
The Price of Less Child Labour and Higher Wages

DO SEED COMPANIES IN INDIA ENABLE THEIR FARMERS PAYMENT OF LEGAL MINIMUM WAGES?

**Assessing the link between Farm Wages and Procurement Prices in Bt. Cottonseed
Production in Andhra Pradesh, India**



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SECTION I: INTRODUCTION

Background

The present note is an attempt to examine the recent trends in wages paid to labourers and procurement prices paid to farmers by seed companies in Bt (*Bacillus thuringiensis*) cottonseed production in the Indian state of Andhra Pradesh and to understand the link between them.

There is a steady increase of agricultural wages in many parts of India in recent years. The official data on agricultural wages collected by the Labour Bureau under the Ministry of Labour and Employment¹ indicates that in recent years there has been a significant increase in the agricultural wages in different states. Trends in agricultural wages from December 2007 to December 2011 indicate that, agricultural wages shot up by 128% in Andhra Pradesh, 108.7% in Karnataka, 105% in Maharashtra, 58% in Gujarat, 96.8% in Punjab, 85.3% in Haryana and 106% in Tamil Nadu². Among the poorer states, wages rose 78.9% in Bihar, 37.3% in Madhya Pradesh, 137% in Orissa and 73.7% in Uttar Pradesh.

Several reasons have been given for this sharp increase in farm wages. The main reasons include a) the implementation of NREGA, the national employment guarantee scheme of government of India since 2006, b) rapid GDP growth, c) inflation and d) increase in procurement and minimum support prices of commodities³. Employment opportunities under NREGA have made a significant impact in the rural areas by providing assured minimum employment and increasing the rural wages. Rapid GDP growth has created a labour shortage and pushed the wages up. The inflation has pushed the wages up. The increase in wages has far outstripped inflation, as measured by the consumer price index for agricultural workers in India. The rise in commodity prices increased the farm profitability and farmers ability to pay higher wages to labourers.

Though there is a general increase in wage rates for the agricultural workers across different crops, compared to other crops, the increase in wages is significantly higher in Bt cottonseed production. There was a sharp increase in wage rates for Bt cottonseed activities in 2010-11. In the same year the procurement prices for Bt cottonseed have also increased significantly following the decision taken by various state governments to increase maximum sale prices of Bt cottonseed by 30%.

Main objective of the study

¹ The Labor Bureau working under The Ministry of Labor and Employment is responsible for compiling, maintaining, and disseminating State-wise as well as All India average daily wage rates in respect of 18 agricultural and non-agricultural occupations. These wage rates are compiled and released every month through "Indian Labor Journal" and Labor Bureau's website <http://laborbureau.gov.in>.

²a) Harish Damodaran` An alternative theory of inflation` The Business Line, June 12, 2012 <http://www.thehindubusinessline.com/opinion/columns/harish-damodaran/article3520362.ece>,
b)Swaminathan S Anklesaria Aiyar "Agricultural wages have skyrocketed; poors have benefited from GDP growth" The Economic Times, July 07,2011: http://articles.economictimes.indiatimes.com/2011-07-07/news/29747766_1_wage-rate-gdp-growth-monsoon

³ a) `Four Reasons for Wage Boom: Rapid GDP growth and high commodity prices are the biggest drivers, followed by inflation and, of course, NREGA` The Economic Times, July 07,2011,b) `Farm wages have risen due to MGNREGA` The Indian Express, May 22, 2012 <http://www.indianexpress.com/news/farm-wages-have-risen-due-to-mgnrega-govt/952512> c) `The surge in wages: Higher farm wages reflect broader changes in the job market` Business Standard, May 25,2011, <http://www.business-standard.com/india/news/the-surge-in-wages/436620/>

The main objective of the study is to examine the recent trends in wages and procurement prices in Bt cottonseed production in the state of Andhra Pradesh, India to understand the link between them and how they influence each other.

Methodology

The findings of this study are mainly based on analysis of primary data collected through field visits and interactions with farmers and workers in 24 sample seed farms in four selected villages in Nandyala region of Kurnool district in Andhra Pradesh. A total of 82 individual interviews with farmers (24) and workers (58) working on sample farms were conducted. In addition individual interviews, eight focus group discussion were conducted with farmers and workers. The average wage rate is derived by dividing the sum total of wages of all sampled farms by the number farms reporting wages (quotations). The daily wage rates mentioned in this report are adjusted for eight hours working day. The normal working day for various agricultural operations varies between cottonseed and other crops. The normal working day for cross-pollination activity in cottonseed production is about 12 hours (including 1.5 to 2 hours break/rest period) where as it is 8 hours (including one hour break/rest period) in non-cottonseed farm activities such as sowing, weeding, harvesting etc.

SECTION II: BT COTTONSEED PRODUCTION IN INDIA –AN OVERVIEW

India has pioneered in developing hybrid seeds for commercial use in cotton. Though the use of hybrid seeds in cotton began in the late 1960s its usage has witnessed a significant rise in recent years, particularly, after the introduction of Bt technology in cotton crop production in 2002. The Indian government has given permission to Mahyco-Monsanto Biotech Limited (MMB) - a joint venture company between Monsanto, which has patent rights over Bt. technology and Mahyco, a leading Indian seed company - for the commercial use of Bt. technology in cotton crop in 2002. MMB has sublicensed the use of Bt. technology to several leading Indian seed companies to incorporate its technology into their proprietary hybrids. In 2011-2012 about 80% of the total cotton area (23.5 million acres out of 29.6 million acres) in India was covered with Bt hybrids.⁴

Cottonseed production in India is concentrated in five states, namely, Andhra Pradesh, Tamilnadu and Karnataka in South India and Gujarat and Maharashtra in the central part of India. These five states account for nearly 95% of total cottonseed production in the country. Of the total 98,000 acres of cottonseed production in India in 2012-13, Gujarat has largest area covering nearly 54,000 acres (55%), followed by Andhra Pradesh with 24,000 acres (24.5%), and Karnataka with 9,000 acres (9.2%)⁵.

Child labour problem

Cottonseed sector in India has received wide attention in recent years due to large-scale use of child labour in seed production activities. Hybrid cottonseed production is highly labour-intensive and requires large number of workers to complete various tasks. In cottonseed production, cross-pollination (hybridization) is the main activity and is done manually. This activity alone requires 90% of the total labour used in seed cultivation. Children are mainly employed in this activity. Several

⁴Area under Cultivation of Bt. Cotton to be around 94 Lakh hectares in 2011-12` Press Information Bureau, 20-12-211 <http://pib.nic.in/newsite/erelease.aspx?relid=79063>

⁵No official data are available on the total extent of area under cottonseed production and the area covered by individual seed companies in the state. Based on the information gathered from the representatives of seed companies and key informants in seed industry circles the authors have made these estimates.

studies⁶ have pointed out that the main reason for the farmers to employ children is to minimize the production costs. In cottonseed production, the labour costs account for about 50% of total cultivation costs. Farmers endeavour to cut these labour costs by hiring children because the wages paid to children are far below the market wages for adults. Farmers also hire children in preference to adults because farmers can squeeze out higher productivity from children per day. Children will work longer hours, will work much more intensively and they are generally much easier to control than adult worker⁷. A low procurement price by the companies is therefore considered to be one of the contributing factors for the extensive use of child labour in cottonseed production, as they are – according to earlier research - not sufficient to cover at least minimum adult wages⁸.

Contract farming and buy back arrangement

The production and marketing of hybrid cottonseeds in India is mostly controlled by the private sector. Currently private seed companies - both MNCs and Indian companies - account for nearly 90% of the total cottonseed produced and marketed in the country⁹. Cottonseed production is carried out through contract farming. Companies depend upon local farmers for seed production. They arrange seed buy back arrangements with local farmers through middlemen called 'seed organizers'. Seed organizers thus mediate between companies and farmers. Although seed companies are not directly involved in the production process, they exert substantial control over farmers and the production process by supplying foundation seed, advancing production capital, fixing the procurement prices and through stipulating quality controls¹⁰.

Price controls and government intervention

The monopoly control over Bt. technology by MMB has led to exorbitant pricing of Bt cotton hybrids which were in the initial years (2003-05) priced between `1600-1800 for 450 gms of Bt hybrids (` is the symbol for Indian rupee) , as against `400-450 for non- Bt. hybrid seeds. MMB dominated the market for cotton hybrids, either directly through selling hybrid seeds or indirectly through sub-licensing to private seed companies till 2006. The domestic companies who licensed Bt trait from MMB were required to pay a one-time license fee as well as royalty fee on every packet of seed sold in the market.

⁶ 1) Venkateswarlu, Davuluri. (2001) 'Seeds of Bondage: Female Child Bonded Labour in Hybrid Cottonseed Production in Andhra Pradesh', Business and Community Foundation and Plan International. (full report available at <http://www.indianet.nl/sob.html>, 2) Ramamurthy, Priti (2000) 'The Cotton Commodity Chain, Women, Work and Agency in India and Japan: The Case for Feminist Agro-Food Systems Research'. World Development 28(3): 551-578.

⁷ *ibid.*

⁸ Venkateswarlu Davuluri and Lucia da Corta (2005) 'The Price of Childhood: On the Link between Prices Paid to Farmers and the Use of Child Labour in Cottonseed Production in Andhra Pradesh, India' published by India Committee of Netherlands, International Labour Rights Fund and Eine Welt Netz NRW (full report available at http://www.indianet.nl/PriceOfChildhood2005_Final.pdf)

⁹ During 1970s the public sector seed corporations have played a predominant role in developing, producing and marketing of hybrid cottonseeds. However, since 1985 the role of private seed companies in cottonseed business has been growing rapidly. Currently private seed companies both MNCs and Indian companies account for nearly 90% of the total cottonseed produced and marketed in the country (Source: Venkateswarlu, Davuluri (2007), "Child bondage continues in India cotton supply chain" study commissioned by India Committee of the Netherlands, ILRF, DWHH, OECD Watch (full report available at <http://www.indianet.nl/pdf/childbondagecotton.pdf>)

¹⁰ Venkateswarlu, Davuluri (2003), Child Labour and Trans-national Seed Companies in Hybrid Cottonseed Production in Andhra Pradesh, study commissioned by India Committee of the Netherlands (for fulltext see <http://www.indianet.nl/cotseed.html>)

Until 2006, the price for official Bt cotton seeds in India was around ₹1600 per packet of 450 grams. Out of this, ₹1250 was charged by MMB as the trait value.

Owing to pressure from various farmer and civil society organizations the state of Andhra Pradesh imposed certain regulations targeted to control Bt cotton seed prices, so as to make the technology affordable and accessible to small and marginal farmers in the state. In January 2006, the government of Andhra Pradesh filed a case with the Monopolistic and Restrictive Trade Practices Commission (MRTPC) against MMB for indulging in monopolistic trade practices with unreasonably high prices and limited technical developments. MRTPC gave a ruling against MMB and asked it to rework on pricing of Bt. cottonseeds¹¹.

In response to MRTPC Act imposed by the state of Andhra Pradesh, on May 11, 2006, MMB reduced the price for BG-I from ₹1600 for a packet of 450 gm of seed to ₹1200. The government of Andhra Pradesh felt that this was still too high a price, and in June 2006 further released an ordinance declaring that seed prices for Bt cotton seeds in the state would be capped at Rs. 650 for BG I and ₹750 for BG II varieties for a packet of 450 gm of seed (inclusive of technology fee). The other cotton growing states of India also followed Andhra Pradesh and adopted the same pricing. In 2011 there was a revision of prices various state governments and the maximum sale price of Bt cottonseeds was hiked by 30%- for BG I variety from ₹650 to 830 and for BG II variety ₹750 to 930.

SECTION III: LINK BETWEEN WAGES AND PROCUREMENT PRICES

Trends in wages rates during 2004-13

Table 1 presents a comparison of data on average daily wage rates for women agricultural workers in cottonseed and other crops (paddy, green gram and maize) in Andhra Pradesh over a period of eight years, from 2004-05 to 2012-13. The general trend clearly indicates an upward movement in wages both for activities in cottonseed and other crops. Wages have increased significantly since 2004-05. The average daily wages for adult female worker for cross-pollination, which is the vital activity accounting for more than 90% of total labour requirement, in cottonseed rose by nearly 3.3 times (331%) during 2004-2013, from ₹31.02 in 2004-05 to ₹133.7 in 2012-13 (wages are adjusted to eight hour working day). A similar trend was seen in non-cottonseed crops also. The average daily wages for women workers involved in sowing, weeding and harvesting in crops like paddy, green gram and maize) rose by 2.6 times (261%), from ₹35.0 in 2004-05 to ₹126.5 in 2012-13.

¹¹ Monopolies and Restrictive Trade Practices Commission (MRTPC) directed the company to charge “reasonable prices” for Bt cotton seeds. The commission noted that royalty charged by the parent company, Monsanto for Bt cotton seeds in China was lower. Subsequently the prices of seeds were lower. In India Bt cotton seeds carry a “technology fee” in lieu of royalty, which has increased the prices of the seeds.

Table1: Trends in daily wage rates in Bt. cottonseed and other crops during 2004-13

Year	Average daily wage rates for women workers (amount in Indian Rupees `)			
	Cottonseed crop (cross- pollination activity)	Annual growth rate in %	Other crops (paddy, green gram, maize)	Annual growth rate in %
2004-05	31.02		35.0	
2005-06	36.36	17.2%	41.5	18.6%
2006-07	42.78	17.7%	50.0	20.5%
2007-08	50.80	18.7%	59.5	19.0%
2008-09	59.89	17.9%	72.5	21.8%
2009-10	71.66	19.6%	88.2	21.6%
2010-11	89.84	26.2%	100.0	13.4%
2011-12	117.65	30.9%	115.0	15.0%
2012-13	133.69	16.04%	126.5	10.0%

Note: The wage rates are adjusted for eight hours working day. The normal working day for various agricultural operations varies between cottonseed and other crops. The normal working day for cross-pollination activity in cottonseed production is about 10 hours where as it is about 7-8 hours in non-cottonseed farm activities such as sowing, weeding, harvesting etc. For cross-pollination the workers are hired on a seasonal contract basis and wages are fixed on a monthly basis. To arrive at daily wage rate the monthly salary is divided by 34 (30 working days plus four weekly offs. Though workers hired on a monthly basis are legally entitled for one day weekly off it is not implemented in the field). For the purpose of comparison of with agricultural operations in other crops the daily wage rate for cross pollination is further adjusted for eight hours working day and overtime work is calculated at one and half time the ordinary wages. For instance, in 2012-13 the average daily wage rate for women workers involved in cross-pollination activity was `133.69. This was arrived first by dividing the monthly salary of `6250 by 34 to get the daily wage rate of `183.8 which is for 10 hours working day and then this amount is further adjusted to eight hours working day and overtime payment at the rate of one and half times. The per hour wage rate is `16.7. It is calculated for 8 hours @ `16.7 per hour and overtime time 2 hours @ `25.05 per hour.

Though there is an overall trend of upward movement in wages since 2004-05, the increase was much sharper after 2010 for cottonseed activities. The annual growth rate in wages for cross-pollination was in the range of 17.2 % - 19.6% during 2005-10 (17.2% in 2005-06, 17.6% in 2006-07, 18.8% in 2007-08, 17.8% in 2008-09 and 19.6% in 2009-10). This has jumped to 26.2% in 2010-11 and 30.9% in 2011-12. When compared with non-cottonseed activities the annual growth rate in wages for cottonseed activities was slightly lower during 2004-10. This trend has reversed during 2010-13. The wages for cottonseed activities witnessed a much higher growth during this period. The wages for cottonseed activities have increased by 26.2% in 2010-11, 30.9% in 2011-12 and 16% in 2012-13 whereas this increase was 13.4% in 2010-11, 15% in 2011-12 and 10% in 2012-13 for non- cottonseed activities.

Wages and Inflation

The farm wages have increased at a pace much faster than that of inflation, as measured by Consumer Price Index (CPI) for agricultural labourers in Andhra Pradesh. The Consumer Price Index numbers for agricultural labourers rose by 100.6% during 2004- 2013, from 357 points in 2004-05 to 716 points in 2012-13 (table 2). The CPI inflation rose by 3.9% in 2005-06, 8.1% in 2006-07, 7.2% in 2007-08, 12.6% in 2008-09, 14.1% 2009-10, 9.2 % in 2010-11, 9.6% in 2011-12 and 8.3% in 2012-13.

**Table 2: Consumer Price Index numbers for agricultural laborers
In Andhra Pradesh 2004-13**

Year	CPI numbers for AL (Base 1986-87 = 100 points)	Annual growth in %
2004-05	357	
2005-06	371	3.9%
2006-07	401	8.1%
2007-08	430	7.2%
2008-09	484	12.6%
2009-10	552	14.1%
2010-11	603	9.2%
2011-12	661	9.6%
2012-13	716	8.3%

Source: Labour Bureau, Ministry of Labour and Employment, Government of India. The CPI figures mentioned in the table are averages calculated for the whole year.

Reasons for increase in real wages

The increase in real wages in cottonseed farms in recent years has been attributed to many factors. One of the important factors which has contributed to an increase in farm wages is the implementation since 2006 of the National Rural Employment Guarantee Act. Employment opportunities under NREGA have made a significant impact in the rural areas by providing assured minimum employment for 100 days for one family member thereby increasing the rural wages. Most growers interviewed reported that the implementation of NREGA has led to scarcity of labour and pushed the wages up. It has created new employment opportunities at the rates much higher than the prevailing market wages¹² for rural workers and empowered them to bargain for better wages.

Another contributing factor for tightening of rural labour markets and pushing the wages up is the availability of employment avenues outside of agriculture (construction, service sector etc) due to accelerated economic growth and urbanisation. The interventions by the government, NGOs, UN agencies like UNICEF and some seed companies in recent years addressing the problem of child labour in cottonseed farms in Andhra Pradesh had a positive impact and reduced the availability of children for cottonseed work. This in turn contributed to further tightening of the labour market. Increase in procurement price is another important factor that helped the real wages to go up in recent years. The rise in procurement prices increased the farm profitability and farmers ability to pay higher wages to labourers.

Trends in wages and procurement prices : A comparison

Although a combination of factors contributed for the overall increase in wages since 2004-05, the sharp increase in wages in 2010-11 and 2011-12, however, can be largely attributed to significant increase in the procurement prices paid to farmers by the seed companies. Table 3 present the data on average daily wage rates for women workers and procurement prices and in Bt cottonseed production over a period of eight years starting from 2004-05. A comparison of trends in wage rates and procurement prices during 2004-2013 reveals that though both procurement prices and wages

¹²NREGA guarantees wages equivalent to legal minimum wages for agricultural labour prescribed by the state governments. The prevailing market wages for most of the agricultural activities are below the legal minimum wages.

have recorded a steady increase, the increase in wages was much faster than that of procurement prices. While the average daily wages for women workers rose by nearly 331% (3.3 times) during 2004-13 (from ₹31.02 in 2004-05 to ₹133.7 in 2012-13) the procurement prices for Bt cottonseed rose by only 79.8% during the same period (from ₹228 in 2004-05 to ₹410 in 2012-13 per 750 grams).

Table 3: Comparison of trends in procurement prices and farm wages in Bt. Cottonseed production in AP during 2004-13

Year	Procurement prices		Average daily wage rates for women workers for cross-pollination activity	
	Rate for 750 grams (₹)	Annual growth rate in %	Amount (₹)	Annual growth rate in %
2004-05	228		31.02	
2005-06	234	2.6%	36.36	17.2%
2006-07	244	4.8%	42.78	17.7%
2007-08	255	4.5%	50.80	18.7%
2008-09	268	5.1%	59.89	17.9%
2009-10	276	2.7%	71.66	19.6%
2010-11	326	18.1%	89.84	26.2%
2011-12	390	19.6%	117.65	30.9%
2012-13	410	5.3%	133.69	16.04%

A breakdown of increase in procurement prices and wage rates in two periods of time, 2004-2010 and 2010-13, shows that both procurement prices and wages have increased more in the latter period i.e. 2010-13. While the annual growth rate in procurement prices paid to farmers by the seed companies was in the range of 2.6% to 5% during 2004-10 (2.6% 2005-06, 4.8% in 2006-07, 4.5% in 2007-08, 5.1% 2008-09 and 2.7% in 2009-10), it has jumped to 18.1% to 19.6% during 2010-12 (18.1% in 2010-11 and 19.6% in 2011-12). A similar trend was seen in wage rates also. The annual growth rate in wages for cross-pollination was in the range of 17.2% - 19.6% during 2004-10 and this has jumped to 26.2% - 30.9% during 2010-12 (26.2% in 2010-11 and 30.9% in 2011-12).

An analysis of the trends in wages and procurement prices indicates that there is a link between them. During 2004-10 wage rates grow at a pace much faster rate than that of procurement prices; wages increased by 131% whereas procurement prices increased by only 21%. In cottonseed production labour costs account for nearly 50% of the total production costs and any rise in the wage bill will significantly impact the production costs. Due to significant increase in input costs, particularly the labour costs after the introduction of NREGA in 2006, the farmers started putting pressure on the seed companies to increase the procurement price on par with the increase in production costs. The pressure was intensified in 2010-11 after the government allowed seed companies to increase their maximum sale price of Bt. cottonseed in the open market by 30% (for BG I variety from ₹650 to ₹830 and for BG II variety ₹750 to ₹930 per 450 gram packet).

As already explained, the monopoly control over Bt. technology by MMB has led to exorbitant pricing of Bt cotton hybrids which were in the initial years (2003-2005) priced between Rs 1600-1800 per 450 gms of Bt hybrids, as against ₹400-450 for non- Bt. hybrid seeds. This led to government imposing price control over Bt cottonseed in 2006. The maximum sale prices of Bt cottonseeds capped at ₹650 for BG I and ₹750 for BG II varieties for a packet of 450 gm of seed. In 2011 there was a revision and the

maximum sale price of Bt cottonseeds was hiked by 30%. The hike in sale price helped the companies to increase procurement prices. Seed companies increased the procurement prices by 18 % in 2010-11 and 19.6% in 2011-12. This was a very significant rise when compared with a mere 20% increase over a period of six years from 2004-5 to 2009-2010.

The sharp rise in procurement prices during 2010-13 had a positive impact on wages. During 2010-13 the wages in cottonseed production grew by 86.5% which is significantly higher compared to general wage increase in other crops during this period (table 1). In other crops such as paddy, maize and green gram wages grew by 43.4% during 2010-13. It has also helped to reduce the wage gap between cottonseed and other crops. Compared to other crops the wages in cottonseed farms were low till 2010-11 (table 1). In non-cottonseed farm activities adult female workers received ₹100 per day in 2010-11 whereas in cottonseed activity they were paid ₹89.8. During 2011-13 this trend was reversed and wages in cottonseed were slightly higher compared with other crops. In non-cottonseed farm activities adult female workers received ₹115 and ₹126.5 per day in 2011-12 and 2012-13 respectively whereas in cottonseed activity they were paid ₹117.6 in 2011-12 and ₹133.7 in 2012-13. The rise in procurement price encouraged the growers to increase the area under cottonseed production creating additional demand for labour in a market which is already facing labour shortages. This led to further tightening of labour markets and pushed wages up.

Despite increase wages are still below the legal minimum wages

An important point to be noted here is that despite the significant increase in the wages in recent years, the prevailing wages in cottonseed farms are still below the minimum legal wages. The minimum daily wage rate prescribed for casual labour in the locations studied varied between ₹175-234 depending upon the type of activity¹³. The minimum daily wage rate fixed for cross-pollination is ₹234 and for weeding, sowing and harvesting it is ₹186. The prevailing average daily wage rate for cross-pollination in the locations studied was ₹133.7 in 2012-13 which is about 42.7% lower than the legal minimum wage¹⁴.

23% hike over current procurement price is required to cover minimum wages

If farmers have to comply with the official Minimum Wages Act, the per acre total cost of production will increase by roughly 23.4% (from ₹135,000 to ₹166,600 and the cost of cross-pollination by 42.7% (from ₹74,000 to ₹105,600)¹⁵. The additional amount needed to cover minimum wages (for workers involved in cross-pollination) for one acre per season is approximately ₹31,600. The additional amount of ₹31,600 raises the present cost of production of per packet of 750 gram seed by ₹99 (from ₹375 to ₹474)¹⁶. In order to cover this additional amount of ₹31,600, a 24% increase over present procurement price of seed is required. During 2012-13 the average procurement price offered by seed companies

¹³Minimum Wages Notification for Agriculture Sector issued by Department of Labour and Employment, Government of Andhra Pradesh, Dated 18-07-2012

¹⁴In 2011-12 the minimum wage for cross pollination was Rs 220 and average daily wage paid to workers was ₹117.6. The actual wage was 46.5% lower than the legal minimum wage in 2011-12.

¹⁵The cost of production estimates are for 2012-13 crop season and are based on the data collected from 18 sample farms.

¹⁶While calculating the cost of cultivation of per 750 grams cottonseed the additional output (cotton lint and cotton from male parent) value of approximately ₹15,000 is deducted from total cultivation costs. After deducting the income from additional output the total cost of cultivation per acre is ₹120,000. The average yield of seed per acre is estimated at 320 packets of 750 grams each.

is ₹410 per 750 gram seed¹⁷ and this would have to increase to ₹509 if minimum wages are to be paid while maintaining the present profit margin of the farmer which is fluctuating between 5-15% in recent years. With the current procurement prices of companies, seed farmers cannot afford to pay minimum wages to the labourers and still make reasonable profits.

Wage increase has positive impact on child labour

The question which is very relevant to ask here is the impact of rise in wages on the incidence of child labour on cottonseed farms. The available data do suggest that the rise in wages had a positive impact on child labour. The incidence child labour in the locations studied has come down in recent years. A study conducted by the author in 2010 revealed that there has been decline in the incidence of child labour since 2003-04 in Andhra Pradesh in general and Nandyala region in Kurnool in particular¹⁸. The proportion of child labour to the total workforce on cottonseed farms declined from 57.4% in 2003-04 to 29.8% in 2009-10. Along with other factors, increased wages have contributed for reduction in the employment of child labour on cottonseed farms.

SECTION IV: SUMMARY AND CONCLUSION

There is a steady increase of agricultural wages in many parts of rural Andhra Pradesh in recent years. Compared to other crops, the increase in wages is significantly higher in Bt cottonseed production. The average daily wages for adult female worker for cross-pollination in cottonseed rose by nearly 3.3 times during 2004-2013. The wages have increased at a pace much faster than that of inflation. The Consumer Price Index numbers for agricultural labourers rose by 100.6% during 2004- 2013 while wages in cottonseed production rose by 331% during this period. The increase in real wages in cottonseed farms has been attributed to many factors including the rise in procurement prices.

An analysis of the trends in wages and procurement prices indicates that there is a link between them. Although a combination of factors contributed for the overall increase in wages since 2004-05, the sharp increase in wages during 2010-13, however, can be largely attributed to significant increase in the procurement prices paid to farmers by the seed companies. During 2010-13 the wages in cottonseed production grew by 86.5% which is significantly higher compared to general wage increase in other crops during this period. During the same period there is an increase of 48.5% in procurement prices paid to the farmers by the companies (18 % in 2010-11, 19.6% in 2011-12 and 5.1 % in 2012-13). The sharp rise in procurement prices during 2010-13 had a positive impact on wages. It has encouraged the growers to increase the area under cottonseed production creating additional demand for labour in a market which is already facing labour shortages. This led to further tightening of labour markets and pushed wages up.

Despite the significant increase in the wages in recent years, the prevailing wages in cottonseed farms are still below the minimum legal wages prescribed by the local state government. The prevailing average daily wage rate for cross-pollination in the locations studied is ₹133.7 in 2012-13 which is about 42.7% lower than the legal minimum wage. If farmers have to comply with the legal minimum

¹⁷There is not much difference in cottonseed procurement prices of different companies paid to the farmers. In 2012- 13 procurement prices paid by most of the companies varied between ₹400 to ₹430 per 750 gram packet

¹⁸ Venkateswarlu, Davuluri (2010b) 'Seeds of Child Labor- Signs of Hope: Child and Adult Labor in Cottonseed Production in India': jointly published by ICN,ILRF and Stop Child Labor (full report can be downloaded from <http://www.indianet.nl/pdf/signsofhope.pdf>)

wage requirements, per acre total cost of production will increase by roughly 23.4% or `31,600. In order to cover this additional amount of `31,600, a 24% increase over present procurement price of seed is required. With the current procurement prices of companies, seed farmers cannot afford to pay minimum wages to the labourers and still make reasonable profits.

The rise in wages had a positive impact on child labour. The incidence child labour in the locations studied has come down in recent years. Along with other factors, increased wages have contributed for reduction in the employment of child labour on cottonseed farms.