester Vermeulen, Michel Fok, Estelle Biénabe, Rimisp-Latin American Center for Rural Development, November, 2006

Annex 1: Consultees

The following individuals were contacted. Not all individuals responded.

Consultation with these individuals in no way implies the endorsement or agreement of any of these individuals, or the institutions they represent, with the findings of the literature review.

International actors:

- ISSCRI Project (Integrating Social Science Into Cotton Reform): Dr Michel Fok
- ICAC secretariat: Dr Rafiq Chaudhry, Terry Townsend
- International Labour Organisation (ILO): Ann Herbert (agriculture specialist), Peter Hurst (IPEC) and staff in ILO offices in focus countries
- FAO: Dr Paola Termine (Rural Employment Officer: Gender, Equity and Rural Employment Division), Dr Francesca Mancini
- International Federation of Agricultural Producers (IFAP): Norah Ourabah
- International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF): Sue Longley (Agricultural Coordinator)
- International Labor Rights Fund: Bama Athreya (Executive Director)
- Better Cotton Initiative: Lise Melvin (Initiative Manager)
- Fair Labor Association (US): Richa Mittal (South Asia Regional Coordinator)
- Ethical Trading Initiative (UK): Dan Rees (Director)
- IKEA Foundation (Sweden): Marianne Barner
- Oxfam GB: David Bright (Markets Advisor)

National actors:

Burkina Faso

- UNPCB: Athanase Yara (Agricultural Engineer, National Union of Cotton Producers of Burkina Faso)
- Institut de l'Environnement et de Recherche Agricoles (INERA – Programme Coton): Aurokiatou Traoré
- ILO Burkina Faso: Makan Traoré (labour inspectorate)
- Helvetas Burkina Faso: Lazare Yombi (Chargé sous regional – volet technique)

Brazil

- Ministerio do Trabalho e Emprego: Marco Antonio Gurtler (assessoria internacional)
- ILO Brazil: Maria Beatriz Cunha (official de programacão)
- Instituto Algodão Social (IAS): Felix Balaniuc (Director)
- Dr Sebastiao Barbosa, cotton consultant
- Dr. Eleusio Curvelo Freire, cotton consultant

China

- University of Tianjin: Ms Chunli Guo

Greece

- Aristotle University, Thessaloniki: Prof. Konstadinos Mattas

India

- ILO Delhi: Sherin Khan (Senior Specialist on Child Labour)
- International Resources for Fairer Trade: Arun Raste (Manager), Supriya Suman (Ethical Business Programme)
- MV Foundation: J Bhasker (Assistant Coordinator)

Pakistan

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- Sustainable Development Policy Institute (SDPI): Karin Siegmann

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- ILO SRO Beirut: Khawla Mattar (Senior Specialist, Fundamental Principles and Rights at Work)
- Centre for Agricultural Policy: Mr Haitham Al Ashkar (Deputy Director)

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USA

- National Cotton Council: Dr Bill Norman
- Cotton Inc: Dr Patricia O'Leary

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- ILO Tashkent: Ms Svetlana Rakhimova

Annex 2: Overview of ILO core conventions and other key ILO conventions for agriculture sector

Freedom of association

Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87)

This fundamental convention sets forth the right for workers and employers to establish and join organizations of their own choosing without previous authorization. Workers' and employers' organizations shall organize freely and not be liable to be dissolved or suspended by administrative authority, and they shall have the right to establish and join federations and confederations, which may in turn affiliate with international organizations of workers and employers.

Right to Organize and Collective Bargaining Convention, 1949 (No. 98)

This fundamental convention provides that measures appropriate to national conditions shall be taken, where necessary, to encourage and promote the full development and utilization of machinery for voluntary negotiation between employers or employers' organizations and workers' organizations, with a view to the regulation of terms and conditions of employment by means of collective agreements.

Forced labour

Forced Labour Convention, 1930 (No. 29)

This fundamental convention prohibits all forms of forced or compulsory labour, which is defined as 'all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily'. Exceptions are provided for work required by compulsory military service, normal civic obligations, as a consequence of a conviction in a court of law (provided that the work or service in question is carried out under the supervision and control of a public authority and that the person carrying it out is not hired to or placed at the disposal of private individuals, companies or associations), in cases of emergency, and for minor communal services performed by the members of a community in the direct interest of the community. The convention also requires that the illegal extraction of forced or compulsory labour be punishable as a penal offence, and that ratifying states ensure that the relevant penalties imposed by law are adequate and strictly enforced.

Abolition of Forced Labour Convention, 1957 (No. 105)

This fundamental convention prohibits forced or compulsory labour as a means of political coercion or education or as a punishment for holding or expressing political views or views ideologically opposed to the established political, social or economic system; as a method of mobilizing and using labour for purposes of economic development; as a means of labour discipline; as a punishment for having participated in strikes; and as a means of racial, social, national or religious discrimination. Additionally, forced or compulsory labour is considered as one of the worst forms of child labour in the Worst Forms of Child Labour Convention,

1999 (No. 182).

Equality

Equal Remuneration Convention, 1951 (No. 100)

This fundamental convention requires ratifying countries to ensure the application to all workers of the principle of equal remuneration for men and women workers for work of equal value. The term "remuneration" is broadly defined to include the ordinary, basic or minimum wage or salary and any additional emoluments payable directly or indirectly, whether in cash or in kind, by the employer to the worker and arising out of the worker's employment.

Discrimination (Employment and Occupation) Convention, 1958 (No. 111)

This fundamental convention defines discrimination as any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation. It requires ratifying states to declare and pursue a national policy designed to promote, by methods appropriate to national conditions and practice, equality of opportunity and treatment in respect of employment and occupation, with a view to eliminating any discrimination in these fields. This includes discrimination in relation to access to vocational training, access to employment and to particular occupations, and terms and conditions of employment.

Child labour

Minimum Age Convention, 1973 (No. 138)

This fundamental convention sets the general minimum age for admission to employment or work at 15 years (13 for 'light work') and the minimum age for hazardous work at 18 (16 under certain strict conditions). It provides for the possibility of initially setting the general minimum age at 14 (12 for 'light work') where the economy and educational facilities are insufficiently developed.

Worst Forms of Child Labour Convention, 1999 (No. 182)

This fundamental convention defines as a 'child' a person under 18 years of age. It requires ratifying states to eliminate the worst forms of child labour, including all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict; child prostitution and pornography; using children for illicit activities, in particular for the production and trafficking of drugs; and work which is likely to harm the health, safety or morals of children. It should be noted that the activities which constitute such 'hazardous work' for under-18s are left to member governments to determine and enforce (this is a requirement of the convention). As noted later, certain tasks in the cotton cultivation cycle – notably pesticide application – are commonly defined as 'hazardous work' in national legislation, and hence are not apt for under-18s to undertake.

The convention requires ratifying states to provide the necessary and appropriate direct assistance for the removal of children from the worst forms of child labour and for their rehabilitation and social integration. It also requires states to ensure access to free basic education and, wherever possible and appropriate, vocational training for children removed from the worst forms of child labour.

Other ILO conventions applicable to agriculture

In addition to the core conventions cited above, there are some conventions which relate only to agricultural work.

Plantations Convention, 1958 (No.110)

This convention covers the recruitment and engagement of migrant workers and affords protection to plantation workers in respect of employment contracts, wages, working time, medical care, maternity protection, employment accident compensation, freedom of association, labour inspection, and housing.

Rural Workers' Organisations Convention, 1975 (No.141)

All categories of rural workers, whether they are wage earners or self-employed, shall have the right to establish and, subject only to the rules of the organization concerned, to join organizations, of their own choosing without previous authorization. The principles of freedom of association shall be fully respected; rural workers' organizations shall be independent and voluntary in character and shall remain free from all interference, coercion or repression. National policy shall facilitate the establishment and growth, on a voluntary basis, of strong and independent organizations of rural workers as an effective means of ensuring the participation of these workers in economic and social development.

Safety and Health in Agriculture Convention, 2001 (No. 184)

This convention has the objective of preventing accidents and injury to health arising out of, linked with, or occurring in the course of agricultural work. To this end, the Convention includes measures relating to machinery safety and ergonomics, handling and transport of materials, sound management of chemicals, animal handling, protection against biological risks, and welfare and accommodation facilities.