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ABSTRACTS

An Analytical Look at MGNREGA — A Case Study of Surandai Village in Tamil Nadu

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The paper has looked at MGNREGA analytically and has provided details about funding, employment generation, works undertaken, etc. since its inception in 2005. The outlay for Scheme is ₹ 40,000 crore for the financial year 2010-11. The study has outlined some of the criticisms being levied against MGNREGA. To study the impact of MGNREGA in Surandai village of Tirunelveli district in Kerala, data were collected from the panchayat office and also from 20 beneficiaries of the Scheme using a well-designed questionnaire. The aspects covered in the study include variation in wages in market and under MGNREGA, nature of works undertaken, and economic impact on the beneficiaries of the Scheme.

Key words: MGNREGA, Labour wages, Tamil Nadu

Impact of MGNREGA on Availability of Labourers for Paddy Cultivation in Katni District of Madhya Pradesh

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The paper has studied the availability of agricultural labourers during major agricultural operations in paddy cultivation after the implementation of MGNREGA in Katni district of Madhya Pradesh. The impact on wages of agricultural labourers has been studied along with the effect on crop production due to non-availability of labourers. The study is based on the data collected from 90 farmers for the year 2010. The data have shown that because of employment of a large number of matured agricultural labourers under MGNREGA works, farmers had to engage unexperienced labourers. As a result, the labour days for different operations had increased and consequently human labour cost had become almost double in paddy cultivation.

Key words: MGNREGA, Labour availability, Paddy cultivation, Madhya Pradesh

Origin and Growth of Agricultural Labourers in Assam: A Case Study of Barpeta District in Assam

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The growth of agricultural labourers has been studied in Assam with a case study of its Barpeta district. The study is based on the secondary data collected from various published sources for the period 1951-2001. The growth rate of agricultural labourers has been found increasing at the diminishing rate during the period. It was 117 per cent during 1961-77, 108 per cent during 1971-1991 and only 50 per cent during 1991-2001 for the state of Assam. The district-wise analysis has revealed that North Cachar Hills district had the highest growth rate of agricultural labourers. In the Barapeta district, the rate of growth of agricultural labourers has been found higher than the state average during the period.

Key words: Agricultural labourers, Assam

Performance of MGNREG Programme in Keerapalayam Block in Cuddalore District of Tamil Nadu

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In Tamil Nadu, MGNREGA has been implemented in 31 districts with a total registration of about 1.32 crore labourers. In the state, Cuddalore district's share is 6.32 per cent. In this context, this paper has studied the impact of MGNREGA in the Keerapalayam block of Cuddalore district, which accounts for 6.9 per cent of the total labourers registered in the district. The study has analysed employment generation, asset creation and impact on labour availability for farming activities. It is found that the average employment generated in this block was of 119 person-days per annum, which earned an average wage of ₹ 89.23 per day. The beneficiaries were from both scheduled castes (45%) and other castes (55%). The block has also created assets like road connectivity (70 Nos), water conservations (11 Nos), renovation of water bodies (272 Nos) and irrigation channels (299 Nos) under MGNREGA works. The respondents have revealed that a higher percentage of registered labourers (40-60%) was engaged during the period June to February, which coincides with the peak agricultural seasons of *Kuruvai* (June-September) and late-*Samba* (September-January) when the agricultural activities of this block are at the maximum. Hence, the study has suggested that the MGNREGA activities may be reorganized during the lean agricultural period of February to May so as to avoid the inter-sectoral competition for the labour force.

Key words: MGNREGA, Labour availability, Tamil Nadu

Performance of Grain Legumes in Uttarakhand and its Impact on Sustainable Agriculture — A Study in Villages of Assam Valley

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The study undertaken in the villages of Assam valley in Uttarakhand has assessed the temporal and spatial changes in the status of grain legumes and has examined their role in influencing the use of inorganic sources of nitrogenous fertilizers, and effects on productivity growth of rice and wheat. A effort has been made to find out the economics of pulses production in the state of Uttarakhand. The constraints identified include a decline in the supply of labour during the period of major field operations, which has led to a rise in cost of production of these crops. Data have been collected from several published source from 1990-91 to 2007-08 and three-year moving average method has been computed for production, area and yield of major grain legumes to examine the sources of growth in their production. Traditionally, legumes have been an important element of the cropping systems in Uttarakhand. With the introduction of improved varieties of rice and wheat, legumes have been replaced to a larger extent.

Key words: Farm labour, Grain legumes, Uttarakhand

Rural Livelihood Pattern of Agricultural Households: Preliminary Evidence from Orissa

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Based on the secondary source of information, the paper has analysed income and employment generation, the extent of indebtedness and earnings prevalent among landless labourers and agricultural households in rural Orissa to understand their livelihood patterns. The evidence relating to rural labour households and agricultural labour households shows an explicit overall decline in employment both for male and female labourers. There is also a decline in the average number of earning members per household. Further, preliminary analysis has shown that livelihood options are limited and skewed towards large farmers in the study villages. Differential landholdings, occupational diversification, migratory pattern and agricultural productivity have been found to be the key factors of poverty to deal with livelihood options across category and holding-size of farmers.

Key words: Agricultural, income, Agricultural employment, Livelihood, Orissa

Labour Productivity and Factors Affecting Labour Supply in Agro Processing Centres (APC) in India

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This paper has examined the labour intensity and efficiency using primary data (2008-09 and 2009-10) collected from 23 Agro-processing centres (APC) in 8 states out of 78 APC established by AICRP on post-harvest technology (PHT) in 16 states of India. The results have revealed that Agro-processing centres have employed labour of low-to-medium intensity and medium-to-high labour productivity. However, APC based on cereals, pulses, oilseed and spices processing are found to be more labour-intensive (except APC of Assam) compared to APC on fruits and vegetables processing (seasonal venture). The regression analysis has depicted that coefficient of female members in family (ratio of female to total members) and D1 (dummy for timely and on demand payment) have a positive and statistically significant ($p < 0.01$) relation with supply of labour. Hence, social obligations and economic conditions have been found to be the deciding forces for supply of labour days in APC of Punjab. The study has suggested that market promotion for the processed food in rural and semi-urban areas will improve labour productivity besides generating indirect employment opportunity.

Key words: Labour productivity, Labour supply, Labour intensity, Labour efficiency, Agro-processing centres

Trends and Determinants of Agricultural Wages in West Bengal

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The paper has examined the trends and determinants of wages of agricultural labourers across the districts of West Bengal from 1980-81 to 1999-00 using the data published annually by Agricultural Wages in India (AWI). The data of different years have shown that there was a slow down in the growth rate of real daily wages of male and female agricultural labourers in more than half of the districts in the first half of 1980s but there was gradual recovery in the latter part of the decade. However, increasing trends of real wages in the latter half of the 1980s were not sustained in the subsequent years. The decline in wage rate has been observed in the first half of the 1990s. The latter half of the decade started with recovery of the wage rate but again declined in the beginning of the 2000. The gender differential in wage rates of agricultural labourers has been found but declined in most of the districts over the years. There was a declining trend in the variation of real wages across the districts of West Bengal over the years. The variations in the male wage rates could be explained by five relevant demands and supply variables: labour productivity, diversification of labour into other occupations, gross cropped area per agricultural labourer, cropping intensity and literacy rate. The study has suggested that out of the five variables, only one variable, namely, occupational diversification has positively and significantly influenced the real wage rate of male agricultural labourers in 2000-01.

Key words: Agricultural wages, Labour productivity, Occupational diversification, West Bengal

Demand for Labour and Wages in Punjab Agriculture

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The recent farm level changes in crop sector employment in Punjab have been analysed by decomposing these changes into crop pattern, cropped area and technology effects and the determinants of labour demand and wages have been estimated. The study is based on data pertaining to the period 1981-82 to 2005-06 obtained from “Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in Punjab”. A decline in human labour-use has been witnessed on Punjab farms by 25 per cent, largely due to use of labour-substituting technology, including tractors and harvesting combines. There is an increase in the casualization of labour-use. Contrary to the expectations, the rise in wage rate is not associated with land productivity but is largely influenced by inflation and output prices. The wage rate elasticity to output price and CPIAL has ranged between 0.64 and 0.81 for rice and wheat. The study has emphasized that the future growth in rural employment can come from either the non-farm sector or diversification of the crop pattern in favour of vegetables and other labour-intensive crops.

Key words: Labour demand, Wage rate, Technology effect, Casualization of labour

Commercialization of Agriculture and Structural Transformations in Labour-use in Kerala

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Since the agricultural sector in Kerala is witnessing a structural transformation in its cropping pattern, this paper has analysed the changes in labour-use as a result of the shift from subsistence crops to commercial crops. The changes in farm employment have been studied due to two major factors, namely ‘acreage expansion’ and ‘new technology’. The data for past three decades (1981-91, 1999-01 and 2001-09) have shown distinct pictures of farm employment in Kerala. During 1981-91, technological factor was the most important factor accounting for the decline in farm employment and the change in crop pattern was the most important factor during the next two decades. The study has suggested that the shift in cropping pattern from subsistence (paddy and tapioca) to commercial (coconut and rubber) crops has resulted in large-scale labour displacement in the agricultural sector. The technology factor associated with HYVs, fertilizer, seed, water, machinery, etc. has also played an important role in the displacement of labour from the agricultural sector.

Key words: Labour-use, Commercialization of agriculture, Structural transformation in agriculture, Kerala

Structure of Employment in Agricultural Sector in Andhra Pradesh

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This paper has analysed the employment scenario in the agricultural sector in Andhra Pradesh based on the secondary data. The study has observed a slight decrease in the number of cultivators (from about 74.86 lakhs in 1960-61 to about 73.97 lakhs in 2001) and a significant increase in the number of agricultural workers (from 53.36 lakhs to 98.23 lakhs). The trend of subdivisions of landholdings is reflected more evidently in the land operated per cultivator, which has declined gradually from 0.84 ha of net area sown in 1961 to 0.65 ha in 2001. The share of employment in the farm sector which was as high as around 70 per cent in 1971, declined to around 62 per cent in 2001. On the other hand, the share of non-farm employment has registered an increase from around 12 per cent to 17 per cent between 1971 and 2001. At the same time, the percentage of non-workers has consistently increased from 48.13 per cent in 1961 to 54.21 per cent in 2001. Male workforce has been found to dominate the non-farm sector employment. Its share has gone up from around 37 per cent to 50 per cent between 1971 and 1991. In the case of females, on the other hand, the corresponding increase has been from just below 4 per cent in 1971 to around 7 per cent in 1991. However, over the years, the concentration of women workforce has been increasing at a much faster rate than of their male counterparts in the non-farm employment.

Key words: Agri-employment structure, Farm labour, Non-farm employment, Andhra Pradesh

Employment Scenario of MGNREGA in Western Maharashtra

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The employment scenario under MGNREGA (popularly known as NREGA) has been examined in western Maharashtra with focus on employment guaranteed, works undertaken, strengths, bottlenecks and strategies for strengthening the programme. The study has been done at micro level based on the data available and reports from beneficiaries of the scheme and government officials. It has been observed that only 34 per cent households registered under MNREGS have received job cards in western Maharashtra. This proportion was highest in the Kolhapur district (51-55%). Only 10-15 per cent of households belonging to scheduled castes and scheduled tribes category have received job cards against 75 per cent for the other categories. The actual employment generation has been reported much below 100 days in a year in most of the districts of western Maharashtra, except Nandurbar district. The works undertaken through MNREGS are rural irrigation, water conservation and harvesting, drought proofing and land development. The study has found MNREGS is a much better scheme than other employment related programmes prevalent in the country.

Key words: MNREGS, Impact of MNREGS, Western Maharashtra, Women employment

Changing Labour Employment Pattern in Physiographically Forbidden Terrain of Chhota Bhangal of Kangra District in Himachal Pradesh

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Labour employment scenario is witnessing visible changes in marginal states such as Himachal Pradesh, where urbanization and industrialization are weak forces fuelling the development process. In these areas marked by mountain specificities, such changes are resulting from the niche-based agricultural diversification. The present study has examined the impact of crop diversification on labour employment in the Chhota Bhangal region. The results have revealed that vegetable crops such as cauliflower, cabbage, radish and potato dominate the cropping pattern in this area. The cultivation of vegetables could generate 86 per cent more labour employment as compared to cereals on more diversified farms. The composition of total employment has revealed that 28 per cent employment was generated through farm activities. Labour productivity was substantially higher on more-diversified farms *vis-à-vis* less-diversified farms. In the determinants of employment diversification, both the size of landholding and number of fragments have been found to have a significant positive effect. These findings navigate to the inference that the diversification of agriculture to off-season vegetables in such remote areas can augment employment opportunities considerably that would help raise farm incomes in otherwise forbidden hill interlands.

Key words: Labour employment, Crop diversification, Labour productivity, Kanga district

Analysis of Human Labour Utilization in Cotton Production in Gujarat

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The utilization pattern of human labour in cotton production in Gujarat has been analysed over a period of past 28 years (1980-81 to 2006-07). The total period has been devided into three sub-periods: first (1981-82 to 1989-90), second (1990-91 to 1999-00) and third (2000-01 to 2006-07) for the purpose of analysis. Source of the data was Commission of Agricultural Costs and Prices, New Delhi. The study has revealed a decreasing trend in human labour utilization up to the year 2000-01, and afterwards it started increasing. But the cost of human labour per ha has shown an increasing trend during the entire period of analysis. On an average, 111.33 person-days of human labour was utilized per ha of cotton cultivation during the period of analysis. Of this, family labour contributed 48.3 per cent and remaining was the hired labour. Significant growth has not been observed in per hectare human labour utilization during the period of analysis. But, during first and second sub-periods, there was a significant decrease in the total human labour, while there was an increase in the third sub-period. The cost of human labour per hectare as well as its share in working cost increased continuously during the period of analysis. Family labour income has been found positive in all the three sub-periods. Income per personday of family labour has been higher than the wage rate, indicating the profitable nature of cotton cultivation in Gujarat.

Key words: Human labour, Labour utilization, Cotton, Gujarat

Bt Technology: Labour-use Pattern in Cotton Cultivation — A Case Study of Andhra Pradesh

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The study has examined the female labour-use pattern in Bt cotton cultivation in the state of Andhra Pradesh during 2006-07. It has been found that physical yield obtained is 21.44 per cent higher in Bt cotton than non-Bt cotton cultivation. The total labour employment is 13 per cent higher in Bt cotton than non-Bt cotton cultivation, whereas the proportion of hired labour is 11 per cent higher in Bt cotton. The proportion of hired labour to total labour has been found to increase with farm-size in Bt cotton cultivation. A positive relationship is found between labour-use and farm-size. The total employment opportunities have increased with Bt cotton cultivation in all the farming categories, though not uniformly. And female labourers are the major beneficiaries among hired labourers. The aggregation of labour-use pattern has shown that females earn much more than males from Bt cotton. This is due to the fact that cotton harvesting is largely carried out by hired female labourers, whose employment opportunities and returns to labour have improved remarkably. The elasticity of employment has been found to be high among medium and semi-medium farming categories and low in marginal and small categories. The new Bt technology is a big gain for the rural economy as a whole, since the rural employment growth has been the biggest concern in the state in the past decade.

Key words: Bt technology, Andhra Pradesh, Labour-use pattern

Labour Gap Analysis of Sugarcane in Kolhapur District of Western Maharashtra

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The labour gap in sugarcane cultivation has been analysed in the Kolhapur district of western Maharashtra by selecting 90 farmers and using simple tabular method. It has been observed that the family size increases with increase in the farm-size group. The gap in use of hired labour has been found to range from 12.50 per cent to 73.33 per cent for male labourers and from 26.67 per cent to 87.62 per cent for female labourers. In the case of family labour, the gap of male labour ranged from 15.38 per cent to 73.33 per cent and female labour from 26.67 per cent to 84.62 per cent, respectively. The study has suggested that the gap of labour requirement of sugarcane farming being about 50 per cent in male and female labourers, the mechanization of sugarcane farming is essential to increase the productivity of sugarcane farming.

Key words: Labour gap analysis, Sugarcane farming Male-female labour

Status of Women Labour in Agriculture — A Case Study on Commercial Crops in Guntur District

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The study has been conducted in the Guntur district of Andhra Pradesh state during 2010-11 on 80 women agricultural labourers selected using multi-stage random sampling technique. The women labourers have been found to get maximum employment for 155 days in a year. They could get employment for maximum number of days during harvesting (80 days), followed by weeding and post-harvest (39 days) operations. The maximum unemployment period (108 days) was during summer, which is the off-season for agriculture in the study area. The lack of employment opportunities during off-season compels the women labourers to seek alternative employment sources like MGNREGS activities, flower picking, etc. The seasonal unemployment in agriculture has been found to cause a severe impact on the household income, expenditure, savings and repayment of debt. The women labourers have made following suggestions to overcome the problem of unemployment: (i) The NREGS programme should be implemented properly assuring 100 days of work in a year. And this programme should be provided during agricultural off-season, (ii) The SHG activities should be enlarged and training should be provided for developing entrepreneurial skills, (iii) The existing wage rate in agriculture should be increased and loan should be provided at lower interest rate to purchase livestock and poultry.

Key words: Women labour in agriculture, Farm women labour, Andhra Pradesh, MGNREGS

Estimation of Demand for Labour for Major Crops of Maharashtra

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The input demand functions for four crops (cotton, paddy, soybean and sorghum) of Vidarbha region in the Maharashtra state have been estimated using crops sectional cum time series data for ten year (1999-00 to 2008-09). The study has revealed that the output price for soybean has increased maximum (at 8.17% per annum), followed by sorghum, paddy and cotton. The analysis of factor demand equations has shown that the demand elasticities with respect to own prices have the expected negative signs indicating that the results are in accordance with theory of demand. One per cent increase in own price, holding other prices constant, will reduce human labour employment by 1.30 per cent, 1.8 per cent, 1.34 per cent, 1.26 per cent and bullock labour demand by 1.34 per cent, 0.69 per cent, 1.24 per cent and 1.13 per cent, respectively in cotton, paddy, soybean and sorghum crops. The absolute value of own price elasticity of human labour and bullock labour have been found greater than unity, indicating an elastic response of input utilization to their own price.

Key words: Labour demand, Maharashtra

Feminization of Agricultural Labour in India

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The paper has studied feminization of agricultural labour in India. Over the years, there has been a gradual realization about the key role of women in agricultural development. The phenomenon of increasing feminization of agriculture has drawn policy attention in recent years. It is observed that the share of cultivators in the total rural workforce is declining, while that of agricultural labourers has increased marginally at the national level. The workforce composition of rural India (main and marginal) has shown a 4 per cent shift of rural workforce in favour of women during 1991-2001. The Census 2001 data show that 39.16 per cent of the total workers in farming (cultivators and agricultural labour) are women. About 33 per cent of the cultivators and about 47 per cent of agricultural labourers are women. If we add female workers in livestock, fisheries and forestry-related enterprises, their percentage would increase. The feminization of agriculture generally takes place due to out-migration of males from low-paid agriculture to high-paid industry.

Key words: Agricultural labour, Feminization of agriculture, Labour casualization

The Changing Faces of Women Labour in Assam

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Women labour is an important segment of the workforce of India. With the changing socio-economic scenario, women's productive roles have assumed new dimensions. In India the labour force participation rate of women is 31.56 per cent, less than half of that of men at 68.44 per cent. The study has observed that apart from their household work, women take up various works outside their house such as working as domestic helpers in households, as agricultural labourers in the field, tea garden labourers, workers in construction of roads and buildings, etc. It has been observed that the wages (Rs.71.50/per day) and the hours of work (8) in the case 18 years and above women labourers vary with their age groups, especially among the tea garden labourers. It has been found that the women workers face many problems in carrying out their work, which include low wage, lack of minimum facilities during work hours, ill treatment on the part of the employers, etc.

Key words: Women labour, Wage differentials, Tea garden labourers, Assam

Role of Women Labour in Dairy and its Impact on Household Food Security — A Case Study of Bhiwani District in Haryana

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The role of women has been investigated in dairy enterprise in the Bhiwani district of Haryana along with the impact of employment of women labour on food security of households. A cumulative employment index has been prepared to investigate the employment status of women engaged in dairying and its association with the status of food security has been measured using the chi-square test. It has been found that food security and employment are associated in the case of Loharu block. Education of self and spouse and improvement in family income have depicted a positive and significant impact on employment of women. Though, the age of self and spouse are important variables, very little can be done to make any change in it. Incentives may be provided for providing education and training for skill development of women in the rural areas, which, in turn would improve the level of their employment and consequently food security of households in the rural areas.

Key words: Women labour, Household food security, Dairy sector

Labour dynamics in Bt Cotton Production in India

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The present study, undertaken to analyze the dynamics of labour in cotton production, has indicated that in major cotton-growing states, namely Haryana, Rajasthan, Karnataka and Tamil Nadu, the area under cotton has decreased because of alternative employment opportunities like MGNREGA works. More than 90 per cent respondents have reported that weed management is labour-intensive and affects the yield to the extent of 35-40 per cent. The monetary benefits accrued from this technology are to the tune of ₹ 510/ha to ₹ 1726/ha. The Bt technology has been found to benefit about 81 per cent of marginal and small farmers, who constitute a majority in the farming community. This technology has addressed not only the issue of equity but also the problem of labour shortage in cotton cultivation .

Key words: Labour dynamics, MGNREGA, Bt cotton

The Labour Dynamics of Ring Seine Fishery in Kerala

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Kerala is an important contributor to the country's marine fisheries production as well as its export. Various types of fishing fleets, both traditional and mechanized, are used by the fishermen to achieve this status. The present study is mainly focused on the traditional ring seine fishery of Chellanam village in the Ernakulam district of Kerala. This fishery has a unique traditional system of managing the labour as well as fishing activities, an important tradition being the *karanila* system which regulates the work and wage sharing pattern of the fishery. Though the ring seine unit (craft and gear) is owned by more than one fishermen (shareholders), every fisherman who is capable of fishing has a right to work as well as a share in the wages. The crew:owner ratio of sharing the benefits is 60:40, with the returns to labour being proportional to the revenue generated.

Key words: Labour dynamics, Ring seine, Work share, Wage share, *Karanila* system, Kerala

Impact of Migration on Rural Economy of Konkan Region

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The socio-economic impact of migration in Ratnagiri and Sindhudurg districts of Konkan region of Maharashtra has been assessed based on 120 migrants and 120 non-migrants. The impact of migration on consumption expenditure has been assessed by functional analysis. The family-size has been found larger in case of migrant (8.0) (which included family members at native place and migrated members) than non-migrant (5.3) households. Among these migrant members, earner members accounted for 37.36 per cent, while 62.64 per cent were non-earners. The educational score of migrant family members has been noted higher (8.31) as compared to family members at native place. The average size of landholding of non-migrant households has been reported relatively more. The labour force ratios and migration ratios have been found to be higher in migrant households. The migration has depicted a positive impact on capital formation. The migration has brought about significant changes in adoption of modern technology and thereby increase in the farm production. The functional analysis of consumption expenditure has indicated that family size, income from agriculture, non-farm income, remittance from migrant and dummy for migration have a significant and positive impact on consumption expenditure.

Key words: Labour migration, Rural economy, Konkan region

MGNREGA and its Impact on Distress Migration: Some Facts and Emerging Issues

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The paper has analysed the impact of MGNREGA on out-migration, assets creation and provision of employment to the targeted families as well as problems being faced by the beneficiaries and their opinion for the smooth functioning of the scheme. The study is based on the data collected from a random sample of 100 beneficiaries selected from Sonpur panchayat in Rehli block of Sagar district of Madhya Pradesh pertaining to the year 2009-10. The study has indicated that MGNREGA has increased person-days employment, created productive assets, strengthened infrastructure, slowed down distress migration and empowered the women folk. Wage and farming have been reported to be main source of income by 97 per cent of the sample beneficiaries. The incremental income (₹ 2639) has not only enhanced the expenditure capacity of households but has also promoted their savings (₹ 39). The major problems reported by the respondents were low wage rate (78% respondents), delay in payment, delay in provision of work after registration, fake registrations, and unavailability of material at working place. Among the suggestions advocated by the respondents are : (i) MGNREGA must be viewed in terms of employment multiplier while preparing plans under this scheme, (ii) number of employment days under MGNREGA should be enhanced; (iii) the really poor and needy households should be identified carefully for providing employment.

Key words: MGNREGA, Distress migration, Rural employment, Madhya Pradesh

Impact of MGNREGA on Wage Employment and Income Generation: A Case Study of Darbhanga District in Bihar

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The study has examined the impact of MGNREGA on generation of employment, development of assets and provision of income to the rural people of Bihar in general and the district Darbhanga in particular. The study is based on the secondary data collected from various published sources for the years 2008-09, 2009-10 and 2010-11. The study has reported that both in Bihar as well as Darbhanga district all the households who demanded employment were provided employment under MGNREGA. The percentage of participation of scheduled castes has been substantial, 45-50 per cent in terms of person-days. The percentage of women participation in Bihar was around 30 per cent in 2008-09 and 2009-10 but has increased to 44 per cent in 2010-11. The percentage of expenditure on wages under MGNREGA works has been quite substantial during the years under study, 63 to 67 per cent in Bihar and 60 to 69 per cent in the Darbhanga district. The study has revealed that MGNREGA has provided ample opportunities of employment to the women and weaker sections of the society, has increased their income levels and has reduced poverty level in Darbhanga district as well as in Bihar state.

Key words: MGNREGA, Wage employment, Bihar

Impact of MGNREGA on Agricultural Employment Pattern in West Garo Hills of Meghalaya

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In the state of Meghalaya, MGNREGA was initially implemented in the West Garo Hills and South Garo Hills districts in 2006. It is argued that implementation of MGNREGS has resulted in large-scale diversion of agricultural labour to the non-farm sector. This paper has analysed the impact of MGNREGA on agricultural employment pattern in West Gao Hills with special emphasis on supply-demand gap of agricultural labour. The West Garo Hills district has shown the highest number of households who were issued jobcards, who have demanded employment and who were provided employment during the study period in Meghalaya. The study has revealed a negative rate of growth of hired labour and total labour engaged in agriculture since the start of MGNREGA and a positive CAGR regarding supply-demand gap of hired agricultural labour (5.4% for male and 2.93% for female agricultural labourers). Thus, the farmers are facing severe problems in terms of the availability of agricultural labour and this may show a negative impact on agricultural production and food security in future.

Key words: MGNREGA, Labour supply-demand gap, Agricultural labour, Meghalaya, North-Eastern states

Reduction in Supply of Agricultural Labour in India

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The paper has studied the impact of reduction in supply of agricultural labour in Manipur valley during 2009-10. The scarcity of labour has been noted during transplantation and harvesting of rice, the main crop of the state. Due to the non-availability of labour in the Thoubal district, there were cases of yield reduction. The main reason identified for the reduction in supply of agricultural labourers was their engagement under MGNREGA works. Some of the families were also engaged in construction works and other non-agricultural jobs like village defence force, private security services, tiny traders, etc.

Key words: MGNREGA, Labour supply, Agricultural labour, Paddy

Shifting Scenario of Labour Use in Paddy Cultivation in Kerala

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A lion's share of cost in agricultural production goes to labour. For labour-intensive crops like rice, wages alone contribute almost 40-50 per cent of the total cost of production. In response to the shrinking labour supply, agricultural production system has adopted various adaptive strategies. These include cropping pattern shifts to less labour-intensive crops, farm mechanization and use of chemicals. This study has analysed the changes in supply of labour and the adaptive strategies in a unique rice production system in Kerala. The results have shown a steady decline in the use of human and animal labour and the resultant substitution with machine power and chemicals in paddy production. Chemical weed control practices have substituted a sizeable women labour employment. The study has suggested that profitable farming can be attained only through the right mixing of hydrology, biology and mechanical technology.

Key words: Labour use, Farm mechanization, Labour supply, Paddy cultivation

Some Issues of MGNREGS: Review of North-Eastern States of India with Special Reference to Meghalaya

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The Meghalaya Rural Employment Guarantee Scheme was notified on 28th July 2006, following the implementation of MGNREGA. This paper has studied the progress of the scheme in North-Eastern states of India, especially Meghalaya. The scheme faces severe criticism on the ground of its potential to divert the labour away from agriculture and thus affecting the cost of production. Only 4 per cent administrative cost is too less for the remote hilly areas. Moreover, absence of panchayats in Meghalaya has made the implementation of the scheme difficult. The study has suggested that close vigilance is required to see that MGNREGA does not become just another of the plethora of poverty alleviation schemes that India has since Independence.

Key words: MGNREGA, Labour shift, Meghalaya, North-Eastern states

Migration: A Dominant Livelihood Strategy — A Case Study of Two Districts in Assam

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The livelihood strategies of rural and urban Assam have been analyzed with emphasis on the importance of migration in sustaining livelihoods. The analysis has been carried by qualitative method using data collected through random sample survey technique. It has tried to focus on how different categories of population by sex and by age have taken up migration as a way of living. Under the scenario of declining landholding-sizes, forests, rise in prices of inputs, reducing profit margins coupled with climatic changes, household economy is left with the only option of out-migration. The study has also looked into the livelihood of women and children who are left behind in the villages after the out-migration of male members. The study has listed some suggestions to overcome the problems in livelihood of rural and urban areas. These include development of horticulture, food processing units, handlooms and textile sector, development of livestock-farming, fisheries, poultry, silkworm breeding, etc. and increasing access to credit and market information. Organization of trainings, including for vocational courses would help in skill development of the younger generation.

Key words: Migration, Livelihood strategy, Assam

Impact of MGNREGS on Labour Supply in the Agriculture Sector of Wayanad District, Kerala

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The study has explored the impact of MGNREGS on the labour supply in the agricultural sector of the agrarian district Wayanad in Kerala. The study conducted using primary and secondary data, has found that MGNREGS did have an impact on the agricultural sector at the time of its introduction, and does have a role in the hike in the labour wages. The MGNREGS wage acts as a standard minimum wage, keeping the labour market wage high. But, it is not really responsible for the movement of labour from the agricultural sector today. The Scheme has been found effective in rural poverty alleviation and women empowerment. It was also found that neighbourhood help groups (NHGs) like *Kudumbasree* have played a major role in the success of MGNREGS in the Wayanad district. The study has outlined some suggestions also for the effective implementation of MGNREGS Schemes.

Key words: MGNREGS, Agricultural labour supply, Women empowerment, NHGs, Wayanad district

Estimating Labour Demand Functions and Supply Response of Dairy Farms in Tamil Nadu

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The rise in cost of inputs and prices of milk have put upward pressure on the cost and price for dairy farms which results in supply distortion and widen the demand-supply gap. Since dairying is practised as a subsidiary occupation, it is important to study the relative changes in factor and product prices to assess utilization of inputs as well as stabilization of milk supply. The present study has analyzed the responsiveness of milk supply with respect to factor and product prices in the Tamil Nadu state. Normalized restricted quadratic profit function has been used to analyze the data. The own price elasticities of variable 'inputs' have been found negative for green fodder (-0.4974), dry fodder (-0.1307), concentrate (-1.5858) and human labour demand (-0.5078). Higher magnitude of own price elasticities than cross price elasticities implies that milk producers are more responsive to own price of inputs. The higher magnitude of concentrate and labour demand with respect to milk price has indicated that changes in prices of these inputs are significantly affecting the milk supply. The price instruments have been found to have more impact during flush season than lean season.

Key words: Labour demand, Dairy farms, Labour supply, Tamil Nadu

Implementation of MGNREGA and Livelihood Security of Rural Households in Maharashtra: A Region-wise Analysis

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The paper has evaluated the implementation of MGNREGA in the state of Maharashtra in terms of coverage of households, employment guaranteed, works undertaken, strengths, bottlenecks and strategies for further strengthening the programme. The scheme has been reported successful in terms of asset creation, watershed development, prevention of draughts, large-scale administration of rural public works, reduction in large-scale migration and coverage of weaker sections of the society. However, the major problem relates to the employment generation as the person-days generated and the number households provided 100 days of employment are quite low in almost all the districts of Maharashtra. In Maharashtra, only 34 per cent households registered under MGNREGA have received job cards, which is quite a low proportion. The wages offered under MGNREGA are low *vis-à-vis* market wage rates in several districts of the state. The other problems relating to wages encompass lack of information on the part of workers about wage rates for different kinds of work in different types of terrain, lack of their bargaining power, fudging of muster rolls leading to low wage payment, difficulty in understanding the mode of payment-mix of cash and kind, as prescribed in Maharashtra, etc. However, MGNREGA has to do a lot of catching to make its presence felt in different parts of the country. The linking of employment guarantee schemes with other schemes of public works will certainly improve skill levels among workers, though this will require improved levels of coordination in the public sector.

Key words: MGNREGA, Livelihood security, Maharashtra

Impact of Mahatma Gandhi National Rural Employment Guarantee Scheme on Reducing Rural Poverty

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The impact of MGNREGS on reducing rural poverty has been reviewed. It is reported that under MGNREGS in 2007-08, about 3.39 crore households were provided employment and 143.5 crore personday employment was generated in 330 districts. In 2008-09 (up to July), 253 crore households were provided employment and 85.3 crore persondays were generated. The scheme has enhanced wage earnings, leading to strengthening of the livelihood resource-base of the rural poor in India. The programme has depicted high work participation of marginalized groups like SC/ST (57%) and women (43%) in 2007-08. The paper has reported enhancement of agricultural productivity (through water harvesting, check dams, groundwater recharging, improving moisture content, check in soil erosion, micro-irrigation, etc.), stemming of distress migration, increased access to markets, supplementation of income and empowerment of women as a result of implementation of MGNREGS. The paper has reported some challenges/shortfalls in the implementation of MGNREGS; these include delay in distribution of jobcards, presence of contractors, delay in payments, improper accounting of labour days, etc.

Key words: MGNREGS, Rural poverty, Rural poverty reduction, Weaknesses of MGNREGA

Farm Labour Migration after the Implementation of MGNREGA in Gulbarga District, Karnataka

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The study has assessed the farm labour migration in the Gulbarga district of Karnataka based on the primary data obtained from 120 samples farmers belonging to five village panchayats. It has been observed that in the MGNREGA-implemented villages, the extent of migration of male labourers has been considerably higher (19.7%) in comparison with female labourers (12.5%). The wage rate received by women in the market has been found to be less (₹ 80/day) than the wage rates under MGNREGA works (₹ 100/day) while the market wage rate of male was higher (₹ 145/day) than the wage rate under the scheme. The majority of the migrant labourers from the MGNREGA-implemented villages are reported to migrate for a period of 90-180 days and work as construction workers and helpers in factories. Non-availability of jobs in the village and provision of better employment opportunities have been found as the main reasons for out-migration of labour in the MGNREGA-implemented villages in the district Gulbarga. The study has suggested some measures also to reduce distressed rural-urban migration.

Key words: Farm labour migration, MGNREGA, Farm economy, Wage differentials

Agricultural Labour Migration: Causes and Implications

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The paper has analyzed the migration pattern of agricultural labourers with associated implications by surveying the available literature. Studies have shown that job-providing capacity of agriculture has almost become saturated and real agricultural wages have not kept pace with wage rates of labour in the non-farm sector. On the other hand, rural labour and youth in particular have greater propensity to migrate which has been observed to accentuate with higher education levels, farm mechanization, improved communication system, road network, new economic opportunities arising from urbanization as well as the changing market context as economies become more globalized and liberalized. Higher extent of male migration has led to feminization and ageing/graying of farm sector as more women and elderly people are taking care of their farms in the absence of young men. The women have to take care of not only agricultural but household activities also which has increase their burden and physical drudgery. On the basis of available evidence and their subsequent evaluation, some policy suggestions have been made; these include rationalization of labour-use, mechanization with location-specific farm equipments, and capacity building of available labour with appropriate trainings. In addition farm-nonfarm linkages need to be developed to ensure livelihood security of labour in agriculture.

Key words: Agricultural labour, Labour migration, Causes of out-migration

Dynamics of Supply and Demand for Labour in Indian Agriculture

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The paper has examined the changes in the rural employment pattern covering agriculture and rural non-farm sectors and their implications for agricultural wages and farm labour availability. The study on role of MGNREGA has revealed that it has impacted both the supply and wage rates of farm labour. The landless households and women have been reported to prefer to work under MGNREGS for a higher wage rate under this scheme than in the market. The rise in wage rates has provided more income to farm labourers but has raised the cost of cultivation. The paper has suggested the mapping of unemployment season *vis-à-vis* cropping season on the local context. A bottom up planning should be undertaken for preparation of annual plan for MGNREGS emerging from the gram sabha level for mitigating the problem of farmers and labourers. The study has suggested some schemes to address the problems in the agricultural sector. These include: (i) introduction of corporate agricultural system, (ii) improvement in marketing system and introduction of social security; (iii) provision of subsidies for farmers, (iv) implementation of crop insurance system; (v) increase in farm-storage facilities; and (vi) tightening of agricultural credit system.

Key words: Demand-supply of labour, Labour gap, Sugarcane farming, Male-female labour

Agricultural Labour Shortage in Rural Areas of Bundelkhand Region, Uttar Pradesh: Observations from the Field

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Since labour is a crucial factor for agriculture, this study has been conducted in the Bundelkhand region of Uttar Pradesh to find the causes, consequences and solutions of labour shortage in agriculture, using primary data. It has been observed that an important reason for labour shortage is rural out-migration. There are some other factors also like MGNREGA which are responsible for non-availability of labour in the rural area. The main consequences of the labour shortage in agriculture are the delay in field operations, change in cropping pattern, degradation of quality of products and low market price. Leasing-out of land, no compost application in the field, higher wage rate, and more involvement of family labour in agriculture are the other consequences observed in the study. It has been found that farmers suffer because of labour shortage during peak period of agricultural operations (field preparation to harvesting to post-harvest). To overcome labour shortage in the agriculture, farmers have adopted such strategies as obtaining labour from outside the village, giving contract for farm work (theka par kaam), and share-farming.

Key words: Agricultural labour, Labour migration, MGNREGA, Bundelkhand region, Labour shortage

Change in Cropping Pattern and Displacement of the Female in Kerala

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This paper has analysed the female work participation rate in the agricultural sector for the districts of Kerala and has attempted to find answer to the questions like (i) Does the cropping pattern have an influence on the female agricultural workers, i.e. is there any relation between the female agricultural workers and the area under food crops? And (ii) What are the elements that have contributed to the decline in female work participation in the agricultural sector? The analysis has revealed that the decline in farm work participation of the female has been mainly due to the structural changes taking place in the agricultural sector. During the period 1981-2001, the economic factor was mainly responsible for the decline, followed by displacement and demographic factors. The study has suggested that structural changes in the cropping pattern from annual crops to perennial crops and technological choices should consider the social and economic impact upon both the males and the females. A differential impact upon the male and female can lead to serious imbalances between their socio-economic status and potential for development. Considering the weaker position of the female agricultural workers in possessing other income-earning skills and ability to find alternate employment, the study has revealed the importance of rural employment guarantee programmes in the wake of the displacement of the female from the agricultural sector. Agricultural policies should take into account their impact on the female agricultural workers whose income is an important source of livelihood for the family.

Key words: MGNREGA, Female workers, Cropping pattern, Kerala

Scope, Prospects and Opportunities of Employment Creation in Different Food Processing Sectors in India

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The paper is focused on the potential of employment creation in different sub-sectors of food processing in the country, which may help in improving farm productivity and promoting enterprise development of the rural India. To work out the returns to scale and elasticity of substitution for different subsectors of the unorganized food processing sector, Cobb Douglas and Constant Elasticity of Substitution function have been used. The study has revealed that the unorganized food processing sector is transforming from labour to capital-intensive structure and therefore, there is a tendency to employ more skilled labour to manage the growing capital. Most of the subsectors are facing decreasing returns to scale. The study has observed that there are two subsectors, viz. 'Production, processing and preservation of meat, fish, fruits and vegetables, and oils and fats' and 'Manufacturing of grain mill products, starches and their products, and prepared animal feeds' where substitutability of labour for capital exists, which implies that still there is scope for employment of skilled labour force. To boost food processing, two policy areas that deserve attention are development of skill and infrastructural facilities in addition to entrepreneurship.

Key words: Unorganised sector, Food processing, Skilled labour

Determinants of Female Work Participation in Agriculture: A Study in Western Uttar Pradesh

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The paper has examined the determinants of female participation in agriculture based on a field study conducted in the agriculturally-progressive region of western Uttar Pradesh. The multi-stage random sampling design has been used for the selection of 240 sample households. The statistical analysis has revealed that the female participation in agriculture is positively and significantly related with age and status of females in the family, and the cropping intensity. The extent of women participation has been found negatively but significantly related with size of family, number of working male members in the family and number of years in the school. Size of landholdings and level of income have shown a negative but insignificant influence on women participation in agriculture. Mechanization of agriculture as measured by tractors per hectare reduces the female participation in agriculture, whereas cropping intensity increases their participation in agriculture.

Key words: Female participation in agriculture, Uttar Pradesh, Women empowerment

Commercial Vegetable Nursery Raising: A Highly Remunerative and Labour Efficient Avocation

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This study has examined various costs (including on labour) and margins involved and the returns being obtained by the nursery growers of district Kullu. It has been observed that the major proportion (97.6%) of the total human labour required was comprised of family labour which accounted for 15.4 per cent of the total cost. The average annual variable cost per farm (600 m²), for growing nursery of all the crops throughout the year has been ₹ 1,57,637 and gross returns as ₹ 4,69,540, giving a B/C ratio of 2.98. To obtain the gross returns to this tune one needs to cultivate 2.76 hectares of cauliflower or 2.90 hectares of cabbage or 3.39 hectares of pea which in turn will require about 524 persondays, 557 persondays or 634 persondays of labour, respectively in comparison to 405 persondays required for nursery raising. Thus the avocation can be advocated for adoption by the farmers in the vegetable dominated belts of the state. The farmers should be trained by the agricultural extension agencies for better production techniques and efficient market strategies to help them to extend their marketing outside the state to mitigate the problem of excessive supply.

Key words: Labour-efficient avocation, Agricultural labour, Nursery raising, Himachal Pradesh

Spatial Dimensions in Labour Use and Associated Costs in Karnataka Agriculture — An Economic Analysis

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The paper has investigated spatial dimensions in labour-use and its costs by taking three major field crops — paddy, red gram and cotton — under both irrigation as well as rainfed conditions in different agro-ecological regions of Karnataka. The results have highlighted a high proportion of hired human and mechanical labourers in all the cases. This had led to a higher ratio of total labour cost to gross revenue, ranging from 0.35 in paddy to 0.53 in cotton, impinging upon the profit earning capacity of farmers seriously. Multiple linear regression analysis has pointed out that the irrigated paddy farmers incurred more costs as compared to their counterparts in the rainfed region. A positive relationship between total labour cost and holding size has been observed, highlighting the dis-economy of the scale among the crops studied. Mechanization too has not helped to reduce the labour cost in most cases. The study has concluded that the agriculture not only involves high labour cost but also has become high external labour dependent and it is a cause of concern to all associated with Indian agriculture.

Key words: Labour-use, Labour cost, Karnataka

Labour Scarcity and Selective Mechanization of Sugarcane Agriculture in Tamil Nadu

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In the recent past, labour scarcity coupled with high labour wage rate has greatly affected the irrigation and harvesting of sugarcane crop in time. It has reduced sugarcane area from 3.91 lakh ha in 2006-07 to 3.14 lakh ha in 2009-10 in Tamil Nadu. Modern sugarcane machinery and labour-savign devices were introduced on a large scale to reduce dependency on labour, and finish different farm operations in time. The study has found the mechanical operations to be superior to manual operations in sugarcane cultivation. These have reduced cost of production and have enabled efficient utilization of resources with better work output. For example, furrow method of irrigation required about 320 person-hour, whereas drip irrigation required only 30 person-hour. Similarly, manual harvesting required about 1000 person-hour and cost of ₹ 55000 to harvest 100 tonne (₹ 550/t) against ₹ 32500 (₹ 325/t) with the labour engagement for 12 person-hour/ha. The study has concluded that it has become inevitable to use modern sugarcane machinery, which is now available in the country. Although its initial cost is very high, the advantages accrued in their use are many. The study has suggested the use of drip irrigation and mechanical harvesters to mitigate the acute labour scarcity (farm operation and harvesting). It has also proposed to implement custom hiring system on co-operative basis/or owned and operated by the sugar factories for sugarcane harvesters in the state.

Key words: Labour supply-demand gap, Labour scarcity, Farm mechanization, Sugarcane

Study on Performance Appraisal of Sugar Mill Employees: A Case Study

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The state of Tamil Nadu with 37 operational sugar mills is a significant sugar-producing state of the country, contributing roughly 9-10 per cent to the national sugar production. The sugar industry has absorbed about 5 lakh rural people in the state. This paper has studied the performance appraisal system followed in a cooperative sugar mill with a sample size of 75 labourers. The study has found that the sugar mill had adopted a good appraisal system and takes the appraisal at the time of probation period and further during the carrier promotion. The study has also found that there is a gap between the actual and desired performance. Hence, it has suggested to conduct annual performance appraisal to improve the efficiency of the employees and provide training on dependability, communication skill and skill development to improve the employee's management quality.

Key words: Performance appraisal, Sugar mills, Labour efficiency, Tamil Nadu

Dynamics of Out-Migration of Agricultural Labourers: A Micro-Level Study in Two Districts of West Bengal

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The paper has studied the phenomenon of out-migration of agricultural labourers which has caused a decline in the supply of labourers to the agriculture sector, particularly during the major farm operations. This has led to an increase in the wages of agricultural labourers, which has escalated the cost of cultivation. Introduction of MGNREGA has not been successful in reducing rural out-migration from the study area. The study has also made some suggestions to improve the standard of living of migrant agricultural labourers. These include: (i) creation of employment opportunities at the local level, (ii) strengthening of non-farm sector in the study area, (iii) expansion of irrigation facilities and area under high-yielding varieties, (iv) adoption of selective mechanization and crop diversification to meet the supply-demand gap of agricultural labourers.

Key words: Agricultural labourers, Out-migration, MGNREGA, West Bengal

Adoption of Labour-saving Technologies in Paddy Transplantation — Micro-level Evidences from Punjab

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In Punjab, where agriculture is highly dependent upon migrant labour, labour scarcity, especially for paddy transportation is a major concern in the existing production system and the solution lies in direct sowing of rice (DSR) and mechanical transplanting (MT). The present study has analysed the yield, cost of production, and adoption behaviour of farmers towards these technologies by collecting primary data for the agriculture year 2009-10 from a sample of 15 farmers using DSR, 15 farmers using MT and 30 farmers (15 small and 15 large) using conventional method (CM) of transplanting. It has been observed that adoption of direct seeded rice and mechanical transplanting of paddy technologies was more by large farmers having higher off-farm income and extension contacts with the officials of PAU and State Agriculture Department than their non-adopter counterparts. In the case of DSR adopter farmers, the yield was lower and variable costs were higher due to higher expenditure on weedicides and fertilizers in both common paddy and basmati, thus yielding lower gross margins. In the case of MT adopter farmers, the yield was higher and cost was lower, resulting into high gross margins for both basmati and common paddy. The reasons behind adoption and non-adoption of these technologies have also been discussed. Considering the need of more technical knowledge for the adoption of DSR technology, the government should organize training programmes for skill development of farmers in this region.

Key words: Labour-saving technologies, Paddy cultivation, Direct seeded rice, Mechanical transplanting

Role of Collective Bargaining and Union Participation in Determining Demand and Supply of Agricultural Labour in Tamil Nadu

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Economists have traditionally identified three factors of production: land, labour and capital. In the pre-industrial society, agriculture was the major source of wealth. Production was based on rudimentary skills passed from father to son, crude farming tools, and incremental improvements made by each generation on the original and indestructible power of the soil. Capital and labour were wedded to the land, and economic power belonged to those who could control its use. With the industrial revolution, the fourth factor management became the critical economic factor. In the modern society, the role of labour as a factor of production is becoming increasingly important. The present paper has analyzed the issues in collective bargaining and union participation of agricultural labour market in Tamil Nadu. Human resources in an economy constitute a significant input in the production of goods and services. In India and Tamil Nadu, the share of cultivators has declined over the years, the share of agricultural labourers has fluctuated, but agricultural workers have declined both as a proportion and as absolute number. The wage rates have increased dramatically over 40-times between 1971 and 2009. More years of education, income from non-agricultural activities have been found to positively influence participation of labourers in labour union activities in agriculture. Collective bargaining and Union participation play a major role in wage determination of agricultural labour markets.

Key words: Demand-supply of agricultural labour, Collective bargaining, Union participation, Tamil Nadu