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WEAKEST LINK IN THE TEXTILE CHAIN: PAKISTANI COTTON PICKERS' BITTER HARVEST

Karin Astrid Siegmann and Nazima Shaheen*

A million tonnes of cotton are hand-picked by women and girls every year in Pakistan's 'cotton belt'. Despite their evident contribution to the economy, the pickers' fates remain invisible in the daily headlines on cotton production as well as in academic research. The present article tries to address this blind spot while focussing on the working conditions of Pakistani cotton pickers. It investigates the determinants of their work, wages and occupational safety and health, and questions whether the link with the global cotton chain benefits labourers in Pakistan's cotton fields.

I. PULLING THE COTTON ROPE: ENABLING EMPOWERMENT?

The textile chain from seed cotton to cotton-based textile and clothing (T&C) manufactures has special importance for developing countries. Most of the cotton is produced and manufactured in the global South, with China, India, and Pakistan alone being responsible for almost half of the global cotton production in 2004. Around one billion people, mostly in developing countries, are either directly or indirectly involved in the production and marketing of cotton (Townsend, 2004, quoted in Orden, *et al.*, 2006).

The global market for cotton and cotton-based products has been characterised by interventions biased against southern producers, such as the prevalence of huge subsidies for cotton cultivation in the USA and other growing countries (Baffes, 2005), and quantitative export restrictions faced by T&C manufacturers in developing countries. In the global power balance tilted towards industrialised countries, however, pulling the cotton rope has given southern countries some negotiating power. When the World Trade Organisation (WTO) came into being in 1995, the developing countries were able to achieve an agreement on the phase-out of quotas in T&C that had hampered cotton manufacturers' exports, the so-called Agreement on Textiles and Clothing (ATC). Brazil successfully challenged the world's largest economy regarding the trade-distorting support payments for US-American cotton growers in the WTO. The WTO panel decided in June 2004 that the giant USA must stop subsidising their farmers at the expense of growers in poor countries such as the dwarf economies of Benin, Burkina Faso, Chad and Mali.

Does cotton equally empower those who constitute the first link in the textile chain that ties the developing world to the global North? A million tonnes of cotton are hand-picked by women and girls every year in the cotton-growing belt of Pakistan's Punjab and Sindh provinces. Directly, it accounts for 9 per cent of the value added in agriculture and contributes about 2 per cent to the GDP. Through its use in the T&C industry, it is indirectly responsible for another one-tenth of the GDP and about two-thirds of the total merchandise exports (Finance Division, 2006). Despite such evident contribution to the national economy, the pickers' fates remain invisible in the daily headlines on cotton production and prices. Hardly any research has devoted attention to those whose work lays the foundation of the country's export success.¹

* The authors are with the Institute of Social Studies, The Hague and Sustainable Development Policy Institute, Islamabad, respectively.

This article tries to address this blind spot by focusing on the working conditions of Pakistani cotton pickers. It investigates the social organisation of their work, wages and occupational safety and health, and asks whether the link to the global cotton chain benefits labourers in Pakistan's cotton fields.

II. POVERTY DESPITE PRODUCTIVITY IN PAKISTAN'S COTTON BELT

Global clothing exports have almost tripled between 1990 and 2004. This boom in the demand for textiles and clothing, production and trade was catalysed, amongst others, by the export-oriented development path that many countries embarked upon since the 1980s. Trade liberalisation and faster fashion cycles in northern countries also caused a steep rise in the demand for cotton and cotton products from developing countries, including Pakistan.

Cotton is grown on more than 3 million hectares (ha) in Pakistan (Agricultural Census Organisation, 2003), that is, 15 per cent of the total cultivated area. Together, 16 districts in—mainly southern—Punjab account for about 80 per cent of the national area under cotton, with most of the remainder being cultivated in Sindh (Orden, *et al.*, 2006). Annual production surpassed 2.4 million tonnes in 2004-05, Pakistan's highest ever cotton production. It made the country the fourth largest producer of cotton worldwide (Finance Division, 2006).

Cotton is produced by 1.6 million farmers, that is, about one-tenth of all households in the country. Of these, more than two-thirds own some or all of their land, whereas 21 per cent are sharecroppers with no land ownership. Earnings from cotton sales account for 39 per cent and 45 per cent of the household total net income of landowners and sharecroppers, respectively (Federal Bureau of Statistics, 2003, quoted in Orden *et al.*, 2006).

Among cotton farmers, 41 per cent of landowners and 66 per cent of sharecroppers are in the lowest two quintiles of distribution of per capita consumption expenditure. Access to food in the cotton-growing districts of Pakistan is low to—mostly—extremely low (SDPI and WFP, 2005).

Orden, *et al.* (2006) identify close ties between global cotton markets and poverty in Pakistan's cotton belt. The direct effects of lower cotton prices in Pakistan resulting from the decline in world prices in the second half of the 1990s contributed to the rising levels of poverty among cotton-producing households. A simulated increase of low cotton prices in 2001-02 back towards the higher levels of earlier years moves a substantial number of cotton farmers out of poverty. At the national level, a 20 per cent increase in cotton prices causes poverty among all cotton-producing households to fall from 40 per cent to 28 per cent. The study estimates that this reduces the population suffering from poverty in Pakistan by almost two million people, the multiplier effects not included.

Women of rural Pakistan, including those in the cotton belt, play a major role in agricultural production, livestock raising and cottage industries. According to the Labour Force Survey 2005-06, about one-third of all agricultural work in rural Pakistan is undertaken by women. A majority of all women, that is, 58 per cent, however, work as unpaid family helpers (Federal Bureau of Statistics, 2006b). They participate in operations related to crop production such as sowing, transplanting, weeding and harvesting, as well as in post-harvest operations such as threshing, winnowing, drying, grinding, husking and storage. They carry out these tasks in addition to their reproductive² chores of cooking, taking care of children, the elderly and the disabled, fetching water and fuel, cleaning and maintaining the house as well as carrying out some of its construction (Habib, 1997). The dramatic growth rates in cotton production have generated a high demand for female labour as picking cotton is an almost exclusively female task (FAO, undated).

Despite their significant involvement in the rural economy, women hardly have any ownership or control over resources and they are expected to surrender their rights in favour of their brothers or husbands (Habib, 1997). Women work and produce on land that they commonly do not own (ADB, 2000). Due to the societal perception of men as being the households' main 'breadwinners' and women as supplementary income-earners, the latter are prevented from searching for paid employment and, consequently, have limited access to and control over financial resources. The harvest is sold by and through men, and men control the income.

Patriarchal gender norms reinforce the economic subordination. Girls are taught not to value themselves when it comes to equality with males in the family. This is expressed in terms of discrimination in the distribution of food of the same quality between female and male household members as well as in the lack of decision-making power regarding education, health, marriage, family planning, etc. (Habib, 1997). Significant gender gaps in education and health indicators are the result. For instance, in rural Punjab and Sindh, the female adult literacy is 35 per cent and 18 per cent, on an average, as compared to 59 and 56 per cent, respectively, for men in both provinces (Federal Bureau of Statistics, 2006a). The cotton-growing districts of Punjab are at the bottom of the provincial ranking of female literacy (SDPI and WFP, 2004). This discrimination is legitimised by the assumption that investment in girls' education is 'spilled' as they will leave their parents' household and are unlikely to enter the paid labour market.

III. INVESTIGATING COTTON BUDS AND VALUE CHAINS

Qualitative data were gathered through key informant interviews with cotton growers, brokers, medical professionals, and pesticide companies' representatives as well as through focus group discussions (FGDs) with female cotton pickers in southern Punjab. They were complemented by a quantitative survey of cotton growers in the same area. Study sites were selected by intensity sampling, that is, the selection of sites which display variables of interest with high intensity (Patton, 1990). Empirical research was, therefore, conducted in the districts of Multan, Bahawalpur and Rajanpur as some of the most productive cotton-growing districts.

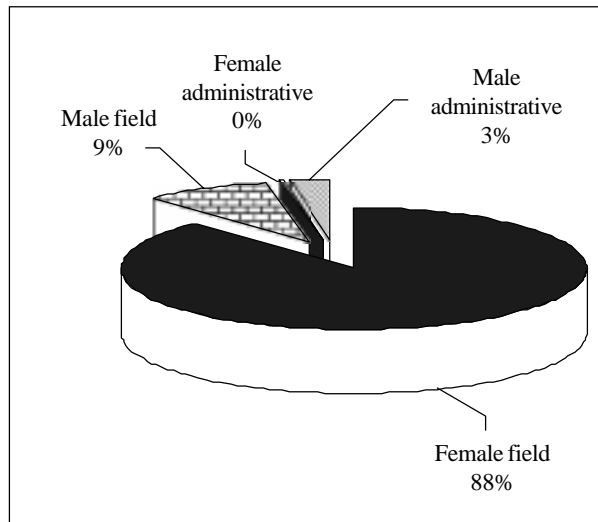
Table 1
Average Employment and Cotton Sales in the Sample by Land Size Categories, 2004

	<i>Employment</i>	<i>Sales (Rs.)³</i>
Medium	26	99,000
N	8	7
Large	118	1,735,712
N	56	53

Note: Small land size ranges from 0 to below 2 acres, medium from 2-10 acres, and large land size is beyond 10 acres.

Most growers owned the land that they cultivate (86 per cent, Table 1). Their land size ranged from 3 to 400 acres in 2004. However, the majority of farmers cultivated large plots, that is, above 10 acres. As compared to the overall distribution of cultivated land in Pakistan's cotton cultivation, the sample is biased towards larger farm sizes. Obviously, yield, employment and sales differed considerably depending on land size.⁴ While medium size farmers employed an average of 26 workers in 2004-05, the corresponding figure for large farmers was beyond a hundred labourers. The majority of farm workers (88 per cent) were female cotton pickers (Figure 1).

Figure 1
Mean Farm Employment by Occupation and Sex, 2004-05



IV. BITTER HARVEST: THE LABOUR MARKET FOR COTTON PICKING

Cotton picking is a seasonal activity. In three to five waves from August up to February (Agricultural Prices Commission, 2004), about two million cotton pickers were estimated to harvest the fuel for Pakistan's export engine. Most of the pickers are women and girls. This is despite the fact that the venturing of women and girls outside the homestead where they might mingle with other men is commonly seen as a threat to family honour (ADB, 2000).⁵ It is yet another indicator of the extent of poverty faced by communities in the cotton belt outlined above. Sometimes, children brought to the field help in picking and thus raise the pickers' meagre earnings (FGD Khaddal Pull, 2005; Hussain, 1999). Sprayers and tractor drivers as also other agricultural labourers, on the other hand, are commonly men. Figure 1 indicates that in the sample studied, seasonal cotton picking represents by far the largest share of employment in cotton cultivation, with more than 10 times of the male field workers.

The reasons for the strict gender division of labour may include the seasonal character of the work and its low pay, even if compared to other seasonal agricultural work such as wheat harvesting (Ali, 2004). Overall, cotton pickers' earnings are lower than those of male agricultural workers (Sheikh, 2004). This gender-based differential is legitimised by the societal perception of men as the households' main 'breadwinners' and women as 'supplementary' income-earners.

Even academic research employs the rhetoric of 'supplementary' female income (Orden, *et al.*, 2006). Apart from that, cotton harvesting is arduous work, and men who face more choices in the labour market, opt for alternative income sources. The cotton pickers' lack of education and skills aggravates the socio-cultural constraints for labour market participation that women face. While many men in the cotton-growing belt migrate for industrial or construction employment to urban areas, women do not have other opportunities for income generation (KII Ali, 2005; KII Shuaib, 2005; Hussain, 1999).

Picking is commonly done in groups of five to 25 workers (KII Ali, 2005; and FGDs Azizabad, Kooni, Rajanpur 1, 2005). They are organised by contractors, which often select workers who are connected to him or her on the basis of kin or acquaintance (KII Ali, 2005).

Table 2
**Pearson Correlations of (Changes in) Harvest, Yield, Land Size and Cash Wage with
 (Changes in) Female Field Labour, 2004-05 and 2005-06**

	2004-05	2005-06	Changes from 2004-05 to 2005-06
Harvest (<i>maund</i>)	0.17 (0.18)	0.29 (0.03)**	-0.28 (0.03)**
Yield (<i>maund</i> per acre)	0.04 (0.75)	0.26 (0.04)**	-0.31 (0.01)**
Land size cultivated (acres)	0.21 (0.09)*	0.18 (0.16)	0.18 (0.16)
Changes in cash wage (ordinal)	–	–	-0.09 (0.49)

Note: p-values in brackets; * Correlation statistically significant at 90 per cent level; ** Correlation statistically significant at 95 per cent level.

Not surprisingly, the level of field employment is positively associated with the total harvest, the productivity and the size of the cultivated land, whereas the observed decreases in yield and harvest changes between 2004 and 2005 are negatively correlated with employment changes (Table 2). This can be explained by the greater effort required to harvest on an unproductive field.

Female cotton pickers are paid by the weight of their harvest, making them piece rate workers. In a piece rate system, wages are paid per unit of output rather than per unit of time, as in the case of wage labourers. For the growers, it has the advantage of reducing the monitoring requirements of the labourers. Payment was traditionally in kind traditionally, namely 1/16th of the harvest (Orden, *et al.*, 2006). In recent years, the majority of growers have moved to payment in cash (KII Shuaib, 2005; FGD Kooni, 2005; Hussain, 1999). As the cotton share was subsequently sold in the market, the move from in-kind to cash payments implies a de-linking of picking rates from cotton prices.

A common mode of cash payment is the *parchi* (receipt) system. It implies the provision of payment slips for the daily harvest that can be encashed at the end of the season or exchanged against food items within a particular area (Hussain, 1999). While this institution eases the grower's cash constraints and requires less monitoring of financial transactions, it shifts the problem of daily cash requirements to the pickers, who have even less access to financial resources. In addition, the encashment at the season's end is commonly done by the male family members, reducing the women workers' access to and control over financial resources.

One *maund*⁶ appears to be what a fast picker can harvest in a day (KII Shuaib, 2005; FGDs Azizabad, Rajanpur 1, 2005; Hussain, 1999). Hussain (1999) found Rs. 40 per *maund* to be a typical picking rate in southern Punjab in 1996-97.⁷ The Agricultural Prices Commission of Pakistan (2004) estimated an average picking rate of Rs. 85 and Rs. 80 in Punjab and Sindh for 2004-05, respectively. During the present survey, Rs. 50-80 were reported to be common rates during the 2005-06 season (KII Shuaib, 2005; FGDs Azizabad, Khaddal-Pull, Rajanpur 1, 2005).⁸

Picking rates are reported to be negatively related to the field's productivity as a picker would be able to gather one *maund* of raw material in a field full of cotton relatively quickly as compared to, for example, during the third pick (KII Ali, 2005, KII Shuaib, 2005). Orden, *et al.* (2006), therefore, note higher rates during the initial and end periods of the cotton season. Pickers stress, though, that it is their employers who determine the rates (FGD Khaddal-Pull, 2005). They associate their weaker bargaining power with their gender (FGD Rajanpur 1, 2005).

Women's lack of alternative employment opportunities in the rural economy leads to an over-supply of female labour available for the cotton harvest. Combined with their families'

poverty, it significantly reduces their bargaining power in negotiations with the growers (FGD Azizabad, 2005).

The labourers' lack of bargaining power is also reflected in the fact that often the harvest's weight is reduced by those in charge of weighing (FGD Rajanpur 1, 2005). Sometimes, the full due earnings are withheld by the growers (FGD Khaddal-Pull, 2005). Most of the cotton pickers are unable to check whether their harvest has been weighed correctly. Again, gender-based differences in education have a role to play (FGD Rajanpur 1, 2005).

Working collectively does not strengthen harvesters bargaining power, either. Unions or other forms of workers' organisations have not been formed. According to Hussain (1999), caste divisions, which cut across religious affiliations, play a preventive role in this respect.

Saif and Gamal Eldin (1990), quoted in Sheikh (2004) relate cotton contamination with threads of polypropylene bags, shreds of cloth, pieces of rope twine, paper and other matter to the de-motivating effects of the gender-based earnings differential. It is more likely, though, that increasing the weight of the harvest with other materials may be a combined result of the payment by weight, and the low piece rates. Pickers may try to increase the weight of their pick by adding foreign materials.⁹ FGDs' participants were aware of the fact that a cleaner harvest may be in the interest of the farmer who can sell at a higher rate but not necessarily in their own interest. Also, their effort to harvest a maximum of the seed cotton during the time available to them may draw their attention from avoiding contamination of the produce.

The piece rate system of payment for harvesting translates into meagre daily earnings. Pickers reporting a rate of Rs. 80 per *maund* and four to five hours in the field would report daily earnings of Rs. 40-60 (FGD Rajanpur 1, 2005), others report their daily labour under the scorching sun to result in as little as Rs. 10-25 (FGDs Azizabad, Kooni, 2005).¹⁰ The inadequateness of earnings is illustrated by the fact that women cotton pickers were highly reluctant to talk to the researchers both during the present study and in Hussain's (1999) study, reflecting the fact that taking time out to talk to the research team meant losing out on precious earnings.

Hussain (1999) finds that the working hours depend on the harvest's stage. During the season's peak, 95 per cent of the women she interviewed picked cotton from 6 am until 12 noon, whereas during the season's beginning, schedules from 8-9 am to 5-6 pm were most common. The working hours were significantly reduced to two to four morning hours during the picking season's end, implying a very low daily financial return. The FGDs revealed much longer working hours during the peak of the 2005-06 season. Pickers reported that they started picking around 5 to 6 am and continued to work until 4 to 5 pm in the afternoon (FGDs Azizabad, Khaddal-Pull, 2005). The working hours in the field also depend on the number of dependants in the household as well as on the number of women available for reproductive work, such as cooking and childcare. The more the number of female household members present, the earlier the pickers can join the harvesting group (FGD Azizabad, 2005).

They would break for lunch and some rest during the hottest hours of the day (FGD Azizabad, 2005). Reaching the field may also take a lot of time. While Orden, *et al.* (2006) report farmers transporting pickers from the neighbouring villages to their fields due to labour shortages during the peak season, the participants of an FGD in Rajanpur reported a walk of up to four hours to the fields (FGD Rajanpur 1, 2005). Hussain (1999) notes that, generally, cotton fields are located far from the labourers' homes, thereby creating problems for their food and water intake. Apart from the lower transaction costs, pickers perceive harvesting close to their homes as being more advantageous as it allows them to be closer to their children (FGD Azizabad, 2005).

Apart from poor remuneration for hard work, cotton pickers are also exposed to serious health hazards (Hussain, 1999; Habib, 1997). The most severe hazards stem from their exposure to poisonous pesticides. Cotton is the crop in Pakistan on which most pesticides are applied. It is estimated that 80 per cent of the total pesticides consumed in Pakistan are used for the protection of the cotton crop during its growing period from July to October (Mahmood and Jamil, 2005).

The pesticide treadmill, that is, the necessity to use more and more pesticides due to resistances developed in pests (Banuri, 1999) as well as the fact that pesticide prices have dropped due to import liberalisation in 1995 (Zia, 1998, quoted in Hussain, 1999) have raised consumption exponentially. During the same period, however, yields have not risen significantly, thereby raising questions regarding the effectiveness of increased pesticide consumption (Ahmad and Poswal, 2000, and Poswal and Williamson, 1998, both quoted in Khan, *et al.*, 2002).

During their work in the fields, cotton pickers are exposed to residuals of these sprays. The cuts and skin rashes that pickers are vulnerable to further expose them to the hazards of pesticides (Habib, 1997). Picking cotton is common during pregnancy and breastfeeding, which poses additional risks to the women workers and their children's health (Hussain, 1999; Habib, 1997). Labourers and their household members consume water that is contaminated with pesticides. Besides, pesticides enter the food chain via the exposure of the soil (KII Arshad, 2005; Jabbar, *et al.*, 1993 and Allsopp, *et al.*, 1995, both quoted in Hussain, 1999), of their livestock, and as remnants in cotton seeds, which are pressed to produce edible oil. Cotton stalks are often used as fuelwood in the cotton-growing areas (Hussain, 1999; Habib, 1997). Residuals are thus inhaled by the workers and their communities. While in some instances, the spray men are given some, though inadequate, information on the health hazards of pesticide exposure and are sometimes provided with protective gear, Hussain (1999) found no instance wherein cotton pickers were given advice on how to prevent exposure to the poisoning effects of pesticides.

The result is chronic pesticide poisoning, with its symptoms ranging from mild headache via skin allergy to cancer of internal organs (Mahmood and Jamil, 2005; Colborn, Myers and Dumanoski, 1996, quoted in Hussain, 1999). One of the few studies on the level of poisoning conducted in Pakistan showed chronic pesticide poisoning among cotton pickers, especially during the post-harvest period. After the season, blood samples of only 10 per cent of the female pickers were found to be in the normal range whereas this level was hazardous among 42 per cent of the pickers (Tahir, *et al.*, 2001, quoted in Khan, *et al.*, 2002).¹¹

The pickers are trapped in a cycle of poverty that is fuelled by the poor pay they receive and the health hazards that they are exposed to. A labourer from Rajanpur district summarised this vicious cycle as follows:

“We do this labour, we go through all roughness, get this Rs. 50 or 60 and take tea and tablets when back home. This spray and dust, pollution all covers our chest. In the evening, we have a headache, and to cure that, we get tablets for Rs. 3-4. Then we buy sugar for Rs. 35 per kg in Miranpur. We have children for whom we need ghee [clarified butter, KAS] and with all that we hardly meet our ends. On the next morning, we again go through the same process. (...)” (FGD Rajanpur 1, 2005).

The low piece rates they earn work as a disincentive to use equipment that would protect them against the harmful effects of the chemicals, as the use of protective gear would slow down their work speed.

With their low earnings, they cannot afford to eat a balanced diet, which in return, weakens their immune system and makes them vulnerable to the hazardous impact of pesticides (Hussain,

1999). Once ill, they do not have the means to get proper treatment (Habib, 1997). Labourers describe this vicious cycle in the following manner:

“ (...) Even if we put cloth in our mouth, we fall ill, and then nobody gets us treatment. If we have an allergy in the face because we have been touching our face with our hands, nobody takes us for treatment. We can't afford it as we are poor.” (FGD Azizabad, 2005).

Habib (1997, p. 5) sees a reflection of the women's internalisation of their low status in this situation, as expressed below:

“They cannot 'afford the luxury of medicines' when there are so many other needs to be attended to in the family. The needs, problems and interests of the women come last.”

Khan, *et al.* (2002) quote sources that estimate economic losses worth Rs. 765 million for health treatment and work losses accruing to this lowest income strata of the economy.

V. THE GENDERED ECONOMICS OF COTTON COMPETITIVENESS

Cotton pickers stand at the beginning of a textile chain that links livelihoods in rural Punjab and Sindh with the world market. Does this global commodity chain enable their economic empowerment? The present analysis of incentives and institutions of the labour market for cotton harvesting has not resulted in a positive answer.

Women's economic empowerment can be defined as access to and control over productive resources. Section II has indicated that women in the cotton belt are socially and economically even more disadvantaged in an environment that is already characterised by poverty. Patriarchal gender norms prescribe that they do not control income even while contributing as unpaid workers. They commonly neither legally own nor control land as the most important productive resource in rural areas. In comparison with the male household members, they face discrimination in access to education. The question is whether the opportunity for paid employment as labourers in cotton harvesting strengthens their weak economic status.

Employment in cotton cultivation provides employment for a large number of women in Pakistan's cotton belt where economic opportunities are limited by gender norms that restrict the sectors and occupations considered appropriate for female employment. Consequently, as compared to their status as unpaid family helpers in agriculture, they gain access to cash income while working in the cotton fields. Their work here is paid, yet precarious. The triple informalisation as seasonal, contract, and piece rate workers is associated with low social and economic status. This implies that it is the stick of poverty rather than the carrot of gainful employment, which persuades women to join the harvesting labour force. Research on sub-contracted employment in Pakistan's manufacturing sector has shown that paid employment does not necessarily empower women workers economically, especially, if their labour relations are informalised (Khattak and Sayeed, 2000). The lack of economic empowerment of informal workers is, for instance, expressed in the elastic reaction of female cotton pickers' recruitment in response to output changes: while female field employment declined by 8 percentage points between 2004-05 and 2005-06 in reaction to the lower yields, male labourers were hardly affected. This implies that cotton pickers' employment remains at the mercy of the growers, the climate, and an anonymous market.

As compared to other agricultural workers, the wages earned by cotton pickers are low. Their precarious status as well as their poverty and poor bargaining power contribute to suppress their earnings. These aspects are not directly related to their gender but indirectly reflect the patriarchal social norms. For example, the segregation of female workers in this activity is related to a 'male breadwinner bias' (Elson and Çađatay, 2000), thereby lowering female aspirations for more secure and rewarding types of employment. Perceptions regarding the

appropriateness of mobility and work for female household members restrict their options in the labour market and lead to an over-supply of labour for this occupation, which has negative repercussions for their bargaining power. While the overall education levels are low in the cotton-cultivating areas, the significant gender gap in literacy makes the situation even worse for women and girls. This is another factor that diminishes their bargaining power, as illustrated, for example, by their lack of ability to check the correct weighing of their harvest. The close association of reproductive obligations and market work that is characteristic for women acts as a constraint on their availability in the field. Their working hours in the harvest and thus, their earning ability depends on the number of dependants and other females available for domestic work. Finally, these intertwined work schedules in the home and the field restrict the ability of the female pickers to organise and jointly work for improving their working conditions.

In rare instances, market forces can be on the side of the labourers. In the case of labour shortages that can occur especially during the harvesting peak and to those growers that face a limited spatial labour market, the picking rates may increase in the short-term to make sure that the raw material is harvested in time. However, the surplus availability of female labour illustrated above commonly prevents this situation.

The most significant occupational health hazard that cotton pickers face is their chronic exposure to pesticide residuals in their working and living environment. Poor educational levels reduce their awareness about the hazards that they are exposed to and thus limit the scope for simple measures of protection. Their poverty and the associated poor diet and health status increases their vulnerability towards greater health risks, prevents investment in protective measures and makes recovery from pesticide-related illness very costly. It is not just medication that the pickers cannot afford; it is first and foremost their opportunity cost in the form of the loss of daily earnings if they cannot come to the cotton field. Their bargaining power vis-à-vis their employer is too weak to allow them to negotiate for protective gear. Again, the close association between their reproductive and paid work exposes not only them but also their children whom they keep attending to while harvesting the raw material to serious health hazards.

Institutions of the labour market in cotton cultivation, that is, formal and informal rules governing labour market relations, contribute to the economic disempowerment of women workers. Their status as seasonal, contract, and piece rate labourers implies that the employers' contractual obligations vis-à-vis their harvesting workforce remain weak. The financial risks of a late harvest, low yields, illness and other unforeseen disturbances are borne by the pickers, who are not paid even if they do not carry the raw material to the growers' scale. Although the inverse association of picking rates with yield provides a modest insurance against the risk of an unremunerated increase in work effort, it does not cover the risk of a shorter employment period due to a poorer harvest. The *parchi* system is another arrangement that serves the cultivators' interest by helping to ease their cash constraints but reduces the labourers' access to and control over their earnings as well as the choice regarding where to spend them. While the pickers face—sometimes unjustified—sanctions in the form of deductions from their due earnings if the growers consider the quality of their harvest to be below standard, no positive incentives appear to trickle down to the female labour force in the cotton field (KII Ali, 2005). These institutions share a common factor in that they shift risks to the weakest link of the cotton chain in terms of poverty and bargaining power.

Theoretical assumptions of smoothly functioning markets wherein incentives are passed on between different economic actors to ensure efficiency do not seem to hold for the weakest link in the textile chain. Power differentials between the northern and southern cotton producers and manufacturers of T&C products are mirrored at the level of the national economy. The

substantial market power of yarn manufacturers, in particular, has helped them ensure low input costs and thus their competitiveness and economic gain (Siegmann, 2007b). Old hypotheses regarding women's economic marginalisation in the process of economic development come to mind. But while Boserup (1989) described a loss of employment opportunities as an *effect* of structural change in the economy, the picture that emerges here instead displays economic and export growth, in particular, that is *based* on the weak bargaining power and, consequently, the poor earnings of the most labour-intensive part of cotton and cotton-based T&C production. In an analysis of the growth performance of a cross-section of semi-industrialised Asian countries, Seguino (2000) makes a related point. According to her, the gender gap in wages, which is a persistent feature of labour markets across the world, has ensured higher growth rates in certain economies. The differential allows the prices of export goods to be lowered, thereby contributing to higher quantities of the exports demanded. It, thus, has the potential to increase the competitiveness of the respective firms and consequently enhance their growth.

VI. STRENGTHENING SUSTAINABILITY IN THE TEXTILE CHAIN

The previous sections have highlighted both the lack of economic empowerment and more so the prevalence of marginalisation of the cotton pickers, making them not only the first but also the weakest link in the global textile chain. It has been emphasised that the precarious types and poor conditions of their work are embedded in their social position, which is assigned by patriarchal gender norms. The emerging picture shows macroeconomic success that is parasitic on the poor bargaining power of women workers at the level of the cotton fields. As shown above, the outlined competitiveness on women's back is not sustainable, not in terms of agricultural workers' health and well-being, and probably not even in the mid-term as the sustained competitiveness of cheap cotton-based manufactures that compromise on quality.

The policies in Pakistan commonly ignore the role of workers as crucial economic stakeholders. This holds particularly true in the case of the female workforce. For example, women workers who represent one-third of the agricultural labour force are almost invisible in the National Agricultural Policy (Habib, 1997). Extension services are provided by male agents and thus hardly reach female agricultural workers. There is a need to change this situation, highlight women's employment conditions, and address their specific problems.

The discussion above has indicated some market-based steps that might benefit cotton pickers in terms of increased picking rates. Premia for low contaminated cotton would also need to reach the field level of the harvesting workforce in order to be effective. Already, a large number of stakeholders, from growers to ginners and various government bodies have started supporting such a move. The challenge, however, remains tackling the resistance of spinners, who so far prefer low input prices over higher revenues for improved quality of their produce.

The reduction of the pesticide load of cotton and cotton products may be marketed and may result in niche markets for pesticide-free cotton and cotton-based T&C manufactures. International experience shows that a substantial share of the input costs can be saved through a shift from chemical to organic forms of plant protection (Organic Consumers Association, no date). Such niche markets for fair trade or eco-labelled products, with the associated higher willingness to pay on the side of consumers, can translate into better working conditions for pickers as regards pesticide exposure and higher picking rates. Examples exist in the Pakistani context. Kings Apparel, a knitwear production company initiated an organic cotton project in January 2000 (Kings Apparel, 2005). National efforts to propagate integrated pest management have demonstrated the potential to achieve higher production efficiency, environmental and

health gains (Khan et al., 2005). The Trade Policy 2005-06 explicitly encourages the production and marketing of organic cotton (Finance Division, 2006).

At the international level, as argued by Orden, *et al.* (2006), a removal of subsidies for cotton cultivation in the North and the anticipated resultant rise in global cotton prices might be an important exogenous factor to be taken into account where the earnings of cotton growers are concerned. It implies a stronger stance in international negotiations for the removal of subsidies and trade barriers in the global textile chain. However, again the question of market power arises. While simulations assume elastic reactions to price incentives, the discussion above has shown that economic bargaining power is a crucial factor, which is commonly not modelled. A subsidy reduction at the international level and the resulting price increases for raw cotton may thus support but do not guarantee higher earnings for pickers.

As argued above, the market forces dominated by powerful players in Pakistan's cotton league may not constitute the most effective entry point for improvements in the working conditions of cotton pickers. The question marks raised regarding the role of purely economic incentives point to the need for a rights-based approach to strengthen the bargaining power of cotton pickers. Pakistan is a signatory to the ILO Conventions 100 and 111, which guarantee the elimination of discrimination in respect of employment and occupation. At the level of national labour legislation, the agricultural sector is not even covered by the Industrial Labour Ordinance 2001 (Ali, 2004).

An effective way of empowering women cotton pickers and thus improving their working conditions is by supporting organisations representing their interests and bargaining collectively with cotton growers. This would reflect the comparative success of cotton producers in the small West African countries. Their voice became audible in the WTO arena through the joint formulation of proposals to abolish subsidies for cotton cultivation.

Notes

1. Notable exceptions include Bari (2001), Hussain (1999) and Habib (1997).
2. "Reproductive work" refers to activities undertaken for the care and development of people, performed mostly by women under conditions of unpaid labour. "Productive activities", in contrast, refer to income-generating activities, generally linked to the market (Çađatay, 1998).
3. In 2004, one USD equalled Rs. 54.44.
4. The Pearson correlation of land size in 2004 with yield (*maunds* per acre) was 0.24 ($p=0.06$), with total employment was 0.23 ($p=0.07$), and with sales was 0.58 ($p=0.00$).
5. Hussain (1999), therefore, emphasises that women welcome the social interaction that inevitably goes with cotton harvesting despite the associated problems.
6. One *maund* equals 40 kg.
7. In 1996, one USD equalled Rs. 37.44.
8. In 2005, one USD equalled Rs. 62.12.
9. The more common strategy to increase the weight of the harvest appears to be to pick early in the morning, so that the dew adds some weight to the cotton (FGDs Kooni, Khaddal-Pull, 2005; KII Shuaib, 2005; Hussain, 1999).
10. The picking rates mentioned here were Rs. 50 and 60 per *maund* for Azizabad and Kooni, respectively, with a working day of 8-10 hours in the field.
11. Similar study results are quoted in Hussain (1999), Banuri (1999) and Habib (1997).

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