
Estimating Probability of Crop Choice and Area Adoption of Millets: A Farm Level Study

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The paper attempts to investigate the determinants of the choice probability of millet production and the extent area adoption under millet crops at farm-household level in India. The study relies on farm household survey data collected by the National Sample Survey Organisation for the years 2012-13. In view of the difficulty in sample selection due to non-randomisation in the selection of sub-samples of millet growers and non-growers, the functional relationship between farm household level characters and millet production is estimated using the Heckman sample selection model. The results revealed that the price of millets emerged to be the single key factor affecting the choice of millets for production and the extent of millet area adoption. Besides, expenditure on labour and irrigation, off-farm income generating activities, farm size, tenurial status, livestock rearing, education, and extension contact were found to have a significant impact on millet production at farm household level. The price of the millets and extension contact are the most positive influential factors at household level towards the increased area adoption, therefore price stabilisation through higher support price measures and creating marketing and processing facilities at village level and strengthening extension contact could help to increase the area adoption under millets and in turn retain its farmers in continuing the activity of production of millets.

Livestock Insurance Policy for Risk Aversion: Insights from Ground Level Study in India

Subhash Chand and Khyali Ram Chaudhary[†]

The study probes on the status of livestock insurance policy and ground level evidences on insurance adoption particularly in two states, viz., Haryana and Rajasthan of India. The regional coverage of livestock insurance indicate a diverse trend for different states in the country and only few states are having better coverage. Despite, lot of efforts of state government coverage of insurance could not be reached to the expected level. The main reason attributing to low coverage include lack of awareness, poor infrastructure and shortage of staff in most of the

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states related to livestock support. More than 80 per cent of the livestock insurance in India is done by the public sector insurance companies and the remaining by the private sector. The opinion of the farmers indicate that the insurance provider may diversify their products as per the needs of the farmers. The micro level study indicate the low coverage and extremely lower renewal of livestock insurance which may cast doubts on the feasibility of livestock insurance policy. The limited accessibility of extension services, accidental fire etc. are perceived as the major source of risks. Among the major risks perceived by the respondents market-related risks and institutional related support and policy related issues ranked the highest, followed by animal health and breeding. Besides the farmers have reported difficulties like higher premium, cumbersome claim settlement and lack of knowledge about risk aversion products. Therefore, a need is suggested for improving the livestock insurance scheme through reduced premiums, quick settlement of the claims, insurance service at the doorstep, awareness programme should improve the implementation mechanism and cover more risks under the scheme. Further efforts should be made to increase the insurance coverage, to equip the livestock farmers with latest knowledge about insurance, to assess their information needs pertaining to insurance and to address them which eventually be fulfilled by better extension and advisory services.

Dynamics of Nutrient Intake in Rural and Urban Sectors of Himachal Pradesh, India

Jyoti Chaudhary and H.P. Singh*

The present study attempts to analyse the shift in the per consumer unit nutrient intake in the state of Himachal Pradesh and assess the income-wise nutritional security status of the state. The dynamics of the nutritional status in Himachal Pradesh was investigated for the past two decades based on the NSSO data. The findings of the analysis indicate a transformation in the dietary intake of the households towards the high-value commodities from cereals-based dietary patterns. The consumption of cereals has declined for both rural and urban households in Himachal Pradesh. The intake of protein-rich food like pulses has increased the reason being the increased incomes and distribution of pulses in the fair price shops at subsidised rates. Over the year the milk and milk product consumption had increased considerably in the rural and marginally in the urban areas as availability of these products in the rural areas of the state. Although annual per capita consumption of non-vegetarian products was more in the urban areas among all the income categories however a significant increase in intake over the years has been witnessed for rural households which further revealed the increased living standard of the

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households in the state. Despite the decrease in the intake of cereals its importance in contribution to calorie and protein intake has remained the same over the years. However, the nutrient intake from the pulses, nuts and oilseeds increased over the years. Similarly, the contribution of the milk and milk products and egg, fish, and meat in calorie, protein, and fats supply has increased in both rural and urban households. However, the nutritional status of the state revealed that the low-income households are still lacking the intake of essential nutrients and were nutritionally insecure. However, the rich households have been getting sufficient nutrients which make them nutritionally secure. The state should focus on the policies to provide nutrient-rich food to low-income households.

Agriculture, Nutritional Status and Food Security of Farm Households in Rainfed Region of Maharashtra

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Food insecurity remains high, with around 23 per cent of the population not having access to adequate calorie intake. Micronutrient malnutrition has far-reaching consequences for public health and hinders social and economic prosperity. The incidence of hunger is more in the dry regions. Adequate nourishment in terms of quantity and quality is necessary for sustainable life. Using the farm level data from three regions of Maharashtra this paper attempts to examine the pattern of production, consumption of nutrients by cultivators and sources of supply of different nutrients. The study is based on the primary data collected from 96 cultivators from the selected centers of the comprehensive scheme spread over three regions in Maharashtra, pertaining to the agricultural year 2017-18. The analysis showed that there was dependence on plant products in diets. The diets in Maharashtra were mainly based on cereals. There were deficiencies in food consumption and nutrient intake when compared with the recommended dietary allowance. It is important to emphasise that although proportion of population was consuming less than the dietary requirements, the greatest relative gaps have been observed in meat, egg and fish consumption. Similarly, the major nutrition problem was calorie deficiency. Cereals constituted the major source of nutrients. They supplied 70 per cent of the energy, 57 per cent of proteins and 20 per cent of fats. The intake of foodstuffs varied among the size groups of farms and regions. Diet diversification increased with increase in the land holding and income. A more sustainable approach for subsistence farming households is diversification of their food production through the introduction of horticultural crops, fish and livestock that are suited to local agro-ecological conditions and can meet the macro and micronutrient requirements in the local diet. Biofortification is seen as a strategy to address the problem of malnutrition

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of underserved rural populations in a cost-effective way. There are also attempts to promote Homestead gardening to build household “nutritional self-sufficiency” through the establishment of homestead gardens, goat and poultry units which results in significantly higher intake of eggs, meat, milk, fruit and leafy vegetables. Reorienting food, nutrition and agricultural policies are very much essential to encourage diversity, nutrition, sustainability and affordability.

Nutritional Security of Cashewnut in Kanker District of Chhattisgarh

Chanchal and Bhagchandra Jain*

The paper explores the nutrition potential of cashew in Kanker district of Chhattisgarh. There are different fruit crops grown in all seven blocks of the study district, of which two blocks, namely, Kanker and Charama, were selected purposively based on maximum cashew production area. The study is based on primary data. Using multi-stage sampling method a total of 20 sample respondents were selected from these two blocks. The total establishment cost of overall farms (initial investment cost and maintenance cost) during gestation period was observed as Rs. 54103.72 per hectare of cashewnut. Per quintal cost of production of cashewnut during bearing period (5th year onward) was Rs. 1520.34 per hectare. The per hectare net profit at input cost for cashewnut was Rs. 93368.61. Benefit-cost ratio of cashewnut was 3.27 rupees on invest of one rupee, while input-output ratio of cashewnut was 4.27 rupees. Thus cashewnut cultivation emerged to be the most profitable enterprise in the study district.

Micronutrient Deficiency and Its Impact on Labour Productivity: Poverty-Nutrition Traps in Rural India

Ishita Varma and G. Mythili†

Nutritional inadequacy has been a major concern in India and till date macronutrients are the main focus of academic literature. This paper examines the situation of nutritional deprivation in India in terms of micronutrients and finds that deprivation has worsened in the period between 2004-05 and 2011-12. Next we examined the link between consumption of micronutrients and productivity. There exists a two-way relationship between nutrient intake and productivity, wherein nutrient intake enhances labour productivity but at the same time labour productivity influences earnings which impacts the ability to purchase and consume food, and thus the nutritional status. The study intends to examine the impact of consumption of five

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micronutrients- beta-carotene, thiamine, riboflavin, ascorbic acid and iron on wages of individuals engaged in labour intensive activities in rural India using an instrumental variable approach along with the Heckman two-step procedure to obtain unbiased results. The findings of the study indicate that micronutrient consumption has a significant positive impact on the earning capacity of the individuals who are involved in labour intensive activities.

Production and Its Components for Nutri-cereals and Other Crop Groups, India: 1960-61 to 2019-20

Diptimayee Jena* and Srijit Mishra**

The paper examines growth and instability of production, area and yield and decomposition of production into area, yield and interaction effects for nutri-cereals and other crop groups. The study uses India data from 1960-61 to 2019-2020 wherein three-year moving average is categorised into six decadal sub-periods, viz., 1960s: TE1962-63 to TE1970-71; 1970s: TE1970-71 to TE1980-81; 1980s: TE1980-81 to TE1990-91; 1990s: TE1990-91 to TE2000-2001; 2000s: TE2000-01 to TE2010-11 and 2010s: TE2010-11 to TE2019-20. The analysis cover six crop groups, namely, nutri-cereals (comprising ragi, jowar, bajra, and small millets), other cereals (comprising rice, wheat, maize, and barley), pulses (comprising arhar, gram, lentil, and other pulses), oilseeds (comprising groundnuts, sesamum, castor, sunflower, safflower, niger, mustard, linseed, and soyabean), fibres (comprising cotton, jute and mesta), and sugarcane, and the four millet crops. Estimates of growth, instability and decomposition using triennium ending data through a decadal analysis indicates that in India the decline in production of nutri-cereals(millets) started in the 1990s and the decline in area started in 1970s. For specific nutri-cereal crops, the decline in production started for small millets from 1960s, for ragi from 1980s, and for jowar from 1990s, but for bajra there was no decline except for a dip in 1970s. The area under each nutri-cereal crop has been declining since 1960 except for an increase for bajra in 1960s and 2000s, and for ragi in 1970s. The secular decline in production of and area under nutri-cereals is not evident for other crops groups. With the United Nations adopting India sponsored resolution to declare 2023 as the International Year of Millets, more needs to be done in India for these nutritionally beneficial and climate resilient crops that have been neglected for long.

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A Critical Study of Food Security Schemes in Meghalaya: A Difference in Difference (DID) Approach

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The paper focuses on the major schemes to supplement the food and nutritional security scenario in the state of Meghalaya. The state has been purposively selected because as per the Comprehensive National Nutrition Survey Report Meghalaya has the highest prevalence to acute malnutrition and has the highest number of stunting children in the country. Also among the different schemes in the state, two schemes viz., The Public Distribution system (PDS) which was under the umbrella of National Food Security Act (NFSA), 2013 and the Mahatma Gandhi National Employment Guarantee Act, 2005 were selected purposively based on the coverage and their contribution to combat the different issues of the food security. A total of 240 farming households comprising 80 farmers each from the three district, i.e., 57 beneficiaries and 23 non-beneficiaries from East Khasi Hills, 60 beneficiaries and 20 non-beneficiaries from West Jaintia Hills district and 63 beneficiaries and 17 non-beneficiaries at West Garo hills district were selected and personally interviewed using pre-tested schedules. The study depicted that PDS has bridged the rice availability in the state by a significant percentage of 25.86 per cent. MGNREGA on the other hand has been estimated to have increased the income in agricultural, horticultural and livestock practices by 8.47, 15.10 and 17.02 per cent, respectively. The income from this scheme has also significantly enhanced the wage, livestock and other needs in the very context by 17 per cent among the beneficiaries. The positive results of an increase in the income could be of the fact that there was an augmentation in the expenditure by almost 16.69 per cent post MGNREGA. The increase in income was relatively higher among the beneficiaries than their counterparts realising the positive impact of MGNREGA. The estimates of the Difference in Difference approach revealed that the income through MGNREGA among the beneficiary households has increased by ₹18080 per year realising that the average number of wage days estimated to be of 75 days. In terms of food expenditure which was the main crux of the study, it was estimated that ₹9245.84 was an additional entry among beneficiary households through MGNREGA wages. The distribution of PDS was unequal and irregular across the study area which is a matter of concern. The study suggested that monitoring should be done for better distribution of the commodities as per the targets planned to different beneficiaries by

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the Department of Social welfare and the Directorate of Social Welfare and Food Supplies. Whereas, PDS bridge the gap in cereal availability, the Government should also try for subsidising other food supplements for better consumption. In terms of MGNREGA although has been a successful programme in the state yet, proper scrutiny should be established so as to improve in the number of the target days according to the MGNREGA mandates (100 days).

Measuring Nutritional Deficiencies through the Lens of Vulnerability: Evidence from BIMARU States

Yashi Mishra*, Tanuj Kumar*, Jaspal Singh and Vinita Kanwal***

The paper introduces the concept of vulnerability to expected nutrient deficiency (VEND) to draw our attention to a population that might become nutrient deficient if better policies do not come into action. The study has compared the current status and vulnerability in calories, protein, and fat. Interestingly, consumption of protein and fat in the rural population of BIMARU states is near sufficient. The research demonstrates that social stratification and landholdings impact vulnerability. About 57 per cent districts in the study area are more than 80 per cent vulnerable to calorie deficiency when an average of 16.6 per cent of districts are currently deficient with near 80 per cent deficiency. The huge difference between the two figures may be due to ignorance, which might lead to a deeper reach of malnourishment. Thus, we require VEND-based policies with a focus on the targeted areas, awareness programmes, and better management of the public distribution system.

A Study of Agricultural Production and Nutrition Security in Odisha

Smrutirekha Mohanty[†] and Minati Mallick[‡]

Nutrition is essential not only for human growth and development, but also for treatment and prevention of diseases. Lack of nutrition leads to malnutrition, which is a challenge for countries across the globe. Good nutrition is dependent on availability and supply of food. In the overall growth of Odisha's economy, agriculture plays a vital role. Researches done in areas of the growing trend of agriculture production and nutritional status of Odisha are lacking the interlink between these two of a state like Odisha. An effort has been made in the present paper to connect these two vital areas of research namely the growing trend of agricultural production and nutritional status of Odisha in Odisha state through Government Programmes (TPDS,MDM and ICDS) implemented by the Government of Odisha. To analyse the trend of

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agriculture production and growth performance of food grains in Odisha secondary data are collected from Odisha Agriculture Statistics, Odisha Directorate of Agriculture and Food Production. Compound Annual Growth Rates(CAGR) have been calculated. The data on nutritional status are obtained from various reports and sites of Government of India and Odisha. It is evident that rice and wheat constitute the major component of the food basket given to beneficiaries of TPDS, MDM and ICDS. It is observed that foodgrain production has increased with maize exhibiting significant improvement in yield and production with 4.4 per cent and 6.5 per cent respectively over the study period (1990-2020). As a nutritious cereal, high in fiber, minerals, vitamins, and antioxidants, it is beneficial to the malnourished population. The study suggest the need to introduce maize in food items provided through nutritional security programmes like MDM,TPDS, and ICDS in Odisha.

An Economic Analysis of Nutritional Intake and Expenditure Pattern of Younger Adult Indians

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The study aims to explore the consumption pattern and expenditure proportion of younger Indians who are the major share of the demographic dividend. Primary data were collected with well-structured questionnaire about 290 consumers and used software SPSS, MS Excel for the purpose of analysis . The findings of the study indicate that the consumption of fruits and vegetables depends on the level of the income of the consumers. Besides, their major diet proportion has a mix of cereals, millets, pulses, dry fruits and fruit juice. Significant proportion of the respondents were consuming unhealthy food, viz., pizzas, tobacco, beverages and soft drinks. The expenditure on unhealthy food leads to nutritional insecurity and become cause of various disease outbreak. New research evidence with the impact of nutritional security, policy papers, tracking individual household progress of improving nutrition intake, enhancing the knowledge on food with the lifestyle in the form of e-learning course modules could support the country target in achieving the Sustainable Development Goal (SDG) of nutritional security.

Livestock Holdings and its determinants: A Case Study of Haryana, India

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Based on a primary survey conducted in Badheri village, Karnal District, Haryana, the study attempts to investigate livestock holdings patterns and the

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relationship between land and livestock holdings. It also investigates the determinants of the household's number of bovine animal holdings using poisson regression analysis. Despite the sector's importance in poverty alleviation, it was found that a large number of economically disadvantaged and socially backward groups face credit constraints when it comes to purchasing livestock such as cattle and buffaloes. Even if they have enough labour, a large percentage of rural households have limited access to land, resources, knowledge, technology, and markets, putting them at risk in capitalising the growing demand for milk and dairy products. Medium and large producers, on the other hand, face labour constraints despite having ample fodder. In the light of these constraints, it is worth noting that small ruminants are owned by socially backward (SC) and poor households in the survey village. The paper also addresses the importance of State policies in the growth of this industry.

Impact of National Food Security Mission (NFSM) on Pulses Consumption by Segregated Income Group in Tamil Nadu

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The study aims to analyse the impact of NFSM programme on pulses consumption at different income groups in Tamil Nadu. For the purpose of study the NSS data was collected from a large sample of individuals based on the 61st (2004-05) and 68th (2011-12) rounds of NSSO survey to estimate the elasticity of demand and to examine the consumption response of major pulses in Tamil Nadu due to changing in price and income. The major pulses such as redgram, bengalgram, greengram, blackgram, and other pulses were selected for consumption analysis. Other pulses includes horsegram, peas, masur, khesari, soyabean, etc., and pulse products such as besan, sattu, papad, badi, etc. The data relating to income of households, price of the pulses, quantity of consumption and expenditure value of the above pulses were extracted using NESSTAR software. Demand for pulses increases in accelerating trend but the supply stays inadequate because of the rising population resulting in the decline of per capita availability of pulses. The expenditure elasticity for Bengal gram and blackgram were income elastic indicating that these pulses are normal and necessary commodities irrespective of income groups in both periods. Own price elasticity estimates indicated that elasticity of redgram, bengalgram, greengram, blackgram and other pulses was found to be elastic during pre-NFSM and post-NFSM period irrespective of income categories. It indicates that these major pulses are necessary commodities in Tamil Nadu. The cross price elasticity revealed that strong substitutability was observed between bengalgram and blackgram and greengram and blackgram during pre NFSM period. In post-NFSM period,

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substitutability was observed between greengram and bengalgram and blackgram and bengalgram.

Assessing the Food Consumption Pattern and Dietary Diversity among Farmers of Tamil Nadu

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The paper aims to examine the food consumption patterns and dietary diversity using household level data in Kanyakumari and Perambalur districts of Tamil Nadu. For the purpose, the Simpson Index of Dietary Diversity (SIDDD) was used to estimate the diversity in the consumption baskets of the sample households. To better understand the variation in diversity scores across different groups of households multiple regression models was used. The quantity of food consumed by an individual has been recorded using the 7 days recall period during 2020-21. The socio-economic characteristics of the study area revealed that farm income and education is a major factor influencing dietary pattern and nutritional status of the households. The food habit showed much difference between the study areas, it was due to high nutritious foods intake by Kanyakumari district farmers when compared to Perambalur district farmers.

Hidden Hunger: Micronutrient Deficiency Review and Combating Strategies in India

Raj Jaiswal and Anil Kumar Dixit*

Science and technology have improved food production and therefore contributed to convenient food access. However, around 768 million people are calorie deficit and undernourished; 149.2 million children under five years have chronic malnutrition as their indicator of stunting; 45.4 million children under the age of five have acute malnutrition as wasted; 38.9 million children under five years are overweight; and two billion have been affected by the lack of micronutrients, in particular iodine, vitamin A, zinc and iron. At the same time, 2 billion adults suffer from overweight or obesity. SDG-2 aims to end hunger by setting objectives in 2030 alongside food security and sustainable agriculture, as eradicating hunger has not been achieved under the Millennium Development Goals. Aimed at achieving nutritional performance for women and children, the PDS, integrated children's development schemes, the midday meal schemes are key public initiatives. Similarly,

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the major government projects and many other irrigation and insurance programs aim to improve farm production. India needs around USD 729 billion (Rs 46 lakh crores) between 2015 and 2024 for its food security expenditure. A comprehensive and integrated strategy on nutrition programmes should be advocated to accelerate the reduction of all kinds of malnutrition by 2025 and the achievement of zero hunger by 2030.

Adoption of Soil Health Card for Sustainable Agriculture and Nutritional Security: Evidence from Gujarat, India

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The present study assesses the implications of adoption of Soil Health Card (SHC) Programme for sustainable agriculture and nutritional security in Gujarat. The study is based on the household survey administered on 720 farmers from 16 talukas of 11 districts covering all agro-climatic zones of Gujarat. The study was conducted following a cluster approach on a sample of 240 control farmers (no soil test) and 480 soil test farmers. The logit model was fitted to examine the determinants of adoption of SHC in the state. The analysis was conducted on three types of SHCs, viz., (i) SHCs available with the farmers (issued under SHC Programme by the Government of Gujarat (SHC-GOG), (ii) SHCs in the names of corresponding farmers uploaded on SHC portal maintained at AAU, Anand (SHC-AAU) and (iii) SHCs generated afresh at Krishi Vigyan Kendra (KVK), Kheda (SHC-KVK). The findings of the study indicate that the Soil Health Card (SHC) programme is an important and beneficial programme to the farmers. However, it has not been implemented in proper manner in the State. In view to achieve the quantity targets fixed for some period/s, quality norms were not given proper attention which defeated the main purpose of the programme. The majority of samples (about 65 per cent) were not collected by designated personnel, i.e., Gram Mitras or Gram Sevaks. The level of adoption of recommended doses by the soil test farmers was reasonably less (around 15 per cent) among the sample farmers as per SHC-GOG and was further lower (less than 10 per cent) as per SHC-KVK. The net sown area, the area under soil test plots and farmers education have significantly influenced the adoption of SHC. The low adoption of recommended doses of fertilisers by the soil test farmers was due to various constraints, viz., difficulty in understanding and following application of recommended doses as stated in Soil Health Cards, unavailability of technical advice on method and time of fertiliser application, high prices of fertilisers and unavailability of required fertilisers in adequate quantity. The quality of implementation of the programme was significantly affected due to focus on target

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achievement ignoring the quality norms, inadequate staff strength, unavailability of the required number of soil test laboratories (STLs) and mobile STLs and lack of upgradation of skills of the personnel involved in the implementation of the programme.

Food Security for below Poverty Line (BPL) population in J&K: Public Distribution System Entitlement Analysis

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Poverty and food security is a global concern. People in poverty are experiencing acute hunger due to lower purchasing power. In Jammu and Kashmir, more than one million people are living under the poverty line, i.e, their monthly expenditure is as low as Rs. 1000 and Rs. 816 in urban and rural areas respectively. The paper has tried to analyse the status of the food security scenario among the below poverty line population in J&K by examining the ability of the erstwhile State to produce food grains locally and the PDS entitlement of foodgrains. As regards the broader picture, it was found that if NFSA entitlement criteria are followed then the local production of foodgrains is sufficient to meet the local food demand. However, there is evidence from both the primary research as well as the secondary sources data that the monthly entitlement provided through PDS under NFSA is not sufficient to meet the consumption requirement of PDS beneficiaries. Each person under the BPL category has to bear additional Rs. 270 to complete the basket of minimum monthly foodgrains requirement besides the purchase of PDS foodgrains. It attributes that the insufficient PDS foodgrains entitlement has serious repercussions on the monthly income of the BPL population as they have to purchase additional foodgrains at higher prices from the market. Thus creating a higher risk of acute food insecurity among the BPL population in J&K, which could have got more exaggerated during the COVID-19 pandemic with the disruption in the supply management of essential goods including PDS across the whole country.

Changing Food Consumption Pattern Among Households in Eastern India

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The study has examined the trends in food availability, calorie intake, financial assistance to Food Corporation of India (FCI) and its impact on malnutrition. Secondary data on food production/availability, food intake, and financial assistance to FCI were obtained from the published records. The data analysis indicate per capita per annum increase in availability of food commodities in both eastern India

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and all-India levels between 2009-10 and 2018-19. The per capita increase in cereals, milk, and horticultural commodities was sharper than in pulses and edible oilseeds. Data show that increased food availability has helped in increasing intake of calories, protein and fat per capita per day in both rural and urban areas of eastern India and all-India levels between 2004-05 and 2011-12. But, the decline in calories intake in Assam, Bihar and Jharkhand, and protein in Bihar and Odisha needs attention as more vulnerable people live in these areas. The eastern region of India contributes considerable share in total production of rice and wheat, but procurement by the public system is less. The low procurement from the region increases the economic cost of providing food to a large number of targeted beneficiaries by the government. The role of foodgrains procurement and its distribution to targeted beneficiaries has been tremendous. The system has met the social objectives set by the governments. However, the recent trend in large decline in financial assistance to FCI is the most concerned aspect. The subsidy level to FCI has declined to the level of 40 per cent in 2018-19 from the level of above 90 per cent in early 2000. This policy attempt is burdening the system capacity and may defeat the purpose of social security programmes set by the country. In the long-run the system will be turning to less efficient and will disappear.

Mapping the global research on biofortification: A bibliometric Approach

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The paper tries to map the global research on biofortification using bibliometric analysis. For the purposes the bibliometric details on biofortification between 2000-2021 were extracted from the ISI Web of Science. The analysis and visualisation were done using VOS viewer and biblioshiny. Biofortification along with maize, vitamin A and carotenoids are the major research themes identified. The literature available on biofortification identified Broadley, Cakmak and White amongst the most influential authors based on the number of citations. Cornell University, University of Nottingham and Sabanci University are the top three institutes working on biofortification. Among the countries, the research articles from the USA have a higher number of citations followed by England, China and India. The findings of the study can be a good source to the researchers interested in biofortification with clear insights on current priorities and the future direction of research.

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