Effective public policy which can reduce gender discrimination in the agricultural labour market: A theoretical investigation

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2 January 2013

Effective Public Policy which can Reduce Gender Discrimination in the Agricultural Labour Market: A Theoretical Investigation

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Abstract

Wage and employment differences between male and female agricultural labourers in the under developed countries including India is not new. With the help of a simple theoretical model it is here proved that public policy like implementation of National Rural Employment Guarantee Scheme (NREGS) in the rural areas can reduce wage discrimination but fails to reduce employment discrimination in the agricultural labour market. It is also proved that implementation of NREGS not only reduces profitability of the farm household but also decreases employment generation in the agricultural labour market. The paper suggests higher amount of monetary punishment charged by the Conciliation Committee at local panchayet formed by State Government for resolving dispute related with social protection of the agricultural labourer as suggested by National Commission for Enterprises in Unorganized Sector (NCEUS) in 2007 for depriving female agricultural labourers both in terms of wage and employment can be an effective public policy which can reduce wage as well as employment discrimination in the agricultural labour market. It is also proved that the loss of profit of the landlord due to charging higher amount of monetary punishment is less than implementation of NREGS in that region. The possible formation of the proposed Conciliation Committee is also suggested here.

Key words: Agricultural Labour Market, Gender Discrimination, NREGS, Conciliation Committee, Size of Punishment

JEL Classifications: J16, J43, J52, J78

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Effective Public Policy which can Reduce Gender Discrimination in the Agricultural Labour Market: A Theoretical Investigation

Introduction:

Discrimination is a situation where workers of the same productivity receive different pay or workers of dissimilar productivity are paid equally. According to Gary Becker (1971) the size of wage differential between the majority and minority workers depend on two factors: (a) size of the minority group and (b) the extent of belief among the employers. In the agricultural labour market of India, a female agricultural labourer may be treated in the minority group of workers. A strong effort by civil rights activists of USA has been waged to amend the 'Equal Pay Act' to incorporate a concept known as 'Comparable worth'. According to these activities firms practice two types of wage discrimination against women. First one is; women are paid less than men even doing exactly the same job. A second type of wage discrimination occurs when the job structure with in a firm substantially segregated by sex and women are paid less than men; even though both are performing work that although not the same, is of 'comparable worth' value to the employer. The Equal Pay act declares the first type of wage discrimination illegal but discrimination of the second type is not a violation of the act since the two groups of workers are employed in different jobs. To remedy this situation, the advocates of 'comparable worth' propose changing the wording of the act from 'equal pay for equal work' to 'equal pay for jobs of equal value'. Under this version of the law, employer would be required to pay similar wages to men and women not only for the same job but for all jobs that are of same value to the firm, regardless of the actual title or function. The concept of 'comparable worth' can also be applied in the agricultural labour market of India in order to combat gender discrimination. According to the 61st round NSSO report, 94% of the female labour force of India is employed in the unorganized sector and merely 6% are employed in the organized sector. Again out of the 94% of the female labourers found in the unorganized sector almost 72% is working in the agricultural sector. The size of female agricultural workers are not small in rural India, rather the size is rising over time. According to the Indian Census data, 2001 over the period 1961-2001 the percentage of rural women workers classified as agricultural labourer have increased from 25.6% to 43.4% compared to the increase from 16.2% to 27.4% for men. In their study Ramachandran and others (2001) had shown that feminization of agricultural workers is rising and that is observed through the rising proportion of female agricultural workers in female work force and a

rise in the ratio of female to male agricultural labourers. Actually after the decline in labour force participation rate during 1993-94 to 1999-2000, the indicator recovered during the period 1999-2000 to 2004-05 making the resurgence of employment growth. This is true in case of both males and females. According to the 61st round of NSSO survey, the labour force participation rate among the male agricultural labourer has increased from 533 per thousand to 546 per thousand while for female it increased from 235 per thousand to 249 per thousand. But they are not given equal wages as compared to the men. It is often argued that since women do less laborious work than men, they receive lower wages than men. But wage discrimination of women exists even for similar types of work performed by men as well as female labourers like threshing harvesting etc. Agricultural operations are substitutable among men and women, but different stages of production process are often divided into male specific and female specific jobs and different wage rates are fixed for these two types of jobs invariably paying higher wages for male specific jobs due to the assumption that male specific jobs are more stalled than the female specific. Foster and Resenzweigh(1996) using data from Philippines had shown that men were more likely to undertake agricultural task that requires greater upper body strength such as plowing were as women are more likely to be engaged in activities such as weeding, harvesting. So according to their findings the division of labour by gender thus depends on comparative advantage of the sex in various tasks. But in India it is observed that even if the same operations are undertaken both by male and female agricultural laborers, higher wages are paid to the male laborers on the basis of the belief that the productive capacity of male laborers is more than that of the females because of their superior physical strength though duration of work of both types of workers in the field are same. Actually most of the activities in agricultural production except ploughing, women are actively involved and are employed in different parts of cultivation like transplantation, harvesting, weeding, sowing etc. Still mainly due to lack of sufficient bargaining power during the time of wage determination and the wrong belief of the employer, a female agricultural labourer face discrimination both in terms of wage and employment than their male counterpart. Gender discrimination in wages is defined as gap in earnings between male and female workers. Discrimination against women in the payment of wages is very common in India. In the national level a female agricultural labourer is paid 27% less on an average than her male counterpart. Table-1 shows gender differentiation in the agricultural labour market of India. The Table shows that between 1999 and 2008 the wage rates in different phases of agricultural

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production have improved in monetary terms but that fails to reduce gender discrimination. The table shows in India on an average the wage rate of a male agricultural labourer in a particular man day is more than that of a female agricultural labourer.

A state wise analysis of male-female daily earnings ratio based on Rural Labour Enquiry (of the NSSO) had shown increasing male-female wage differentials in the late 1990s in a large number of states. In Tamil Nadu, Kerala, Andhra Pradesh and Maharastra the male-female earnings gap not only continued to increase but the ratio was more than 1.5. Kundu (2006) during his village level survey had observed that in different districts of West Bengal, a female agricultural labourer receive less than man even for similar type of work. They are also recruited less number of man-days in compare to their male counterpart. If we divide an agricultural production process in different phases then as far as ploughing is concerned, higher wage for a male agricultural labourer than his female counterpart is justified though in very few situations a female is engaged in ploughing. But in other phases of agricultural activity most of the situations female agricultural labourer is paid less than male even though both male and female agricultural labourers work more or less for same length of time and same kind of work in the field. In spite of that, in terms of employment, male agricultural labourers are recruited proportionately more than female agricultural labourers both in number and in terms of number of man-days.

Two important Public Policies consider by the Indian Government which may reduce Gender Discrimination in Agricultural Labour Market:

The Second National Commission of Labour (SNCL, 2002) was asked to examine the issue a comprehensive legislation for unorganized sector workers. The Commission made significant recommendations on reform of labour law in the country. The proposed legislation includes implementation of minimum wage, equal remuneration act and normal eight working hours for each worker etc. The SNCL proposed a Central Board at the centre and State Boards at the state levels for administration of the bill. It also recommended a district level board at the district level and Welfare Facilitation Centers (WFC) at lower level for same purposes. The WFC should bear the responsibility to resolve any dispute arising out of employment relating to wage and working conditions. It may also take the help of Lok Adalats or Labour Courts. As a follow up to the SNCL recommendation, the Ministry of Labour of India has proposed a Comprehensive legislation for regulation of employment and conditions of service of the unorganized workers to

provide safety, social security, health and welfare. So National Commission for Enterprises in the Unorganized Sector (NCEUS) was formed to recommend the social security required for these huge unorganized labour forces of India. This commission has proposed two draft bills regarding the conditions of work and livelihood promotion in 2007. The first bill is applicable to the agricultural workers and the other for the non-agricultural workers. Two separate bills have been provided to take care of specific issues being faced by the two different sets of wage workers. Here the agricultural workers are casual in nature which means a worker is casually engaged in agriculture in consideration of wages. Some important recommendations of NCEUS for the agricultural workers are mentioned below.

1. Normal working hour of each labourer shall be limited to eight hours a day, beyond which a worker will be paid overtime at one and a half of the normal rate of wage per hour.

2. Each worker should be paid according to the State declared minimum wage which should be no less than Central Government recommended National Minimum Wage. During the time of fixation of a National Minimum Wage, the Central Government will appoint a committee consisting of employer representative, wage worker representative and experts in that field. The wage will be fixed after considering the minimum basic needs of the wage workers and the family. Minimum wage law sets a legal minimum on the wages that the employer has to pay to his employees. For the unskilled and informal workers, the minimum wage helps them to get wage above the equilibrium wage in a labour abundant economy.

3. No employer can discriminate any agricultural worker in terms on wage and employment on the basis of sex.

To enforce those recommendations, The State Government by rules will constitute Dispute Resolution Council (DRC) at district level and Conciliation Committee (CC) at block or panchayat level for resolving disputes related with social protection of the agricultural workers. The composition of the CC is tripartite and consists of an officer designated by the state government, one representative from the employer and one from the workers. The state government may appoint two persons for advice the Conciliation Committee. If the committee detects any dispute or violation of any recommended social security norms on the workers, it can

punish the employer. Here the punishment is either imprisonment up to one year or with fine which may extend up to five thousand rupees.

We know that law enforcement is an important component of any government regulation. The most important measure for improving the livelihood of an agricultural labourer is proper implementation of the minimum wage act. As the agricultural labourers most of the times have no effective bargaining power, the minimum wage rate is fixed by the Central and State government under the provision of Minimum Wage Act. 1948. It was told that enforcement of minimum wage in agriculture is a real problem because inspectors are generally reluctant to visit farmer's field and employers are also reluctant to co-operate with them whenever such visits are undertaken. So when minimum wage law cannot be properly enforced.

World development report (2012) has given much focus on gender equality particularly in the poorer regions. National Rural Employment Guarantee Scheme (NREGS) was initiated in India in 2006. Two main interesting features of this programme are (i) the wage rate per day provided in this programme will be uniform across gender and (ii) it will give priority to female employment and targets that 33 percent of the beneficiaries should be women. We therefore can hypothesize that introduction of this programme should lead to greater labour force participation of women and which can be effective to reduce gender discrimination in the labour market mainly in agriculture both in terms of wage and employment.

Actually wage discrimination on the basis of gender in Indian agriculture is a common issue for discussion. Enhancement of the bargaining power of the women through any public policy or specific law of the State as well as the Central Government can be effective to reduce the wage as well as employment discrimination in the labour market. An investigation is required to establish which public policy is effective to minimize the problem.

In this paper we assume that a male agricultural labourer is getting wage more than subsistence wage in that area and there exists downward wage rigidity of that due to their higher bargaining power but a female labourer is deprived from getting that wage and their wage is totally controlled by the employer. The government's basic objective is to reduce wage discrimination in the labour market. But in this paper we should not be confined ourselves only to wage discrimination but also on employment discrimination because we know that a female

agricultural labourer is not inefficient during the time of production process. We know that three different theories of labour market discrimination are based on (i) prejudice, (ii) market power and (iii) imperfect information. Out of those three, we here consider the first two in our model. Prejudice of the employer cum big farmer indicates the situation when the employer as well as the farmer has a belief that a male agricultural labourer is comparatively more productive than a female agricultural labourer. Now the question is whether higher amount of penalty in monetary terms can play any significant role to reduce gender discrimination both in terms of wage and employment in the agricultural labour market. Besides that we shall also investigate whether gender discrimination in the agricultural labour market can be reduced after implementation of NREGS in that area Now in the presence of two above mentioned factors we shall here try to find out an appropriate policy which can combat gender discrimination in the agricultural labour market both in terms of wages and employment where the belief of comparable worth is also given equal importance.

The Theoretical Model:

Consider a village economy where there is only one farmer who cultivates certain plot of his own land fully with the help of hired local agricultural labourers which comprise of both male labourers and female labourers. Here for simplicity of our model assume labour is the only factor of production and the production function is neo-classical type and follows diminishing marginal productivity for both types of labourers. The landlord cum employer enjoys monopsony power in the agricultural labour market. There exists gender discrimination in the agricultural labour market both in terms of wage and employment. Here L_m and L_f indicate total number of male and female agricultural labourers employed by the landlord respectively in the entire production process. We assume the presence of NREGS in that village economy where the wage rate offered for one man-day of work is W_0. The male agricultural labourers are much more unionized and their bargaining power is much higher compare to their female agricultural labourers. So they agree to work under the landlord if each of them offered W_M which is higher than W_0. But due to lack of proper bargaining power, the female agricultural labourers is getting less than W_M. The female labourer supply function of the gender discriminating monopsonist landlord is expressed as $W_f = W(L_f) = W_0 L_f^\alpha$ where $\alpha \, \varepsilon \, (1, 1.5)$, $L_f \geq 1$, $W'(L_f) > 0$ and $W''(L_f) \geq 0$. W_0 is the non-farm wage rate in that region. So if the landlord wants to employ a female agricultural

labourer in his production process, then he has to offer her at least W_0 for her availability in the production process. It is also already assumed that $W_M > W_f$. Under social security law for the unorganized agricultural workers, underpayment to each female labourer is illegal. Penalty in monetary terms will be charged by the government recommended body if violation of social security norm is detected from the side of the employer. Let 'p' be the probability of being caught for depriving a female agricultural labourer to offer her wage less than the minimum wage and the size of penalty for depriving one female agricultural labourer for giving one unit less than the minimum wage is denoted as 'k' where $k\epsilon(0,1)$ and it is exogenously determined. So the expected cost (the amount of penalty or fine) the landlord has to bear due to offering less than minimum wage to L_f number of female agricultural labourer will be $pk\{(W_M - W_0 L_f^\alpha)L_f\}$.

The Neo-classical type production function of the landlord is here expressed as follows where we observe diminishing marginal productivity condition for both L_m and L_f.

$$Y\left(L_m^a, L_f^b\right) = L_m^a L_f^b \text{ where } a \ \epsilon(0, 0.5), b \ \epsilon(0,0.5) \ a > b \ and \ a + b < 1 \dots\dots\dots\dots\dots\dots\dots.(1)$$

If the farmer is selling his product at unit price, then the profit function of the partial complying farmer cum employer can be expressed as

$$\Pi(L_m, \ L_f) = L_m^a L_f^b \ - W_M L_m - W_0 L_f^{(\alpha+1)} - pk\{(W_M - W_0 L_f^\alpha)L_f\} \dots\dots\dots\dots\dots\dots\dots\dots..(2)$$

Where the inequality constraint is $W_f = W_0 L_f^\alpha < W_M \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$

We can solve the above optimization problem with strict inequality constraint with the help of Kuhn-Tucker conditions and we have;

$$\frac{\partial \Pi}{\partial L_m} = aL_m^{(a-1)}L_f^b - W_M \leq 0, = 0 \text{ if } L_m > 0 \dots\dots\dots\dots\dots\dots.(4)$$

$$\frac{\partial \Pi}{\partial L_f} = bL_m^a L_f^{(b-1)} - (\alpha + 1)W_0 L_f^\alpha - pk\{W_M - (\alpha + 1)W_0 L_f^\alpha\} \leq 0 = 0 \text{ if } L_f > 0 \ ..(5)$$

We also have

$$\frac{\partial^2 \Pi}{\partial L_m^2} = a(a-1)L_m^{(a-2)}L_f^b < 0 \ , \ \frac{\partial^2 \Pi}{\partial L_f^2} = b(b\text{-}1)L_m^a L_f^{(b-2)} - \alpha(\alpha+1)W_0 L_f^{(\alpha-1)}(1-pk) < 0 \ \text{and}$$

$$\frac{\partial^2 \Pi}{\partial L_f L_m} = abL_m^{(a-1)}L_f^{(b-1)} > 0 \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(6)$$

So following Hessian Determinant we can say

$$D = ab(1-a-b)L_m^{2(a-1)}L_f^{2(b-1)} - a(a-1)\alpha(\alpha+1)W_0 L_f^{(b+\alpha-1)}L_m^{(a-2)}(1-pk) > 0 \ \text{as}$$

$pk < 1 \dots$ and $(a+b) < 1 \dots\dots\dots\dots\dots\dots\dots(7)$

Solving the equations (4) and (5) we have L_m^* and L_f^* (the two interior solutions), the optimum employment generation of male and female agricultural labourers by the gender discriminating monopsonist landlord at the profit maximizing level[2]. It is also true that $L_m^* = L_m(k, W_0)$ and $L_f^* = L_f(k, W_0)$ as W_M is assumed as unchanged wage rate of a male agricultural labourer.

Proposition-1: *The landlord at profit maximizing level will employ more male agricultural labourer than the female agricultural labourer provided* $aL_f < bL_m$

Proof: Dividing equation (4) by equation (5) we have

$$\frac{\Pi_{L_m}}{\Pi_{L_f}} = \frac{aL_f}{bL_m} = \frac{W_M}{(\alpha+1)W_0 L_f^\alpha(1-pk) + pkW_M} \dots\dots\dots\dots\dots\dots\dots\dots.(8)$$

As the production function is neo classical type, following the property of diminishing marginal productivity of the factor, $L_m^* > L_f^*$ if and only if $f_{L_m} < f_{L_f}$ or $aL_f < bL_m$. On the basis of this condition we also have $W_M < (\alpha+1)W_f$ which is not impossible[3]. We know that 'a' and 'b' are elasticity of output with respect to 'L_m' and 'L_f' respectively where it is already assumed that $a + b < 1$. According to the perception of the landlord cum employer' a > b. Now larger the gap

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between 'a' and 'b' higher will be the difference between L_m^* and L_f^{*4} i.e. more employment discrimination will be observed between the male agricultural labourer and female agricultural labourer. The employment discrimination can be totally removed or the landlord will be indifferent between employing male and female agricultural labourer provided $aL_f = bL_m$

Now the question is how we can combat this gender discrimination in the agricultural labour market both in terms of wage and employment?

The indirect profit function of the landlord can now expressed as

$$\Pi^*\{L_m^*(W_0, k), L_f^*(W_0, k)\} = L_m^*(W_0, k)^a L_f^*(W_0, k)^b - W_M L_m^*(W_0, k) - W_0 L_f^*(W_0, k)^{\alpha+1}$$
$$-pk[\{W_M - W_0 L_f^*(W_0, k)^\alpha\}L_f^*(W_{0,}k)^\alpha]\ldots\ldots\ldots(9)$$

Gender discrimination in the labour market can be changed through using W_0, 'k' individually as both the instrument are beyond the control of the employer as well as the landlord.

Implementation of NREGS and its impact on Wage, Employment and Profitability of the Producer:

Proposition-2: *Implementation of NREGS will reduce employment generation among both types of workers in the agricultural sector.*

Implementation of NREGS in that area will help the existing labourers both male and female to have alternative employment opportunity where the government decided wage is much higher than W_0. So we can say that, implementation of that programme in that area can enhance W_0. As we have already assumed that W_M is rigid in the downward direction, and it is far above than W_0, we can say that no impact will be observed on the wage rate of the male agricultural labourers. But following the labour supply function, wage as well as employment will be directly affected of the female agricultural labourers due to enhancement of W_0. Few indirect effects will also be observed on L_m.

From equation (4) and (5) we have

$$(a-1)L_f dL_m^* + bL_m dL_f^* = 0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (9) \qquad\qquad \text{and}$$

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[4] Suppose a=0.4 and b=0.3 and $L_m = 10$. As $aL_f < bL_m$ L_f will be at most 7. Similarly if a=0.45 b=0.25 and $L_m = 10$ then L_f can be at most 5.

$$abL_m^{(a-1)}L_f^{(b-1)}dL_m^* + \left[b(b-1)L_m^a L_f^{(b-2)} - \alpha(\alpha+1)W_0 L_f^{(\alpha-1)} + pk\alpha(\alpha+1)W_0 L_f^{(\alpha-1)}\right]dL_f^*$$

$$= (\alpha+1)L_f^{\alpha}(1-pk)dW_0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(10)$$

Now solving the above equations (9) and (10) with the help of Cramer's rule we have

$$\frac{\partial L_m^*}{\partial W_0} = \frac{-(\alpha+1)L_f^{\alpha*}(1-pk)abL_m^{*(a-1)}L_f^{*(b-1)}}{D} < 0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(11) \quad \text{and}$$

$$\frac{\partial L_f^*}{\partial W_0} = \frac{a(a-1)(\alpha+1)L_f^{\alpha*}(1-pk)L_m^{*(a-2)}L_f^{*b}}{D} < 0 \ldots\ldots\ldots\ldots..(12) \text{as } a\epsilon(0,0.5)$$

So we can conclude that implementation of NREGS will reduce employment generation of both the female as well as male labourers in the agricultural sector.

Proposition-3: *Given W_M, the male-female wage discrimination in the agricultural labour market can be reduced if and only if $E_{L_f W_0} < 1$*

Proof. We have $\quad W_f^* = W_0 L_f^{\alpha*}$ ………………………………………………….(13)

Now at given W_M, the gender discrimination in terms of wage in the agricultural labour market can be reduced if and only if $dW_f/dW_0 > 0$

Considering the negative relationship between L_f^* and W_0, from relation (13) we have

$$\frac{dW_F}{dW_0} = L_f^{(\alpha-1)*}\{ L_f^* - \alpha W_0 \frac{dL_f^*}{dW_0}\}$$

Now $\frac{dW_F}{dW_0} > 0$ provided

$$E_{L_f W_0} = \frac{dL_f^*}{dW_0}\frac{W_0}{L_f} < \frac{1}{\alpha} < 1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(14)$$

The above relation establishes the fact that in spite of the fall of L_f due to implementation of NREGS, the wage rate of the female agricultural labourer will increase provided the elasticity of employment generation with respect to W_0 will be inelastic in nature.

Proposition-4: *Enhancement of W_0 fails to reduce employment discrimination in agricultural labour market.*

Employment discrimination among gender in the agricultural labour market can be reduced if and only if $L_m^* / L_f^* \to 1$

Before implementation of NREGS, we have already proved that $L_m^* > L_f^*$. It has been also proved from (11) and (12) that rise of W_0 after implementation of NREGS wage reduces employment generation on both types of labourers. Now gender discrimination in the labour market in terms of employment can be minimized provided $\left|\frac{dL_m^*}{dW_0}\right| > \left|\frac{dL_f^*}{dW_0}\right|$ i.e. proportionate fall of employment of male agricultural labourers should be more than their female counterparts and that will happen if and only if $(1-a)L_f^* < bL_m^*$ which is not possible[5]. So after hike of W_0, the gap between L_m and L_f will be wider.

Actually due to enhancement of W_0 after implementation of NREGS, the landlord has to reduce the employment generation of both types of labourers. But as employer believes the productive capacity of the male agricultural labourer is more than female agricultural labourer, the drop of employment generation among the male agricultural labourers is less than the female agricultural labourers which ultimately fails to reduce employment discrimination in the agricultural labour market after implementation of NREGS in that region.

Proposition-5: *There should be an upper limit of the enhancement of NREGS wage say $\widehat{W_0}$ beyond which the employer-cum landlord will stop his agricultural production.*

One of the prime objectives of NREGS is to reduce gender discrimination in the agricultural labour market mainly in terms of wage. Then following Proposition-3, NREGS is an effective public policy. But the question is how far government will hike the NREGS wage. Initially we assume that the opportunity cost of profit or the earning of the landlord from the alternative source of income is $\overline{\Pi}$. Now we apply Envelope theorem in Eq.(9), where we assume that W_M and 'k' both are kept unchanged. Application of the theorem gives the following result:

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[5] Suppose, $L_m = 10$, $L_f = 7$, $a = 0.4$ and $b = 0.3$ then $(1-a)L_f^* = 4.2$ and $bL_m^* = 3$. Similarly if $a=0.45$, $b = .25$, $L_m = 10$ and $L_f = 7$ then also $(1-a)L_f^* = 3.85$ and $bL_m^* = 2.5$

$$\frac{d\Pi^*}{dW_0} = -L_f^{(\alpha+1)*}(1-pk) < 0 \text{ and } \frac{d^2\Pi^*}{dW_0^2} = -(\alpha+1)L_f^{\alpha*}(1-pk)\frac{dL_f^*}{dW_0} > 0 \text{ } as \text{ } \frac{dL_f^*}{dW_0} < 0 \text{ (15)}$$

So optimum profit curve of the monopsonist landlord is negatively sloped and convex in nature.

We have already assumed that $W_0 < W_M$ as $W_f < W_M$. Now from Figure-1, it is clear that the landlord will continue his agricultural production process and employ female as well as male agricultural labourers until NREGS wage hikes up to $\widehat{W_0}$. Beyond which no employment will be generated in the agricultural labour market.

Impact on Wage, Employment and Profitability if fine in Monetary terms is charged on Employer due to discriminating Female Agricultural labourer from Male counterparts in terms of Wage and Employment;.

Proposition-6: *Higher 'k' keeping W_0 undisturbed will increase both 'L_m^* and L_f^* and can reduce wage gap between male and female agricultural labourers provided $W_M - (\alpha+1)W_f < 0$*

Proof: Using equations (4) and (5) and with the help of Cramer's rule we have

$$\frac{\partial L_m^*}{\partial k} = -\frac{p\{W_M - (\alpha+1)W_f\}abL_m^{(a-1)*}L_f^{(b-1)*}}{D} > 0 \text{ ....(16) and}$$

$$\frac{\partial L_f^*}{\partial k} = \frac{p\{W_M - (\alpha+1)W_f\}a(a-1)L_m^{(a-2)*}L_f^{b*}}{D} > 0 \text{ ... as a} < 1 \text{ ......(17)}$$

Hence, the gender discrimination in the agricultural labour market in terms of wage can be minimized though charging high 'k'. Given W_M, higher 'k' will increase W_F through increasing L_f which minimizes the gap between W_M and W_f. Another positive aspect of this public policy is this policy will not reduce employment generation in the agricultural labour market just like implementation of NREGS in that area; rather it improves both male as well as female employment generation in the labour market.

Proposition-7: *Higher 'k' will also reduce employment discrimination in the agricultural labour market.*

Proof: Employment discrimination in the agricultural labour market can be minimized provided

$$\frac{dL_f^*}{dk} > \frac{dL_m^*}{dk} \text{ i.e. if } bL_m^* < (1-a)L_f^* \text{ holds which is obvious} \dots \dots \dots \dots (18)$$

Now according to the constitutional law, the farmer as well as the employer is a member of the Conciliation Committee. The 59th round of NSSO revealed that one third of the Indian farmers had claimed that farming is not so much profitable now a day. In this situation we have to identify the condition at which the discriminating monopsonist farmer will allow the Conciliation committee to charge high 'k' in order to combat gender discrimination in the labour market both in terms of wage and employment. There should be an upper limit of 'k'. Higher 'k' will discourage the farmer to continue his agricultural production activity.

Proposition 8: *'k' should not be more than $\hat{k}$, i.e. $k \in (\bar{k}, \hat{k})$ where $\bar{k}$ is subsistence level of 'k'*

Proof:

$$\frac{d\Pi^*}{dk} = -p\{(W_M - W_0 L_f^{\alpha*})L_f^*\} < 0 \dots \dots \dots \dots \dots \dots \dots \dots . (19)$$

$$\frac{d^2\Pi^*}{dk^2} = -p\frac{dL_f^*}{dk}\{W_M - (\alpha+1)W_f\} > 0 \text{ as } W_M - (\alpha+1)W_f < 0 \dots \dots \dots . (20)$$

So profit curve of the employer is negatively sloped and convex in nature.

At $k = \bar{k}$, we consider that $\overline{\Pi_k^*} > \overline{\Pi}$ So we have Fig-2, on the basis of which we can determine $\hat{k}$.

Comparative Impact Evaluation of Two Different Public Policies on Reduction of Gender Discrimination in Agricultural Labour Market:

Hence it is proved that both the public policies will reduce the profitability of the farm household. But implementation of NREGS reduces the employment generation in the agricultural field where as higher amount of punishment does not do that. Actually higher 'k' can reduce both wage and employment discrimination in the agricultural labour market

Proposition-9: *The farmer will prefer higher amount of 'k' to implementation of NREGS in that area provided $L_f^{\alpha*}(1-pk) > p\{W_M - W_f^*\}$ when $W_f^* = W_0 L_f^{\alpha*}$*

Proof: From Equation (15) and (19) we have the following results:

$$\frac{d\Pi^*}{dW_0} = -L_f^{(\alpha+1)*}(1-pk) \text{ and } \frac{d\Pi^*}{dk} = -p\{(W_M - W_0 L_f^{\alpha*})L_f^*\}$$

Now, the rational farm household will always prefer the policy which can minimize their loss.

Now $\left|\frac{d\Pi^*}{dk}\right| < \left|\frac{d\Pi^*}{dW_0}\right|$ provided $p\{W_M - W_f^*\} < L_f^{\alpha*}(1\text{-pk})$ which indicates the amount of loss faced by the farmer cum employer after implementation of social security norm is comparatively less if 'k' is hiked instead of W_0.

Conclusions:

Following the recommendation of NCEUS government should take proper initiative to reduce gender discrimination in the agricultural labour market of India both in terms of wage and employment. The following steps can be taken by the government to combat that labour market discriminating problem.

(1) Representation of female agricultural labourer should be included in the Committee of Dispute Resolution Council at district level and Conciliation committee at block or panchayat level. This can improve the probability that the employer is apprehended and punished for violating the social security norm.

(2) The size of penalty should be high. As the size is decided in the meeting of the Conciliation Committee, the employer will be fully aware of that and there is no question of informational gap. So the non-complying farmer cum employer even if enjoying monopsony power in the labour market wants to minimize the gap between W_M and W_f* in order to avoid the expected cost on penalty.

(3) Actually it is difficult to reduce employment discrimination between the male and female agricultural labourers because the employer cum farmer has a belief that a male agricultural labourer is comparatively more productive than a female agricultural labourer. Still it is here proved that under certain conditions high 'k' is comparatively more effective to reduce not only wage discrimination but alos employment discrimination marginally.

Table-1

Gender Discrimination among the Agricultural Labourers of India in Terms of Average Daily Wage Rates (Rs.):

Different Parts of Agricultural Production Process	Male Agricultural Labourers		Female Agricultural Labourers	
	1999-00	September 2008	1999-00	September 2008
Ploughing	36.64	99.35	33.21	50.71
Sowing	38.75	86.32	28.30	61.99
Transplanting	39.53	78.54	28.95	66.54
Weeding	34.99	76.66	25.41	64.67
Harvesting	38.44	85.26	29.30	48.34
Threshing	39.31	84.26	27.72	65.20

Source: Indian Labour Journal Dec. 2008

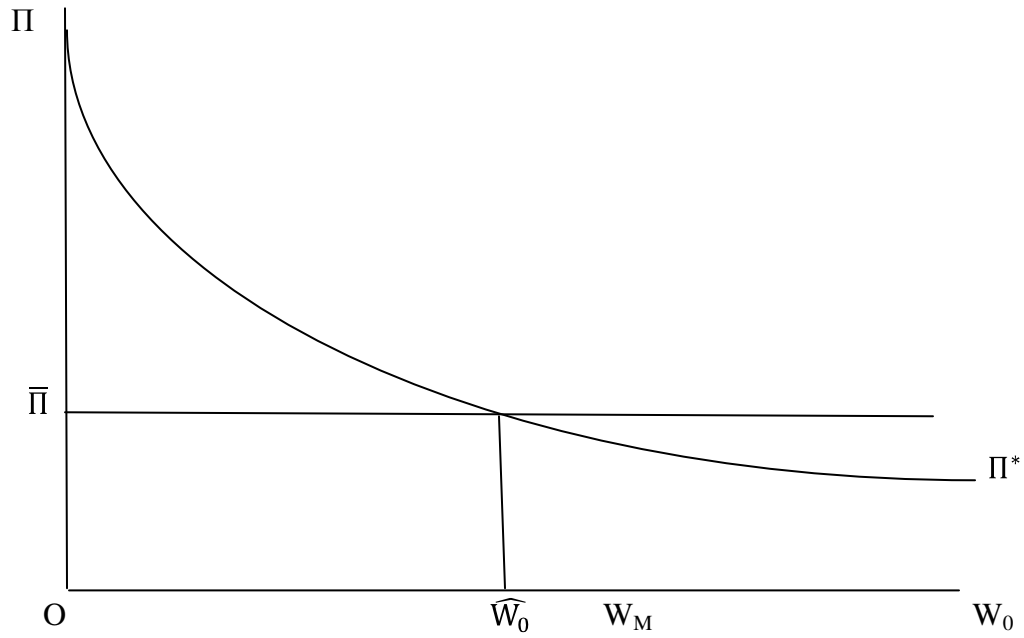<p style="text-align:center">Fig - 1</p>

Maximum possible value of W_0 i.e. $\widehat{W_0}$ beyond which the landlord will stop his production as well as employment generation.
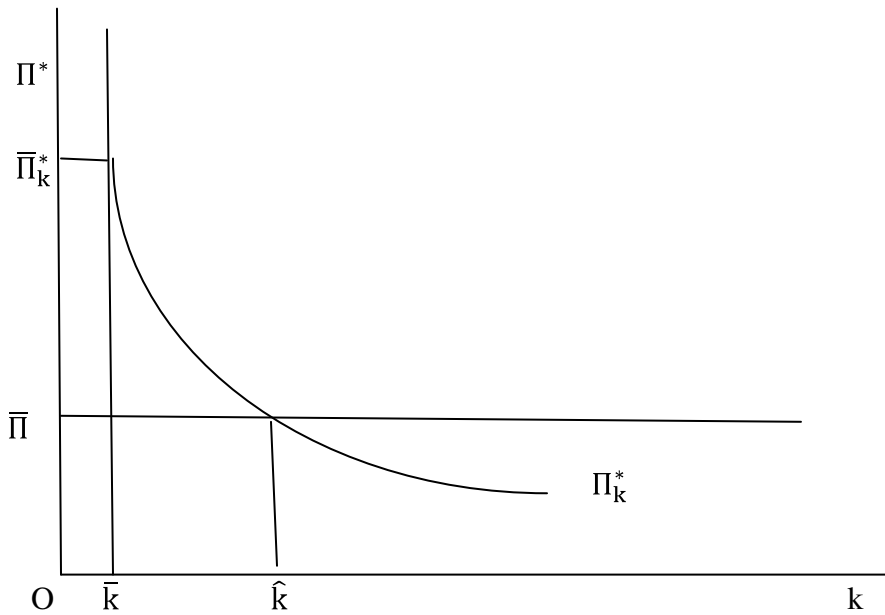

<p style="text-align:center">Fig-2</p>

Maximum possible value of 'k' i.e. $\hat{k}$ beyond which the landlord will stop his production as well as employment generation

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