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AGRICULTURAL SITUATION IN INDIA

Since 1948

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The Journal is brought out by the Directorate of Economics and Statistics, Ministry of Agriculture & Farmers Welfare, it aims at presenting an integrated picture of the food and agricultural situation in india on month to month basis. The views expressed are not necessarily those of the Government of India.

Note to Contributors

Articles on the State of Indian Agriculture and allied sectors are accepted for publication in the Directorate of Economics & Statistics, Department of Agriculture, Cooperation & Farmers Welfare's monthly Journal "Agricultural Situation in India". The Journal intends to provide a forum for scholarly work and also to promote technical competence for research in agricultural and allied subjects. Good articles in Hard Copy as well as Soft Copy (agri. situation@gmail.com) in MS Word, not exceeding five thounsand words, may be sent in duplicate, typed in double space on one side of foolscap paper in Times New Roman font size 12, addressed to the Editor, Publication Division, Directorate of Economics and Statistics, M/o Agriculture & Farmers Welfare, C-1, Hutments Dara Shukoh Road, New Delhi-110 011 along with a declaration by the author(s) that the article has neither been published nor submitted for publication elsewhere. The author (s) should furnish their e-mail address, Phone No. and their permanent address only on the forwarding letter so as to maintain anonymity of the author while seeking comments of the referees on the suitability of the article for publication.

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The journal Agricultural Situation in India has been included in the UGC approved list of journals for promotion and recruitment in academic and non-academic posts.

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eands.dacnet.nic.in/publication.htm

Abbreviations used

N.A. — Not Available.

N.Q. — Not Quoted.

N.T. — No Transactions.

N.S. — No Supply/No Stock.

R. — Revised.

M.C. — Market Closed.

N.R. — Not Reported.

Neg. — Negligible.

Kg. — Kilogram.

Q. — Quintal.

(P) — Provisional.

Plus (+) indicates surplus or increase.

Minus (–) indicates deficit or decrease.

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For submission see last cover page.

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From Editor's Desk

In this issue of Agricultural Situation in India, an attempt is made to provide an overview of recent initiatives of the Government towards the development of the farm sector, a consolidated survey of agriculture, two academic articles in the field of agricultural and rural economics, and one agro-economic research study on the issues of farmers' suicide in Gujarat.

Important in the farm sector news are the Cabinet's approval for hike in MSP for copra for 2018 season and doubling of Government guarantee from Rs.9,500 to Rs.19,000 crore for procurements of pulses and oilseeds at MSP by NAFED; and the release of 2nd advance estimates of production of major crops for 2017-18. Other farm sector news covered deal with the prominent features of the Agriculture Ministry's Welfare Budget 2018-19; inauguration of the foundation stone for the first dairy plant of East Champaran district in Motihari, Bihar, by the Hon'ble Agriculture Minister, Shri Radha Mohan Singh; India-Russia Agriculture Business Summit held in New Delhi; event of the National Banana Festival in Thiruvananthapuram, Kerala, attended by Shri Singh; launching of six new user-friendly features of e-NAM platform to further facilitate the farmers and other stakeholders.

So far as the agricultural outlook is concerned, the wholesale price index of foodgrain decreased by 8.24 percent in January, 2018 as compared to that in January, 2017. The WPI of cereals, pulses and wheat showed a declining trend; while there was an improvement in case of paddy during the same period. The cumulative winter season rainfall in the country has been 63 percent lower than the long period average during 1st January to 28th February, 2018. Present live storage in 91 major water reservoirs in the country was 57.68 BCM as against 64.91 BCM of normal storage based on the average storage of last 10 years. The sowing position during Rabi 2017-18 indicates that around 99 percent of the normal area under Rabi crops has been sown.

On the academic perspective, two articles on marketing issues of banana and distributional inequality among the tribal farmers are shared in this issue. The article on marketing channels, marketing efficiency and price spread of banana in Wokha district of Nagaland investigates two marketing channels, namely, channel-I, pertaining to the direct linkage between producer and consumer, and channel-II, pertaining to the linkages between producer and consumer via wholesaler. The study finds that marketing cost is higher in channel-II as compared to channel-I. Moreover, channel-I is found to be more efficient than channel-II. The article on inequality in the distribution of assets, income and consumption expenditure among the tribal farmers in Himachal Pradesh indicates, by using Lorenz curve and Gini coefficient, that the distribution of assets is more unequal relative to that of the income and consumption expenditure. On the other hand, the assets, income and consumption expenditure are observed to be distributed more uniformly among the smaller farmers than their large counterparts.

The Agro-Economic research study shared in this issue deals with report on farmers' suicide in Gujarat, prepared by AERC, Sardar Patel University, Gujarat. According to the study, major causes of farmer suicide are indebtedness, problems related to farming, market imperfections and social problems. The policy implications of this study suggest to implement a multi-pronged approach to minimize the aftermath of drought, develop a mechanism to generate proper database on farmers' suicide, normalize the agriculture income through crop diversification and increase the availability of non-farm employment, ensure the availability of institutional credit for needy farmer in an effective manner, apply cost-effective farming techniques to reduce the production cost, and restrict the easy access and/or toxicity level of chemical pesticides and insecticides, etc.

P. C. Bodh

Farm Sector News

Salient features of Ministry of Agriculture and Farmers Welfare Budget 2018-19

The budget of 2018 clearly reflects the commitment of the government towards agriculture and farmers welfare as well as Prime Minister's pledge to double farmers income by 2022. The budgetary allocation of Agriculture and Farmers Welfare Ministry was Rs. 51,576 crore for the year 2017-18 which has been increased to Rs. 58,080 crore for this year. It is worth noting that if we compare budgetary allocation during previous regime from the year 2009 to 2014, which was Rs. 1,21,082 crore, has been increased to Rs. 2,11,694 crore during the 5 years of the present Government that is 2014-19. This is an increase of 74.5%.

The 5 year comparative sectoral budgetary allocation is as follows:

Sector	Budgetary Allocation (in crore)		Increase in %
	2009-14	2014-19	
Crop Insurance	6,182	33,162	436%
Micro Irrigation	3193	12711	298%
Soil Health Management	162	1,573	871%
Agricultural Mechanization	254	2408	846%
Sub-Mission on Agricultural Extension	3163	4046	28%
Agricultural Marketing	2666	6150	131%
Rain fed Area Development	189	1322	700%
Dairy Development	8114	10725	32%
Blue Revolution	1772	2913	64%
Agricultural Education, Research and Extension	12252	13748	12%

On one hand, our government is working towards increasing production and productivity of various agricultural crops, on the other hand, the government is putting efforts to ensure that the farmers get right value of their produce. Under the guidance of the Hon'ble Prime Minister, the following two important announcements have been made to achieve this.

Minimum Support Price (MSP) for various agricultural crops will be 1.5 times more than the input cost. With this decision, our Government has fulfilled the most important promise made in its manifesto.

Our Government has reiterated time and again that we merely don't want to declare MSP but also want to ensure that farmers receive the benefit of MSP. our Government has made unprecedented progress in the procurement of pulses, oilseeds and crops in the last 4 years.

Going further in this direction, budget also declares that NITI Aayog will develop a mechanism in coordination with Centre and State Governments to ensure that farmers get the MSP for their produce.

Government also proposes to make an institutional mechanism for export and import policy in the long run. We propose to achieve an ambitious export target of US $100 billion by the year 2022-23. For this, modern testing facilities would be set up in all mega food parks.

Source: www.pib.nic.in

The budget also proposes an institutional mechanism for price and demand forecasting. With this, farmers will be able to take timely decisions about which crop and in how much quantity it would be profitable.

This Budget embarks to bring new reforms in agriculture markets with the objective to provide right value of the yields to the farmers. In this budget, an announcement of Rs. 2000 crore for Agri Market Development Fund has been made which shows the importance of retail market in the sector of agriculture marketing. These markets have been called as GRAM (Gramin Retail Agriculture Market). Through these markets, infrastructure of 22,000 Rural Haats and 585 AMC markets will be developed.

Tomatoes, Onions, Potatoes are consumed throughout the year in the entire country. During the last 70 years, farmers and consumers have incurred loses. For the first time, a new initiative titled "Operation Green" has been taken so that farmers can get right price and products are also available to the consumers at suitable prices. For this purpose, a provision of Rs. 500 crore has been made.

To get high growth rate in agriculture sector, capital investment needs to be increased. By continuing the reforms made in the last 2 budgetary years, a provision of Rs. 10,000 crore has been made in this budget for Fisheries and Aquacultures Infrastructure Development Fund and Animal Husbandry Infrastructure Development Fund. Through this, State Governments, Cooperatives and individual investors will get loans at cheap rates for fisheries and animal husbandry infrastructure. This will help to speed up the pace of construction of fish landing centres, cold storages, ice plants, transport facilities, processing units and hatcheries etc. Providing timely loan to the farmers is also very important. For this, agriculture credit which was Rs. 10 lakh crores during last year has been increased to Rs. 11 lakh crore this year. This credit will also be made available to those farmers who are engaged with in animal husbandry and fisheries.

With a view to increase agriculture and non-agricultural activities, this budget proposes to reinvigorate National Bamboo Mission with a fund of Rs. 1290 crore. This will not only help in the establishment of small industries but also create new employments opportunities. All FPOs which include farmer producer companies also have been exempted from income tax in the budget. Small and Marginal Farmers FPOs/FPCs will be benefitted through this initiative. On the other hand, the problem of small holdings and partition will also be addressed. A declaration of Model Land Licence Cultivator Act has also been made in this budget through which farmers doing farming on rent and sharing basis will also get the benefit of institutional loan arrangements. For this, NITI AYOG will take necessary action with the help of state governments.

In our country, resilient farming climate region for medicinal and aromatic plants farming is also done. A decision to promote such farming has been made in this budget. This will help not only the farmers but also promote small and marginal industries. A provision of Rs. 200 crore has been made in the budget for this purpose. Declaration of Organic Farming has also been made in this budget at a large scale. For successful implementation of this, cluster based farming will be promoted and linked with the markets. North East and hilly states will get benefit of this scheme. For district wise horticultural crop, cluster based farming will be promoted. For this purpose, coordination between Food Processing Ministry and Commerce Ministry will be done.

Cabinet approved hike in MSP for Copra for 2018 Season

The Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi, on 7th February, 2018, has given its approval for increase in the Minimum Support Price (MSP) for Fair Average Quality (FAQ) of "Milling Copra" to Rs.7500/- per quintal for 2018 season from Rs. 6500/-per quintal in 2017. The MSP for FAQ of "Ball Copra" has been increased to Rs.7750/- per quintal for 2018 season from Rs. 6785/- per quintal in 2017.

The MSP of Copra is expected to ensure appropriate minimum prices to the farmers and step up investment in Coconut cultivation and thereby production and productivity in the country. The approval is based on recommendations of Commission for Agricultural Costs and Prices (CACP). CACP, an expert body, which takes into account the cost of production, trends in the domestic and international prices of edible oils, overall demand and supply of copra and coconut oil, cost of processing of copra into coconut oil and the likely impact of the recommended MSPs on

consumers, while recommending the MSPs.

The National Agricultural Cooperative Marketing Federation of India Limited (NAFED) and National Cooperative Consumer Federation of India Limited (NCCF) would continue to act as Central Nodal Agencies to undertake price support operations at the Minimum Support Prices in the Coconut growing states.

Union Agriculture Minister Shri Radha Mohan Singh Laid Foundation Stone for the First Dairy Plant of East Champaran District in Motihari.

The Union Minister for Agriculture and Farmers Welfare, Shri Radha Mohan Singh, on 13th February, 2018, laid the foundation stone for the first dairy plant in Motihari of East Champaran District. Addressing the gathering, Shri Singh said that India has reached such a stage that it is providing opportunities galore for the entrepreneurs at the international level. Agriculture Minister said that the growth in the dairy sector is a result of the initiatives taken by the Government by implementing various schemes to increase productivity of milch animals. Shri Singh said that India is the prime producer of milk and has been holding the number one position globally over the past two decades. Milk production, which was around 17 - 22 million tonnes in the 1960s, has increased to 165.4 million tonnes in 2016-17. During the year 2016-17, milk production increased by 20.12% as compared to 2013-14.

Shri Singh further said that the Per Capita availability of milk grew by 15.6% during the year 2016-17 taking it to 355 grams from 307 grams in 2013-14. Likewise, the income of the dairy farmers grew by 23.77% during 2014-17 as compared to 2011-14. In the last three years, milk production in India grew by 6.3% every year thus surpassing the annual global growth rate of 2.1%. Agriculture Minister also said that dairy farming has become a source of livelihood and food security at the rural level, especially for landless and marginal farmers. About 80 million farmers are connected with the dairy business and they rear 80% of the total milch cattle.

The Department of Animal Husbandry, Dairying & Fisheries has initiated a number of schemes with the objective of doubling the dairy farmers' income in line with Hon'ble Prime Minister's mission to double farmers' income by the 75th anniversary of India's independence (the year 2022). In this direction, dairy farmers' income could be raised in two ways – first, by increasing milk production by improving their productivity and second, through raising the price of raw milk per kilogram.

Shri Singh said that for the first time in the country, Rashtriya Gokul Mission was launched in December 2014 for the conservation and promotion of the indigenous breeds. Under the scheme, so far Rs.1350 crore have been approved for the proposals from 28 states and Rs.503 crore have already been released for the same. The Agriculture Minister said establishing Gokul Grams is one of the components of the Rashtriya Gokul Mission. Gokul Grams will act as a centre for the development of the indigenous species and it will also supply animals to the farmers for breeding. Currently, 18 Gokul Grams in 12 different states are being established. Apart from this, the Government is undertaking the establishment of two National Kamdhenu Breeding Centres for the conservation and development of indigenous bovine breeds in Chintaladevi, Nellore in the Southern region and in Itarsi, Hoshangabad, in the Northern region. Out of the two, Chintaladevi Centre in Andhra Pradesh is complete. Under this scheme, 41 bovine breeds and 13 buffaloes will be preserved.

The Minister said that in November 2016 we have also started National Mission on Bovine Productivity Scheme under Rashtriya Gokul Mission with an allocation of Rs.825 crores. The aim is to accelerate milk production and productivity and to also make the milk production more profitable. Meanwhile, Pashu Sanjivn component is identifying 9 crore milch animals through UID, and the government has already sanctioned funds for this scheme. The scheme also includes the provision of providing 'Nakul Swasthya Patra' to all these animals.

Shri Gajender Singh Shekhawat addressed at the India-Russia Agriculture Business Summit in New Delhi

As a part of the country-wide year-long celebration of India-Russia Diplomatic Relations, since April 2017, the Ministry of Agriculture & Farmers Welfare organised two major events, an India-Russia Agriculture Business Summit held on 13th February, 2018, in New Delhi and celebration of 70 years of Agricultural Relationship held in Suratgarh, Rajasthan on 14th February 2018.

Shri Gajender Singh Shekhawat, Union Minister of State for Agriculture and Mr Sergey Beletskiy, Deputy Minister, Ministry of Agriculture, Russia addressed the India-Russia Agriculture Business Summit 2018, held at PUSA, New Delhi. Several business houses and leaders of business associations of both countries, working in agriculture sector attended the event. This would strengthen exchange of expertise to further business ties between the two countries.

Apart from presentation by both countries that highlighted the agricultural trade opportunities, there was intense discussion in 4 theme sessions on potential areas of collaboration and trade in the fields of agriculture machinery; sanitary and phytosanitary measures (both plants and animals); agriculture education and biotechnology; fishery and sea products (including feeding, care and processing); and confectioner's/baker's, dry fruits and coconut products. The discussions were facilitated by officers of Ministry of Agriculture & Farmers Welfare and Ministry of Food Processing Industries.

The Russian and Indian delegations visited Central State Farm (CSF) in Suratgarh, Rajasthan on 14.2.2018, which was set up in 1956 with assistance from erstwhile USSR. Union Minister of State for Agriculture & Farmers Welfare and Deputy Minister of Russia inaugurated Russian Machinery Museum, address a gathering of farmers in which the veterans of the farm was facilitated, and also visited Cattle Breeding Centre. Russian scientists helped in laying the foundation of agriculture in the deserts of Thar, which brought about a change in the agriculture farming in nearby areas including fringe area of Punjab.

The Ministry is Constantly working to Achieve the Goal of Doubling Farmers' Income by 2022: The Union Agriculture Minister

Prime Minister has set a target to double farmers' income by 2022 and the Ministry is constantly working to achieve this goal. This was stated by Hon'ble Agriculture and Farmers Welfare Minister, Shri Radha Mohan Singh, on 15th February, 2018, while addressing farmers at the three-day Regional Agriculture Fair (RAF) for Southern Region in Port Blair.

The Hon'ble Minister said that the Ministry has outlined a new program to provide necessary technical and agricultural related information to the farmers. Under this scheme, Agriculture Fairs are being organized in all the five regions of the country. He said, for the first time, this fair is being organized in the southern region of Andaman and Nicobar Islands, which shows this government's commitment towards the development of the island. Considering the limited resources on the Island, ICAR-CIARI was established on June 23, 1978, by merging different Regional Research Stations of the ICAR Institutes with an aim to make the farmers self-reliant. This institute caters to various needs of agricultural research and development and is willing to do various innovative research works to increase productivity and product quality of crops, horticulture products, livestock, and fishery.

Shri Singh said during 2016, CIARI activities have been extended to Lakshadweep Islands by bringing Krishi Vigyan Kendra under its flagship. From April 2017 onwards, CIARI is running its regional centre at Minicoy islands, Lakshadweep. He said he is happy to see farmers from Lakshadweep at the fair. The Hon'ble minister said, besides tourism, agriculture is contributing to the livelihoods of people in the region. CIARI is entrusted with the task of developing technologies to promote agriculture and crops that are more productive for farmers. Shri Singh further added that the institute has made several significant achievements during the past four decades of its service despite several constraints including its remote location in islands. Appreciating the development work by the Andaman & Nicobar Administration, he said that the administration and CIARI are working in tandem and this coordination will be beneficial for the farmers.

Earlier in the day, Agriculture Minister participated in the Organic Farming Conference in Port Blair. On this occasion, he said that 22.5 lakh hectares of land has been brought under organic farming through various schemes so far and out of them, Paramparagat KrishiVikasYojana (PKVY) and Organic Value Chain are important schemes. The Minister also said that the Ministry launched PKVY to promote organic farming in cluster mode. Under the scheme, farmers are given Rs 50,000 per hectare for the 3-year turnaround time for organic farming, PGS certification, packaging, branding, and marketing. During the year 2015-16, 10,000 clusters were formed and 2-lakh hectare area was brought under organic farming in different parts of

the country.

The Minister said he was happy to be in Port Blair at the ICAR- CIARI and sharing information related to organic farming with the stakeholders. He said that small and marginal farmers, who cannot bear the agricultural production cost, may consider organic farming, which involves low cost and high profit. Andaman Nicobar islands are suitable for organic farming and it is gradually adopting organic farming (321 hectares).

Union Agriculture & Farmers Welfare Minister, Shri Radha Mohan Singh addressed the National Banana Festival, 2018 held in Thiruvananthapuram, Kerala

The Union Agriculture & Farmers Welfare Minister, Shri Radha Mohan Singh, addressed at the National Banana Festival, 2018, held in Thiruvananthapuram, Kerala on 17th February, 2018. Text of Shri Radha Mohan Singh's speech is following:-

Banana and plantains are the major staple foods for millions of people in tropical developing countries, have a history of over 4000 years, dating back to 2020 BC. Banana is native of India and is widely grown in tropical, sub-tropical, and coastal region of India. In the recent years, there is a growing recognition of the importance of banana and plantains as household food, nutritional security, as well as social security in many parts of the world. In India, there has been a significant increase in terms of area, production, and productivity in the last two decades.

Today, banana is cultivated in more than 130 countries across the world in 5.00 million hectare and yielding 103.63 million tonnes of banana and plantain (FAO, 2013). India is the largest producer of banana in the world with 29.7 million tonnes from an area of 0.88 million hectares with a productivity of 37 MT/ha. Although India accounts for only 15.5per cent in area, its contribution in the world's production is 25.58 per cent. Thus, banana has emerged as one of the important fruit crops, which is easily available to common man. It is predicted that with ever-increasing demand, 60 million tonnes of banana will be needed to meet the domestic demand in 2050. There is also a considerable scope for the export of banana and its products, which further enhances the demand. Bananas and plantains are continuously showing an impressive growth worldwide. It's year round availability, affordability, taste, nutritional and medicinal value makes it the favourite fruit among every section of the society with good export potential.

World banana production is concentrated in Africa, Asia, the Caribbean and Latin America because of the climatic conditions. Production and productivity of banana has considerably increased with expansion of area due to interventions under Mission for Integrated Development of Horticulture, which promotes adoption of High Density Planting, use of Tissue Culture Plants and other interventions in Post-Harvest Management (PHM) infrastructure. So far, 11,809 pack houses and 34.92 lakh MT of cold storage capacity have been created in the last three and half years. The growing awareness of banana for its nutrition, high economic returns, and export potential, area under banana cultivation has increased. In three and half years, Banana Producing Farmers have benefitted from Mission for Integrated Development of Horticulture (MIDH) scheme initiated by the present Government.

Due to urbanization and erosion of wild bananas in their natural habitat, there is a need to conserve the available genetic diversity. Musa wild species and its allied species form an important source of resistant genes for biotic and abiotic stresses. Biotic and abiotic stresses are the main constraints, which reduces the productivity considerably. Production constraints also vary from region to region, however, many problems are similar in nature. This complexity of problems calls for basic, strategic, and adaptive research to maximize the productivity.

Banana and plantain breeding has its inherent complex problems and recent biotechnology tools/ approaches help in achieving the projected results, and the real impact can be expected in the near future. With a production target of 60 million tonnes in 2050, the major production constraints like increasing input costs such as fertilizers, irrigation and management of insect pests and diseases like TR4 are being done to maximize the production. New initiatives are being taken to give a fillip to the areas like genetic engineering, molecular breeding, organic farming, integrated pest and disease management, physiological, bio-chemical and genetic basis for biotic and abiotic stress management, adoption of post-harvest technology, use of ripening chamber and value addition from waste to wealth. I am sure that deliberations made in the conference will form

the base for strengthening research and opening up new opportunities to fulfil its mandate in banana research and address the future challenges for higher growth and development, so that the goal of doubling of farmer's income could be achieved.

Union Agriculture Minister, Shri Radha Mohan Singh, Launched Six New user Friendly Features of National Agriculture Market (e-NAM) Platform

The Union Minister of Agriculture & Farmers' Welfare, Shri Radha Mohan Singh, launched six new features of National Agriculture Market (e-NAM) Platform on 21st February, 2018, to make it more users friendly.Shri Gajendra Singh Shekhawat, Union Minister of State for Agriculture, was also present at the event. e-NAM is one of the major and important flagship schemes of the Government of India which is being implemented by the Ministry of Agriculture & Farmers' Welfare with the objective of providing competitive and remunerative price to farmers for their produce through online competitive bidding process.

Shri Singh said that it is the dream of Hon'ble Prime Minister, Shri Narendra Modi, to double farmers' income by 2022 and that farmers should become part of mainstream development. He said that the objective was to bring more transparency, competition and provide remunerative prices to farmers. Keeping in view the need of making marketing of commodities easier for farmers, e-NAM was envisioned and launched in 21 Mandis on 14th April 2016 which has now reached 479 Mandis across 14 states and 1 Union Territory. e-NAM website is now available in eight different languages (Hindi, English, Gujarati, Marathi, Tamil, Telugu, Bengali and Odia) while the live trading facility is available in six different language (Hindi, English, Bengali, Gujarati, Marathi & Telugu).

The Minister said that the agriculture ministry is now strengthening e-NAM platform with new and user-friendly features by rolling out MIS Dashboard for better analysis, BHIM payment facility by traders, mobile payment facility by traders, enhanced features on Mobile App such as gate entry and payment through mobile, integration of farmer's database, eLearning module in e-NAM website etc.

1. e-NAM Mobile App:

Mobile app is being enhanced in multi-dimension so that the entire operation for farmers and traders can be user friendly. Mobile app has been made multilingual. Now, the Mandi operators can carry out one of the critical operation of Gate Entry directly from e-NAM Mobile App. This will also facilitate the farmers to do advance Gate Entry on Mobile app which in turn will reduce a lot of time for farmers coming in the Mandi and will bring huge efficiency and facilitate smooth arrival recording at the Gate. A new feature has been introduced for farmers where they can see the progress of their lot being traded and also real time bidding progress of price will be visible to farmers on Mobile App.

During the trade, facility of viewing the assaying certificate is made available to traders on the mobile app. Now, online payment by trader (buyer) can also be done from e-NAM Mobile App through debit card and net banking. This will help buyers to transfer the payment directly through the App and make it easier for traders in online payment to farmers. Also, SMS alert to farmer on receiving payment in their bank account will be sent thereby helping farmers in getting information of payment receipt.

2. BHIM Payment Facility :

Currently, e-NAM portal facilitates direct online payment to farmers through RTGS/NEFT, Debit Card and Internet Banking. Facilitation of Unified Payment Interface (UPI) through BHIM is another milestone in easing out payment to farmers which will also reduce the payment realization time from buyers' account to the pool account and in turn disbursal to farmers.

3. New and Improved Website with eLearning Module:

A new website has been developed with improved and more informative features like live status of markets of e-NAM based on gate entry, latest information on events, dynamic training calendar, etc. Also e-Learning module in Hindi language has been designed and incorporated in the website so that various stake holders can learn online about how to operate the system and continuously get trained on the system at their convenience. Currently, the module is available in Hindi.

4. MIS Dashboard:

MIS Dashboard based on Business intelligence will provide a greater insight into the performance of each Mandi in terms of arrival and trade. This will help the Mandi Board officials and APMC Secretary to compare the performance of each Mandi on daily, weekly, monthly/quarterly and Year-on-Year Basis. This will also enable officials and Mandi Secretary in doing actual trade analysis from commodity level to State level operation. This will also be beneficial for the Mandi Board and Mandi Secretary in planning and coordinating their operation post historical analysis.

5. Grievance Redressal Management System for Mandi Secretaries:

This system will help Mandi Secretary to raise technology issues related to portal/ software and its operation and also track the status of redressal of their query online.

6. Integration with Farmer Database:

e-NAM has been integrated with Central Farmer Database so that the registration process becomes easier and Identification of farmers can be done easily on arrival at the Mandi Gate which will increase the efficiency and reduce queue time. This will help in managing the load at the Gate more efficiently during peak time in Rabi and Kharif season and reduce waiting time for farmers at the entry gate.

Department of Agriculture, Cooperation and Farmers Welfare released 2nd Advance Estimates of Production of Major Crops for 2017-18

The 2nd Advance Estimates of production of major crops for 2017-18 have been released by the Department of Agriculture, Cooperation and Farmers Welfare on 27th February, 2018, in New Delhi. The assessment of production of different crops is based on the feedback received from States and validated with information available from other sources. The estimated production of various crops as per the 2nd Advance Estimates for 2017-18 vis-à-vis the comparative estimates for the years 2003-04 onwards is given below.

- Foodgrains – 277.49 million tonnes (record)
  - Rice – 111.01 million tonnes (record)
  - Wheat – 97.11 million tonnes
  - Coarse Cereals – 45.42 million tonnes (record)
  - Maize – 27.14 million tonnes (record)
  - Pulses – 23.95 million tonnes (record)
  - Gram – 11.10 million tonnes (record)
  - Tur – 4.02 million tonnes
  - Urad – 3.23 million tonnes (record)
- Oilseeds – 29.88 million tonnes
  - Soyabean – 11.39 million tonnes
  - Groundnut – 8.22 million tonnes
  - Castorseed – 1.50 million tonnes
- Cotton – 33.92 million bales (of 170 kg each)
- Sugarcane – 353.23 million tonnes

As a result of near normal rainfall during monsoon 2017 and various policy initiatives taken by the Government, country has witnessed record foodgrains production in the current year. As per Second Advance Estimates for 2017-18, total foodgrains production in the country is estimated at 277.49 million tonnes which is higher by 2.37 million tonnes than the previous record production of foodgrains of 275.11 million tonnes achieved during 2016-2017.

Production of rice has increased by 1.31 million tonnes than the production of 109.70 million tonnes during 2016-17. It is also higher by 4.71 million tonnes than the five years' average production of 106.29 million tonnes.

Production of wheat estimated at 97.11 million tones which is lower by 1.40 million tonnes as compared to record wheat production of 98.51 million tonnes achieved during 2016-17. However, the production of wheat during 2017-18 is higher by 3.77 million tonnes than the average wheat production.

Production of coarse cereals estimated at record 45.42 million tonnes is higher than the average production by 3.72 million tonnes. Further, it is also higher by 1.65 million tonnes as compared to their production of 43.77 million tonnes achieved during 2016-17.

Total pulses production during 2017-18 is estimated at record 23.95 million tonnes which is higher by 0.82 million tonnes than the previous year's production of 23.13 million tonnes. Moreover, the production of pulses during 2017-18 is higher than the Five years 'average production by 5.10 million tonnes.

Total oilseeds production in the country during 2017-18 is estimated at 29.88 million tonnes which is lower by 1.39 million tonnes than the production of 31.28 million tonnes during 2016-17. However, the production of oilseeds during 2017-18 is marginally higher by 0.34 million tonnes than the average oilseeds production.

With a significant increase by 47.16 million tonnes over 2016-17, total production of sugarcane in the country during 2017-18 is estimated at 353.23 million tonnes. The production of sugarcane during 2017-18 is also higher by 11.19 million tonnes than the average sugarcane production of 342.04 million tonnes.

Production of cotton estimated at 33.92 million bales (of 170 kg each) is higher than the previous year's production of 32.58 million bales. Further, it is also higher by 0.41 million bales than its average production of 33.50 million bales.
Production of jute & mesta estimated at 10.51 million bales (of 180 kg each) is lower than their production during the 2016-17.

The Union Minister of Agriculture and Farmers' Welfare Congratulated Indian Council of Agricultural Research for Completing 88 Glorious Years

The Union Minister of Agriculture and Farmers Welfare, Shri Radha Mohan Singh, on 28th February, 2018, addressed the 89thAnnual General Meeting (AGM) of Indian Council of Agricultural Research (ICAR) society at National Agricultural Science Complex (NASC) in Pusa, New Delhi. Shri Singh congratulated ICAR for completing 88 glorious years and lauded the institution for having braved the odds despite challenging circumstances to achieve notable success in improving agriculture system and enhancing agriculture production and productivity in the country thereby increasing income of the farmers, especially the small and marginal farmers.

The minister said that ICAR has taken important steps towards fulfilling Prime Minister's vision of doubling farmer's income by 2022. The ICAR has also done notable work in the field of developing new technologies, integrated farming systems, institution building, human resource, diversification in agriculture, creating new opportunities and developing new sources of information. The ICAR is committed to making Indian agriculture more sustainable and beneficial.

Shri Singh said that the government is committed in its effort to double farmer's income by 2022 and is working for the betterment of the sector and farmers. He said his entire focus is on farmers' welfare and Budget 2018 reiterates the government's emphasis on holistic development of agriculture sector. For the first time in this budget, the rural outlay has increased by 30%. Agriculture minister asserted that several policy initiatives of the government in the last three years have resulted in record production of food grains in the country in the current year. In 2017-18, production of food grain was 275.68 million tones as compared to 265.04 million tonnes in 2013-14, showing a significant rise of 10.64 million tonnes (or about 4 percent). The food grain production in the current year is, in fact, 19 million tonnes more than the average food grain production between 2011-12 and 2015-16.

The Minister also expressed happiness over record production in horticulture in 2016-17 at 305 million tonnes, which is 4.8% more than the previous year. The fruit production has crossed 93 million tonnes and vegetable production has reached 178 million tonnes. He applauded the special contribution of ICAR in achieving this milestone and said that he is very proud of his peasant brothers and scientists for having taken India to the top slot in horticulture. Shri Singh said the ICAR has developed 45 IFS by including 15 agro-climatic zones to help small and marginal farmers to tide over the problems associated with climate change. This model will be replicated and taken forward through agricultural science centers spread across the country. Besides this, ICAR has also developed 623 District Level contingency schemes, which were certified and skill development programs for 40.9 lakh farmers were organized.

In order to assist the Government's "Soil Health Card" initiative, minilabs were developed for soil testing. ICAR, through its agriculture science centres spread across the country, have displayed climate friendly techniques in 29 States. A total of 42 biological agricultural technologies were developed by ICAR which were tested and further improved. ICAR has also developed 42 organic farming techniques, which were tested and are being further improved. In order to take scientific knowledge to the farmers, the Government has started a program called Mera Gaon Mera Gaurav,

in which five villages are adopted by a group of four scientists who impart agricultural consultation and information to farmers. A total of 1226 teams have been formed this year from a pool of 4774 scientists sourced from ICAR and state agriculture universities. This program has already benefitted 9,76,033 farmers and 5.346 villages.

Cabinet Approved Doubling of Government Guarantee from Rs 9,500 Crore to Rs.19,000 Crore for Procurements of Pulses and Oilseeds at MSP under Price Support Scheme by NAFED

The Cabinet Committee on Economic Affairs, chaired by Prime Minister Shri Narendra Modi, on 28th February, 2018, has approved the regularization and extension of Govt. Guarantee provided to lender Bank for providing credit limit to National Agricultural Cooperative Marketing Federation of India (NAFED) Rs.19,000 crore from earlier Rs.9,500 crore for undertaking procurement operation of pulses and oilseeds under Price Support Scheme (PSS) and to Small Farmers Agri-Business Consortium (SFAC) for Rs. 45 crore for meeting their existing liability and settlement of extant claims. These Government Guarantees are provided for a period of five years i.e., till 2021-22 by the Govt. of India and with waiver of 1% Government Guarantee fee.

As the market price of almost all pulses and oilseeds are ruling below Minimum Support Price (MSP) as notified by the Govt. of India, provision of Govt. Guarantee will help in protecting the farmers producing these commodities from making distress sales during the peak arrival period and to provide remunerative prices with a view to encourage higher investment and production and also to safeguard the interest of consumer by making available supplies at reasonable price with low cost of intermediation.

Rabi Crops Sowing Crosses 632 Lakh Hactare

As per preliminary reports received from the States, the total area sown under Rabi crops as on 2nd February 2018 stands at 632.34 lakh hectares as compared to 641.72 lakh hectare this time in 2017.

Wheat has been sown/transplanted in 300.70 lakh hectares, rice in 28.61 lakh hectares, pulses in 166.47 lakh hectares, coarse cereals in 56.27 lakh hectares and area sown under oilseeds is 80.29 lakh hectares.

The area sown so far and that sown during last year this time is as follows:

Lakh hectare

Crop	Area sown in 2017-18	Area sown in 2016-17
Wheat	300.70	317.82
Rice	28.61	24.21
Pulses	166.47	158.02
Coarse Cereals	56.27	57.23
Oilseeds	80.29	84.44
Total	**632.34**	**641.72**

General Survey of Agriculture

Trends in Foodgrain Prices

Based on wholesale Price Index (WPI) (2011-12=100), foodgrains price decreased by (-) 8.24 per cent, in January, 2018 over January 2017. During the same period, the WPI of cereals decreased by (-) 1.98 per cent, wheat by (-) 6.94 per cent and pulses by (-) 30.43 per cent, whereas the WPI of paddy increased by 4.59 per cent.

The WPI of foodgrains and pulses showed fall of (-) 0.28 per cent and (-) 5.29 per cent respectively in January, 2018 over December, 2017. During this period the WPI of cereals, paddy and wheat increased by 0.77 per cent, 1.08 per cent and 1.00 per cent, respectively.

Rainfall and Reservoir Situation

Rainfall Situation

Cumulative Winter Season rainfall for the country as a whole during the period 01st January to 28th February, 2018 has been 63% lower than the Long Period Average (LPA). Rainfall in the four broad geographical divisions of the country during the above period has been lower than LPA by 67% in North-West India, 59% in East & North East India, 58% in Central India and 43% in South Peninsula.
Out of total 36 meteorological Sub-divisions, 01 met subdivision received large excess rainfall, 02 subdivisions received normal rainfall, 32 Sub-divisions received deficient/large deficient rainfall and 01 Sub-division received no rain.

Water Storage in Major Reservoirs

Central Water Commission monitors 91 major reservoirs in the country which have total live capacity of 161.99 Billion Cubic Metre (BCM) at Full Reservoir Level (FRL). Current live storage in these reservoirs (as on 01st March, 2018) was 57.68 BCM as against 64.91 BCM on 01.03.2017 (last year) and 63.47 BCM of normal storage (average storage of last 10 years). Current year's storage is 89% of last year's storage and 91% of the normal storage.

Sowing Position during Rabi 2017-18

As per 2nd Advance Estimates 2017-18, around 99% of the normal area under rabi crops has been sown. Total area sown under Rabi crops in the country has been reported to be 619.45 lakh hectares as compared to 635.33 lakh hectares during the final estimates of 2016-17. This year's area coverage so far is lower by 15.9 lakh ha. than the area coverage during the corresponding period of last year.

Economic Growth

As per the first revised estimates of national income, consumption expenditure, savings and capital formation, released by the CSO on 31st January 2018, growth rate of GDP at constant market prices was 7.1 per cent in 2016-17 and 8.2 per cent in 2015-16. The second advance estimates of national income released on 28th February 2018, estimated the growth of GDP for the year 2017-18 to be 6.6 per cent.

The growth in Gross Value Added (GVA) at constant (2011-12) basic prices for the year 2017- 18 is expected to be 6.4 per cent (as per 2nd advance estimates). At the sectoral level, agriculture, industry and services sectors grew at the rate of 3.0 per cent, 4.8 per cent and 8.3 per cent respectively in 2017-18.

As per the quarterly estimates, the estimated growth of GDP for third quarter (October-December) 2017-18 is 7.2 per cent as compared to 6.8 per cent in the corresponding quarter of the previous year.

The share of total final consumption in GDP at current prices in 2017-18 is expected to be at 70.2 per cent, as compared to 69.9 per cent in 2016-17. The fixed investment rate (ratio of gross fixed capital formation to GDP) is expected to remain same at 28.5 per cent in 2016-17 (as per 1st revised estimate) and 2017-18 (as per 2nd advance estimate).

The saving rate (measured as a share of gross saving to GDP) for the years 2016-17 was 30.0 per cent, as compared to 31.3 per cent in 2015-16. The investment rate (measured as a share of gross capital formation to GDP) was 30.6 per cent in 2016-17, as compared to 32.3 per cent in 2015-16. 2.

Agriculture and Food Management

Rainfall

The cumulative rainfall received for the country as

a whole, during the period 1st January 2018 to 14th February 2018, has been 58 per cent below normal.

The actual rainfall received during this period has been 12 mm as against the normal at 28.8 mm. Out of the total 36 meteorological sub-divisions, 2 sub-divisions received large excess rainfall, 3 sub-divisions received excess rainfall, 2 sub-divisions received normal rainfall, 7sub-divisions received deficient rainfall, 20 sub-divisions received large deficient rainfall, and 2 sub-divisions received no rain at all.

Production of Foodgrains

As per the 1st Advance Estimates released by Ministry of Agriculture, Cooperation & Farmers Welfare on 22nd September 2017, production of kharif foodgrains during 2017-18 is estimated at 134.7 million tonnes, as compared to 138.5 million tonnes (4th Advance estimates) and 135 million tones (1st Advance estimates) in 2016-17 (Table 3).

Procurement

Procurement of rice as on 1st February 2018 during kharif marketing Season 2017-18 was 28.3 million tonnes whereas procurement of wheat during Rabi Marketing Season 2017-18 was 30.8 million tonnes (Table 4).

Off-take

The off-take of rice for all schemes during the month of December 2017 has been 28.9 lakh tonnes. This comprises 25.6 lakh tonnes under TPDS/NFSA (off-take against the allocation for the month of January, 2018) and 3.2 lakh tonnes under other schemes. In respect of wheat, the total off-take has been 22.0 lakh tonnes comprising of 17.8 lakh tonnes under TPDS/NFSA (offtake against the allocation for the month of January, 2018) and 4.2 lakh tonnes under other schemes. The cumulative offtake of foodgrains during 2017-18 is 49.2 million tonnes (Table 5).

Stocks

The total stocks of rice and wheat held by FCI as on 1st January 2018 was 52.6 million tonnes, as compared to 43.2 million tonnes as on 1st January 2017 (Table 6).

TABLES

TABLE 1: Growth of GVA at Basic Prices by Economic Activity at Constant (2011-12) Prices (per cent)

Sectors	Growth Rate (%)			Share in GVA or GDP (%)		
	2015-16 2nd RE	**2016-17 1st RE**	**2017-18 2nd AE**	**2015-16**	**2016-17 1st RE**	**2017-18 2nd AE**
Agriculture, forestry & fishing	**0.6**	**6.3**	**3.0**	**15.4**	**15.3**	**14.8**
Industry	**9.8**	**6.8**	**4.8**	**31.6**	**31.5**	**31.0**
Mining & quarrying	13.8	13.0	3.0	3.1	3.3	3.2
Manufacturing	12.8	7.9	5.1	18.1	18.2	18.0
Electricity, gas, water supply & other utility services	4.7	9.2	7.3	2.1	2.2	2.2
Construction	3.7	1.3	4.3	8.2	7.8	7.7
Services	**9.6**	**7.5**	**8.3**	**53.0**	**53.2**	**54.2**
Trade, Hotel, Transport Storage	10.3	7.2	8.3	19.0	19.0	19.3
Financial , real estate & prof services	10.9	6.0	7.2	21.9	21.7	21.8
Public Administration, defence and other services	6.1	10.7	10.1	12.2	12.6	13.0
GVA at basic prices	**8.1**	**7.1**	**6.4**	**100.0**	**100.0**	**100.0**
GDP at market prices	8.2	7.1	6.6	---	---	---

Source: Central Statistics Office (CSO), 2nd RE: Second Revised Estimates, 1st RE: First Revised Estimates, 2nd AE: Second Advance Estimates

TABLE 2: Quarter-wise Growth of GVA at Constant (2011-12) Basic Prices (per cent)

Sectors	2015-16				2016-17				2017-18		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Agriculture, forestry & fishing	**2.3**	**2.7**	**-2.3**	**1.0**	**4.3**	**5.5**	**7.5**	**7.1**	**2.7**	**2.7**	**4.1**
Industry	**7.9**	**7.6**	**10.7**	**11.0**	**8.3**	**6.8**	**7.1**	**5.0**	**0.1**	**5.9**	**6.8**
Mining & quarrying	11.3	11.4	12.0	12.3	10.5	9.1	12.1	18.8	1.8	7.1	-0.1
Manufacturing	9.7	10.9	14.8	14.2	9.9	7.7	8.1	6.1	-1.8	6.9	8.1
Electricity, gas ,water supply & other utility services	2.6	5.6	3.9	7.6	12.4	7.1	9.5	8.1	7.1	7.7	6.1
Construction	4.3	0.2	4.3	4.6	3.0	3.8	2.8	-3.9	1.5	2.8	6.8
Services	**9.3**	**10.2**	**9.4**	**9.8**	**9.4**	**7.9**	**6.5**	**6.3**	**9.6**	**7.1**	**7.7**
Trade, hotels, transport, communication and services related to broadcasting	10.5	8.5	10.4	13.1	8.9	7.2	7.5	5.5	8.4	9.3	9.0
Financial, real estate & professional **services**	10.4	13.3	10.2	8.8	10.5	8.3	2.8	1.0	8.9	6.4	6.7
Public administration, defence and Other Services	5.5	6.6	6.9	6.1	7.7	8.0	10.6	16.4	13.2	5.6	7.2
GVA at Basic Price	**7.8**	**8.4**	**7.3**	**8.7**	**8.3**	**7.2**	**6.9**	**6.0**	**5.6**	**6.2**	**6.7**
GDP at market prices	**7.8**	**8.1**	**7.1**	**9.1**	**8.1**	**7.6**	**6.8**	**6.1**	**5.7**	**6.5**	**7.2**

Source: Central Statistics Office (CSO).

TABLE 3: Production of Major Agricultural Crops (1st adv. est.)

Crops	Production (Million Tonnes)					
	2012-13	2013-14	2014-15	2015-16	2016-17 (4th AE)	2017-18 (1st AE)*
Total Foodgrains	**257.1**	**265.0**	**252.0**	**251.6**	**275.7**	**134.7**
Rice	105.2	106.7	105.5	104.4	110.2	94.5
Wheat	93.5	95.9	86.5	92.3	98.4	---
Total Coarse Cereals	40.0	43.3	42.9	38.5	44.2	31.5
Total Pulses	18.3	19.3	17.2	16.4	23.0	8.7
Total Oilseeds	30.9	32.8	27.5	25.3	32.1	20.7
Sugarcane	341.2	352.1	362.3	348.4	306.7	337.7
Cotton#	34.2	35.9	34.8	30.0	33.1	32.3

*Source: DES, DAC&FW, M/o Agriculture & Farmers Welfare. 4th AE: 4th Advance Estimates, # Million bales of 170 kgs. each. *: Only Kharif Crops.*

TABLE 4 : Procurement of Crops (Million Tonnes)

Crops	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Rice#	35.0	34.0	31.8	32.0	34.2	38.1	28.3
Wheat@	28.3	38.2	25.1	28.0	28.1	23.0	30.8
Total	**63.3**	**72.2**	**56.9**	**60.2**	**62.3**	**61.1**	**59.1**

Kharif Marketing Season (October-September), @ Rabi Marketing Season (April-March)
Note: Procurement of rice as on 01.02.2018.
Source: FCI and DFPD, M/o Consumer Affairs and Public Distribution.

TABLE 5: Offtake of Foodgrains (Million Tonnes)

Crops	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 *
Rice	32.6	29.2	30.7	31.8	32.8	28.8
Wheat	33.2	30.6	25.2	31.8	29.1	20.4
Total (Rice & Wheat)	**65.8**	**59.8**	**55.9**	**63.6**	**61.9**	**49.2**

*Source: DFPD, M/o Consumer Affairs and Public Distribution. *: upto December, 2017*

TABLE 6: Stocks of Foodgrains (Million Tonnes)

Crops	January 1, 2017	January 1, 2018
1. Rice	13.5	16.2
2. Unmilled Paddy#	24.2	25.4
3. Converted Unmilled Paddy in terms of Rice	**16.0**	**16.8**
4. Wheat	**13.7**	**19.6**
Total (Rice & Wheat)(1+3+4)	**43.2**	**52.6**

 # Since September, 2013, FCI gives separate figures for rice and unmilled paddy lying with FCI & state agencies in terms of rice.

Articles

A Study on Marketing Channels, Marketing Efficiency and Price Spread Of Banana In Wokha District of Nagaland, India

NCHUMTHUNG MURRY[1], SANJOY DAS[2], AMOD SHARMA[3] AND R. NAKHRO[3]

Abstract

A sample of 60 banana growers was selected following the multi stage stratified random sampling technique. Two Rural Development blocks viz. Wokha and Chukitong were selected and from each block 30 respondents were selected, thus making a total of 60 sample respondents. From the study ,two marketing channels of banana were identified viz. producer- consumer (Channel I) and Producer-Wholesaler- Consumer (Channel II). Pattern of disposal showed that channel I was most effective for marginal and small group of farmers where they transected 80.34 and 58.7 per cent of their marketed surplus, respectively. Whereas Channel II was most effective for medium group of farmers where they transected 61.51 per cent of their marketed surplus. Price spread analysis showed that the producers' share in consumer rupee was higher in channel I which was 95.55 per cent whereas in channel II, it was found out to be 82.91 per cent. The marketing efficiency, as calculated by shepherd's formula, was found higher in channel I which was 22.47, as compared to channel II which was 16.27. This may be because of the fact that in channel I, there is no participation of middlemen and farmers preferred to sell produce directly as they get cash immediately.

Key words: *Marketing channel, Marketing efficiency, Marketing cost, Price spread*

Introduction

Banana is an important food crop in Tropical region. Banana production alone constitutes 32 per cent of the total fruit production in India. India is one of the leading banana producers in the world. Inefficient agricultural market system leads the farmers to various exploitative trading forces resulting in a situation where the farmers are unable to get the remunerative prices for their produce. In India, banana plants are widely grown in both tropical and sub- tropical regions with considerable socio-economic and cultural importance. Banana is a very perishable fruit and hence, its marketing faces many problems such as chain of middlemen, transport, storage. Marketing management of banana is also an important activity along with production. Farmers preferred to sell their produce in the regulated markets as compared to unregulated markets such as local traders and commission agents, as it was observed that farmers would be paid immediately for their produce when sold in a regulated market. The existence of a wide price spread indicates that the farmers' income can be enhanced considerably, if the marketing. channels are shortened, so that the farmers get a higher share of what the consumers pay (Rama Rao et al., 2008). This study is useful to banana growers for knowing the importance of specific markets, their marketing cost and price spread in marketing channels preferred by them. Thus this kind of research is useful for deciding marketing place, marketing channel which give better price and returns to their produce with minimizing cost by undertaking various marketing practices. Banana is grown throughout the year and is well within the reach of common man. That is why this fruit is called "Poor man's apple". The economic importance of banana has been increasing on account of increase in domestic as well as international demand for it. Banana is one of the major fruit crops of India with a production of 28.46 MT in an area of 0.79 million hectare (National Horticultural Board, 2013-14).

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Tamil Nadu leads other states with a production share of 19.00 per cent while Maharashtra has highest productivity. Banana is also grown with rich biodiversity in NE Region of India. Maximum genetic variability of Musa acuminata and M. balbisiana occurs in NE India. M. flaviflora is localized to Manipur and Meghalaya (Asati and Yadav, 2011). Banana as a fruit is grown in all parts of Nagaland. In Nagaland, banana is cultivated in about 6,690 Ha, with an annual production of 53,900 MT. The area under banana cultivation is high in Kohima district followed by Mokochung and Wokha district, & respectively (*Directorate of Horticulture, Government of Nagaland*, 2012-13)

Keeping in view the above, the following two specific objectives were framed out :

1. To identify the marketing channels in marketing of banana and calculation of efficiency of different marketing channels in the study area, and

2. To workout the marketing cost and price spread in the marketing of banana.

Research Methodology

The study was conducted in two R.D blocks viz. Wokha and Chukitong under Wokha district of Nagaland. A sample of 60 banana growers were selected following multi stage stratified random sampling technique. In the first stage, two R.D blocks viz. Wokha and Chukitong were selected. In the second stage, three villages from each block were selected by random sampling. Then in the final stage, from the list of banana growers, 60 banana farmers were selected randomly with 10 farmers from each village. The selected farmers were divided into three groups viz. Marginal (0.01 to 1.00 ha), Small (1.01 to 2.00 ha) and Medium (2.0 and above). The marketing channels were identified based on the intermediaries/ middleman involved from the point of production to the point of ultimate consumer. Marketing cost was calculated by estimating the cost incurred in the process of marketing. The cost incurred after harvesting till it reaches the final consumers generally constitute the marketing cost.

Marketing margin of the intermediaries at any stage of marketing was calculated as

$$MM_i = SP_i - (PP_i - MC_i)$$

Where,

MMi = Marketing Margin of the ith middlemen

SP_i = Selling Price of the ith middlemen

PP_i= Purchase Price of the ith middlemen

MC_i= Marketing Cost incurred by the the ith middlemen

The Price spread analysis was carried out as follows

Producer's share in consumer consumer rupee

$$= \frac{\text{Producer Price}}{\text{Consumer Price}} \times 100$$

Marketing efficiency was calculated using Shepherd's formula

$$ME = CP / MC$$

Where,

ME = Index of marketing efficiency

CP = Consumers purchase price

MC = Total Marketing Cost

Results and Discussion

From the study conducted, two marketing channels of banana were identified viz. producer- consumer (Channel I), Producer- Wholesaler- Consumer (Channel II). Table 1 represents the quantity of produce sold through different channels. It shows that channel I was more efficient through which marginal, small and medium farmers transacted 80.34, 58.07 and 38.49 per cent of the marked surplus, respectively. For all the groups, 710.37 q (56.85 per cent) was sold through channel I. In channel II, marginal, small and medium farmers transacted 19.57, 41.93 and 61.51 per cent of the marked surplus, respectively. For all the groups of farmer 539.07 q (43.15 per cent) was sold through channel II. Pattern of disposal showed that channel I was most effective for marginal and small group of farmers where they transected, 80.34 and 58.7 per cent of their marketed surplus. This is because of the fact that marginal and small group of farmer produce lesser quantity of marketable surplus and preferred disposal of their product directly. Channel II was most effective for medium group of farmers where they transacted, 61.51 per cent of their marketed surplus. This is because medium group of farmers produce more quantity of marketable surplus and preferred to dispose in bulk through whole seller. Bhat et al. 2011, in the North-Western Himalayan region of Jammu and Gajanana, 2002, in Tamil Nadu, also reported the similar type of findings.

TABLE 1 : EFFECTIVENESS OF VARIOUS MARKETING CHANNELS OF BANANA ACCORDING TO DIFFERENT SIZE GROUP OF FARMERS

Channel	Marginal		Small		Medium		Total	
	Qty (q)	%	Qty (q)	%	Qty (q)	%	Qty (q)	%
I	153.18	80.34	443.67	58.07	113.58	38.47	710.37	56.85
II	37.31	19.57	320.36	41.93	181.40	61.51	539.07	43.14
Total	190.96	100.00	764.03	100.00	294.91	100.00	1249.61	100.00

Marketing cost

Table 2 represents the marketing cost incurred by the different intermediaries in different marketing channels. From the table, it is found that the highest marketing cost was in channel II (Rs 92.19 per q) as compared to channel I which was Rs 66.74 per q. The cost incurred by the intermediaries was found to be 61.89 per cent of the total marketing cost in channel II. From the table, it can be concluded that the marketing cost increased with the increase in the length of the marketing channel. Mali et al. 2000, in Jalgaon district of Western Maharashtra and Anil et al. 2011, in Jammu also reported the similar finding. The higher marketing cost in channel II as compared to channel I was due to the presence of intermediaries which increased the length of the marketing channel in Channel II.

TABLE 2 : MARKETING COST OF INTERMEDIARIES IN DIFFERENT MARKETING CHANNELS OF BANANA

Intermediaries	Marketing Cost (Rs/q)	
	Channel I	Channel II
Producer	66.74 (100)	35.13 (38.11)
Wholesaler	-	57.06 (61.89)
Total Marketing Cost	66.74 (100)	92.19 (100)

(The figures in the parentheses indicate percentage to the total)

Price Spread

The following Table 3 shows the price spread analysis of different marketing channels. It was found out that the producer's share in consumer rupee was higher in channel I which was 95.55 per cent as there were no intermediaries involved in the channel. Whereas in channel II, it was found out as 82.91 per cent, which is least effective compared to channel I. Rane and Bagade 2006, and Pawar et al. 2010 also reported similar result in Sindhudurg district, Maharashtra.

TABLE 3 : PRICE SPREAD ANALYSIS FOR DIFFERENT MARKETING CHANNELS OF BANANA

S. No.	Items	Unit	Channel I	Channel II
1	Consumer's Price	Rs/q	1500	1500
2	Total Marketing Cost	Rs/q	66.74	92.19
3	Total Marketing Margin	Rs/q	0	142.94
4	Producer's Share in Consumers Rupee (%)	Percentage	95.55	82.91

Marketing Efficiency

Marketing efficiency, as calculated by Shepherd's formula was found higher in channel I which was 22.47, as compared to channel II which was found to be as 16.27 (Table 4). The higher efficiency in channel I Occurrid because of the effort of the producer in selling their produce directly to the consumers without involvement of any middlemen. Sangolkar, 2012, in his study, also found out similar results in Wardha district of Maharashtra.

TABLE 4 : ESTIMATE OF MARKETING EFFICIENCY IN DIFFERENT MARKETING CHANNELS OF BANANA

S. No.	Items	Unit	Channel I	Channel II
1	Consumer's Price	Rs/q	1500	1500
2	Total Marketing Cost	Rs/q	66.74	92.19
3	Marketing Efficiency	Ratio	22.47	16.27

Conclusion

From the study, two marketing channels of banana were identified viz. producer- consumer (Channel I), Producer- Wholesaler- Consumer (Channel II). Marketing cost was higher in channel II which was Rs 92.19 per quintal as compared to channel I which was Rs 66.74 per quintal. The higher marketing cost in channel II was due to the presence of intermediaries. It can be concluded that the marketing cost increased with increase in the length of the marketing channel. Producer's share in consumer rupee was higher in channel I as compared channel II, which was 95.55 per cent and 82.91 per cent, respectively. The marketing efficiency, as calculated by Shepherd's formula, was found to be 22.47 in channel I and 16.27 in Channel II. From the study it can also be concluded that producer's share in consumer rupee as well as marketing efficiency decreased with increase in length of marketing channel and presence of middlemen in the channel. Marketing cost was found to be higher in channel II as compared in Channel I. The cost incurred by the intermediaries was found to be 61.89 per cent of the total marketing cost in channel II. Finally, It can be concluded that the marketing cost increased with increase in the length of the marketing channel.

REFERENCES

Asati, B.S. and D.S. Yadav 2011. Himalayan Ecology diversity of horticultural crops in north eastern region. ENVIS Bulletin 12(1): Division of Horticulture, ICAR Research Complex for NEH Region. Umiam, Meghalaya

Bhata, A., K. Jyoti and K. Dileep. 2011. Economic Appraisal of Kinnow Production and its Marketing under North -Western Himalayan Region of Jammu. Agricultural Economics Research Review. 24(1) :283-290.

Gadre, N. A., D. P. Wahile., D. S. Gahane and D. K. Thakare. 1992. Marketing efficiency and price spread of banana in Jalaon market. Maharashtra Journal of Agricultural Economics, 4(1): 36-37.

Gajanana, T.M. 2002. Marketing Practices and Post-Harvest Loss Assessment of Poovan Banana in Tamil Nadu. Agricultural Economics Research Review, 15(1): 56-65.

Mali B. K., S. S. Bhosale., P. N. Shendge, P.V. Kale. 2000. Economics of production and marketing of banana in Jalgaon district of Western Maharashtra. Indian Journal of Agricultural Marketing, 17(1): 173-181.

Pawar, B.R., P.P. Landge., P.P. Yeware and D.S. Deshmukh. 2010. Marketed surplus and price spread in marketing of banana in Nanded district of Maharashtra. International Journal of Communication and Business Management, 3(1): 100-104.

Rama Rao, C.A., P. Sudhakar Reddy, Srinivas and Y.V.R. Reddy, 2008. Price Spread and Efficiency of Sorghum Grain Marketing in Mahabubnagar District of Andra Pradersh, Indian Journal of Agricultural Marketing, 22 (1): 25-29.

Rane, A.A. and S.R. Bagade. 2006. Economics of production and marketing of banana in Sindhudurg district Maharashtra. Indian Journal of Agricultural Economics. 20(1): 38-45.

Sangolkar, U.B. 2012. A study of Banana production and marketing in Wardha district of Maharashtra, International Research. Journal of Agricultural Economics and Statistics, 3 (1): 72-76.

Inequality in the Distribution of Assets, Income and Consumption Expenditure Among the Tribal Farmers in Himachal Pradesh

Dr. Anil Kumar*

Abstract

In the present study, an attempt has been made to work out the magnitude of inequality in the tribal economy of Himachal Pradesh. The study carried out during the agricultural year 2016-17, on a sample of 110 households with the help multistage random sampling technique by using Lorenz curve and Gini-coefficient. The results show that the magnitude of inequality in the distribution of assets came comparatively high as compared to income and consumption expenditure. It is also observed that the assets, income and consumption expenditure are distributed more evenly among the smaller farmers as compared to larger farmers.

Keywords: Inequality, Assets, Income and Consumption Expenditure.

Introduction

Securing rapid economic growth and expansion of employment, reduction of poverty and Inequality in income and wealth and prevention of concentration of economic power and creation of the values towards a free and equal society have been among the objectives of all our Five Year Plans. One of the most striking experiences of planned efforts is that economically backward, less privileged and socially oppressed people in the backward regions have gained little. The benefits of successive Five year plans have passed more to the already developed regions, and even within sub-regions, benefits accrued proportionately more to the already rich and socially privileged sections of the society,thus perpetuating social Inequality and disparities of wealth and income distribution. The benefits of planning accruing only to a selected region and selected people are undesirable from the point view of balanced regional development and distributional justice. The degree of inequality of income and wealth, the concentration of economic surplus in relatively fewer hands and the fragmented allocated mechanisms constitute socio-economic problem in which powerful dynamic forces tend to perpetuate and even a accentuate the low standards of living of significant proportion of our population. Poverty is closely related to inequality. Given the average income level, a higher level of inequality will tend to be associated with a higher level of poverty. The relative poverty arises entirely as a consequence of an unequal distribution of income irrespective of what the income level of the people at the bottom end of the income scale might be.

Objective

1. To work out the magnitude of inequality in the distribution of assets, income and consumption expenditure among the tribal sample households in Himachal Pradesh

Methodology

The present study carried out during the agricultural year 2016-17. The tribal areas in the State of Himachal Pradesh constitute the universe of the present empirical investigation which consist of the district Kinnaur, Lahaul & Spiti, Bharmour and Pangi blocks of Chamba district. All the development blocks in each of the above three districts have been arranged in an ascending order on the basis of their respective population and one block has been selected randomly form each district. The selected blocks are Pooh block of district Kinnaur, Lahual block of district Lahaul & Spiti and Bharmour block of Chamba district. At the second stage, all the panchayats in each of the selected block have been arranged in an ascending order on the basis of their respective population and three panchayats have been selected randomly in each selected block. The selected panchayats are gram panchayat Kanam, Labrang and Spillow in

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Pooh block, Gram Panachayat Trilokinath, Jhalma and Muring of Lahual block and gram panchayat Bharmour, Sanchuhi and Parndhala of Bharmour block. Finally a sample of 110 households, have been selected randomly in proportion to the total number of households falling in each holding group. The total sample consists of 60 marginal, 35 small and 15 medium farmers.

In the present study, extent of inequality has been worked out with help of Lorenz Curve and Gini-coefficient. The Gini-coefficient is given as under:

$$G(Y) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right)\sum_{i=1}^{n}(n+1-i)yi$$

Where,
G = Gini-coefficient
y = Income (Rs.)
n = Population Size
z = Mean Income (Rs.)
yi = Income of the ith person (Rs.)

Results and Discussion

Inequality in Assets

The cumulative percentage of the value of household assets as well as the number of persons falling in each assets group among the marginal farmers of the sample households has been presented in Table 1. The cumulative percentage of the value of household assets and the population when plotted on the graph paper, gives the resultant shape of the Lorenz Curve which is evident from Figure 1. This Figure clearly indicates that the bottom 30 per cent of the population owned about 20 per cent of the total household assets on the marginal size of holdings group, whereas the top 30 per cent of the population possessed about 45 per cent of the value of the total household assets.

TABLE 1 : INEQUALITY IN THE DISTRIBUTION OF ASSETS AMONG THE MARGINAL FARMERS

Assets Group (Rs.)	Assets Value (Rs.)	Cumulative Value of Assets (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-1200000	5700000	5700000	4.31	17	17	6.51
1200000-2000000	14800000	20500000	15.52	42	59	22.61
2000000-2500000	47000000	67500000	51.10	113	172	65.90
2500000-4000000	28600000	96100000	72.75	53	225	86.21
4000000 & Above	36000000	132100000	100	36	261	100

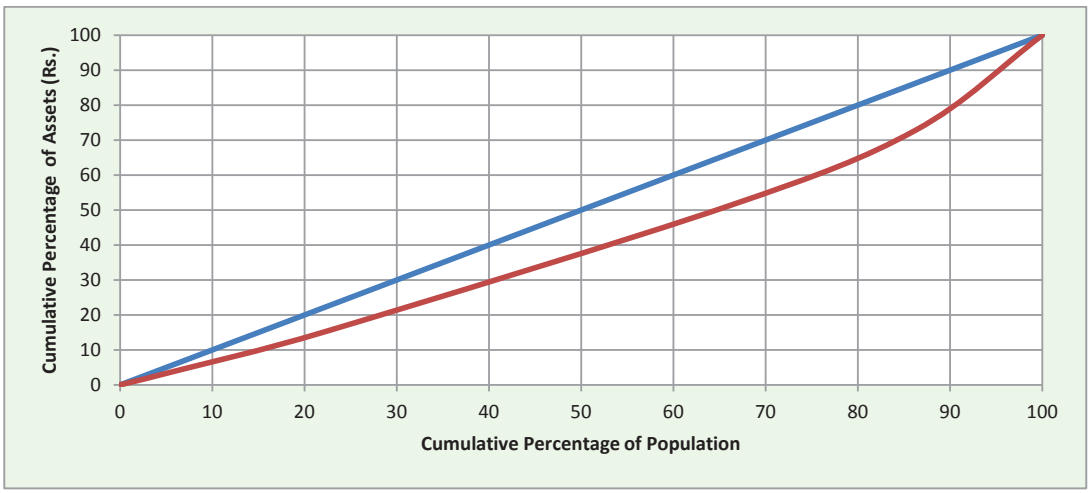

Figure 1

The value of Gini-coefficient for the household assets among the marginal farmers has been worked out as follows:

$$G(A) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i)ai$$

$$\sum_{i=1}^{n} (n + 1 - i)ai = 13286900000$$

n = 261

Z= $\frac{132100000}{261}$ = 506130.27

Therefore,

G (A) = $1 + \frac{1}{261} - \frac{2}{261^2 \times 506130.27}$ (13286900000)

= 1.0038 – $\frac{2}{34478100000}$ (13286900000)

= 1.0038 – 0.000000000006 (13286900000)

= 1.0038 - 0.7707 = 0.2331

Thus, the value of G (A) = 0.2331

The value of the Gini-coefficient for the household assets has been worked out to be 0.2331, for the households falling on the marginal holding group. The low value of Gini-coefficient clearly shows that the inequality of assets distribution is negligible among the marginal farmers.

The cumulative percentage of the value of household assets as well as the number of persons falling in each assets group among the small farmers of the sample households has been presented in Table 2. The cumulative percentage of the value of household assets and the population when plotted on the graph paper, gives the resultant shape of the Lorenz Curve which is evident from Figure 2. This Figure clearly indicates that the bottom 30 per cent of the population owned 20 per cent of the total household assets on the small size of holdings group, whereas the top 30 per cent of the population possessed about 50 per cent of the value of the total household assets.

TABLE 2 : INEQUALITY IN THE DISTRIBUTION OF ASSETS AMONG THE MARGINAL FARMERS

Assets Group (Rs.)	Assets Value (Rs.)	Cumulative Value of Assets (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-5000000	73417560	73417560	45.49	110	110	64.71
5000000-6000000	16448155	89865715	55.68	18	128	75.29
6000000-8500000	43626600	133492315	82.71	31	159	93.53
8500000 & Above	27907300	161399615	100.00	11	170	100.00

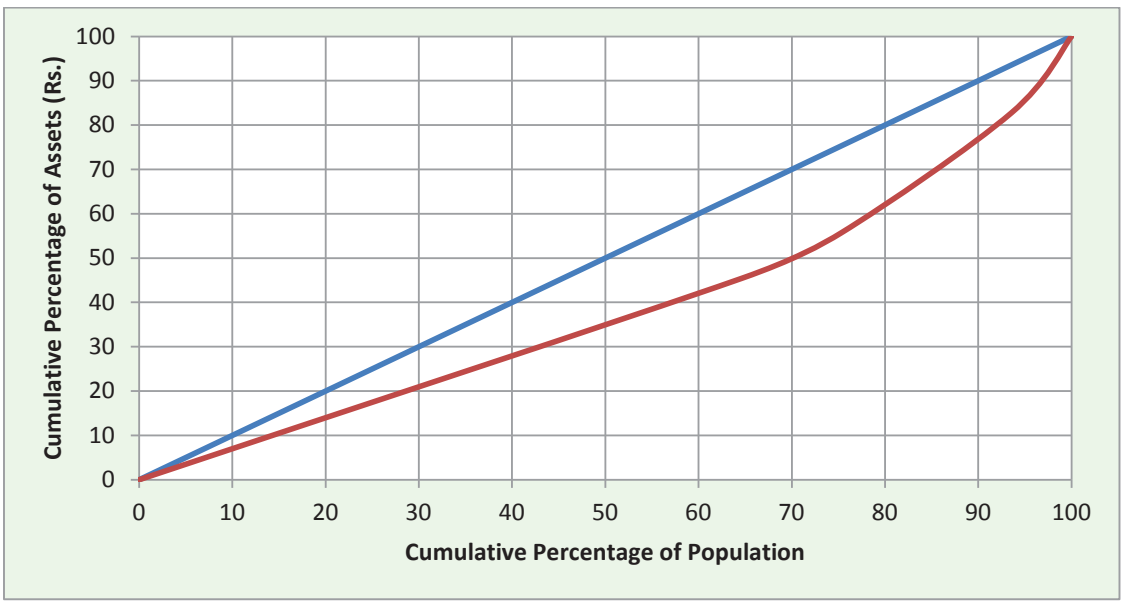

Figure 2

The value of Gini-coefficient for the household assets among the small farmers has been worked out as follows:

$$G(A) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i)ai$$

$$\sum_{i=1}^{n} (n + 1 - i)ai = 8498839870$$

n = 170

Z= $\frac{161399615}{170}$ = 949409.5

Therefore,

G (A) = $1 + \frac{1}{170} - \frac{2}{170^2 \times 949409.5}$ (8498839870)

= 1.0058 – $\frac{2}{27437934550}$ (8498839870)

= 1.0058 – 0.00000000007 (8498839870)

= 1.0058 - 0.6195 = 0.3864

Thus, the value of G (A) = 0.3864

The value of the Gini-coefficient for the household assets has been worked out to be 0.3864, for the households falling on the small holding group which is higher to the value of Gini-coefficient for household assets on the marginal size of holding i.e. 0.2331, thereby indicating more Inequality in the distribution of household assets on the former rather than the latter size of holding group.

The cumulative percentage of the value of household assets as well as the number of persons falling in each assets group among the medium sample households has been presented in Table 3. The cumulative percentage of the value of household assets and the population when plotted on the graph paper gives the resultant shape of the Lorenz Curve which is evident from Figure 3. This Figure clearly indicates that the bottom 30 per cent of the population owned about 10 per cent of the total household assets on the medium size of holding group, whereas the top 30 per cent of the population possessed about 72 per cent of the value of the total household assets.

TABLE 3 : INEQUALITY IN THE DISTRIBUTION OF ASSETS AMONG THE MEDIUM FARMERS

Assets Group (Rs.)	Assets Value (Rs.)	Cumulative Value of Assets (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-5000000	4648500	4648500	1.55	5	5	5.95
5000000-6000000	5562200	10210700	3.40	5	10	11.90
6000000-9000000	70454440	80665140	26.84	49	59	70.24
9000000 & Above	219904800	300569940	100	25	84	100

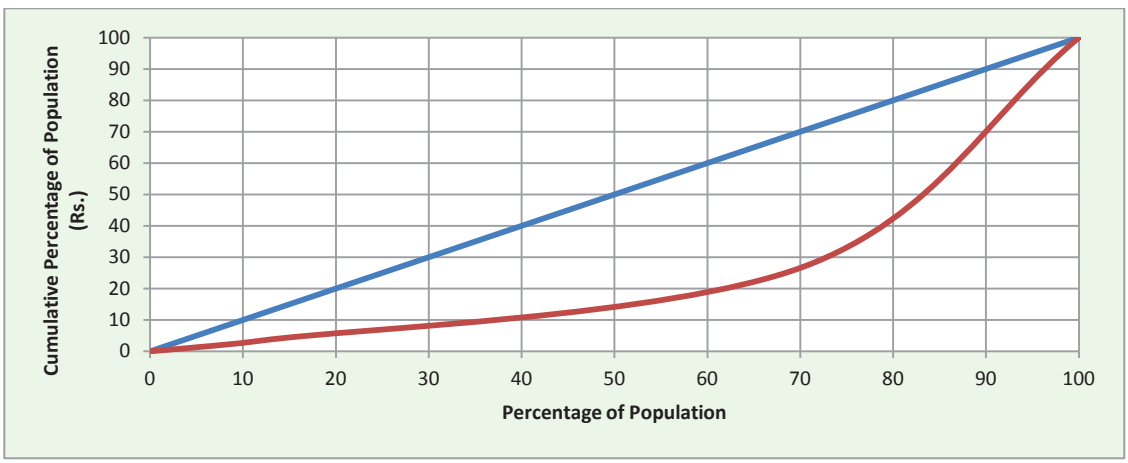

Figure 3

The value of Gini-coefficient for the household assets among the medium farmers has been worked out as follows:

$$G(A) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i)ai$$

$$\sum_{i=1}^{n} (n + 1 - i)ai = 5675078080$$

n = 84

Z= $\frac{300568940}{84}$ = 3578201.67

Therefore,

G (A) = $1 + \frac{1}{84} - \frac{2}{84^2 \times 3578201.67}$ (5675078080)

= 1.0119 - $\frac{2}{25247790960}$ (5675078080)

= 1.0119 – 0.00000000008 (5675078080)

= 1.0119 - 0.4495 = 0.5624

Thus, the value of G (A) = 0.5624

The value of the Gini-coefficient for the household assets has been worked out 0.5624, for the households falling on the medium holding group which is higher to the value of Gini-coefficient for the household assets on the marginal and small size of holding i.e. 0.2331 and 0.3864 thereby indicating more Inequality in the distribution of household assets on the former than the latter size of holding groups.

The cumulative percentage of the value of household assets as well as the number of persons falling in each assets group on all the holding groups has been presented in Table 4. The cumulative percentage of the value of household assets and the population when plotted on the graph paper gives the resultant shape of the Lorenz Curve which is evident from Figure 4. This Figure clearly indicates that the bottom 30 per cent of the population owned 20 per cent of the total household assets on all the holding groups, whereas the top 30 per cent population possessed about 65 per cent of the value of the total household assets.

TABLE 4 : INEQUALITY IN THE DISTRIBUTION OF ASSETS AMONG ALL THE FARMERS

Assets Group (Rs.)	Assets Value (Rs.)	Cumulative Value of Assets (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-1500000	14016250	14016250	2.36	49	49	9.51
1500000-2000000	16645000	30661250	5.16	48	97	18.83
2000000-5000000	151504810	182166060	30.66	251	348	67.57
5000000 & Above	411902495	594068555	100	167	515	100

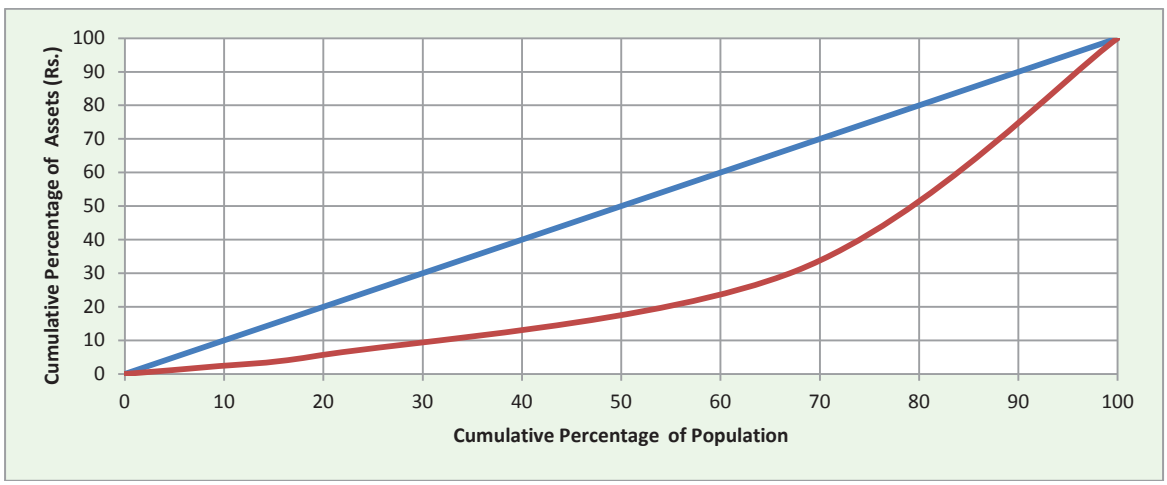

Figure 4

The value of Gini-coefficient of the household assets among all the sample farmers has been worked out as follows: Thus, for all the sample households together with the aggregated analysis the value of the Gini-coefficient for the household assets has been worked out 0.5444.

$$G(A) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i)ai$$

$$\sum_{i=1}^{n} (n + 1 - i)ai = 69990558165$$

n = 515

Z= $\frac{594068555}{515}$ = 1153531.17

Therefore,

G (A) = $1 + \frac{1}{515} - \frac{2}{515^2 \times 1153531.17}$ (69990558165)

= 1.0019 – $\frac{2}{305945305825}$ (69990558165)

= 1.0019 – 0.00000000001 (69990558165)

= 1.0019 - 0.4575 = 0.5444

Thus, the value of G (A) = 0.5444

Inequality in Income

The Inequality in the distribution of household assets among different regions of an economy as well as among different holding groups within a region leads to Inequality in the distribution of income and thereby causes a wide range of variations in their levels of living. The cumulative percentages of the household per month average income as well as the number of persons falling in each income groups among the marginal farmers has been presented in Table 5. The cumulative percentage of income and population of the household falling on the marginal holding group, when plotted on a graph paper gives the resultant shape of the Lorenz Curve which is evident from Figure 5. This Figure clearly shows that the bottom 30 per cent of the population is sharing about 24 per cent of total income, whereas the top 30 per cent of the population shared about 40 per cent of the total income, which indicates minimum income Inequality in the distribution of income among the households falling on the marginal size of holding group.

TABLE 5 : INEQUALITY IN THE DISTRIBUTION OF MONTHLY INCOME AMONG THE MARGINAL FARMERS

Income Group (Rs.)	Monthly Income (Rs.)	Cumulative Monthly Income (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-12000	179500	179500	25.37	85	85	31.84
12000-13000	175000	354500	50.11	76	161	60.30
13000-15000	99000	453500	64.10	33	194	72.66
15000-18000	100500	554000	78.30	29	223	83.52
18000 & Above	153500	707500	100	44	267	100

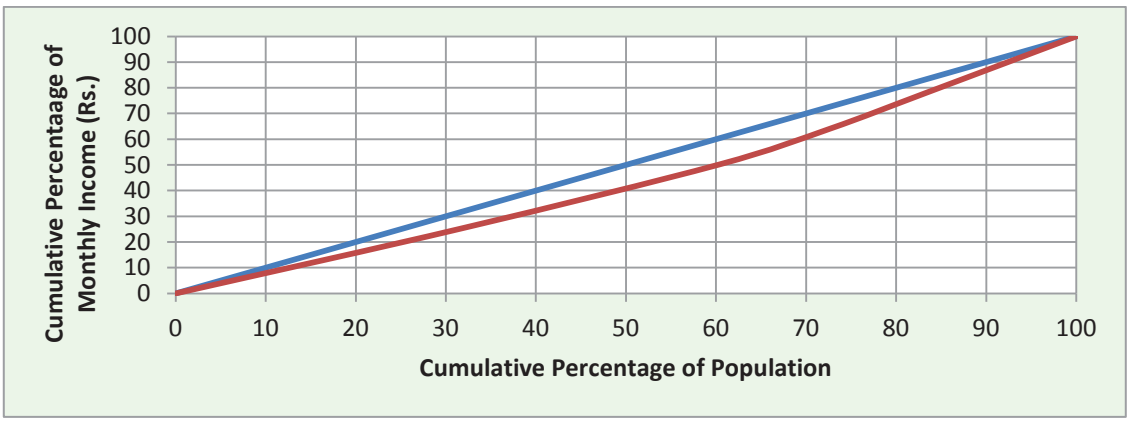

Figure 5

The value of Gini-coefficient for the distribution of per month average income of households falling on the marginal size of holding group has been worked out as follows

$$G(Y) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i) yi$$

$$\sum_{i=1}^{n} (n + 1 - i) yi = 76094500$$

n = 261

Z= $\frac{707500}{261}$ = 2710.73

Therefore,

G(Y) = $1 + \frac{1}{261} - \frac{2}{261^2 \times 2710.73}$ (76094500)

= 1.0038 – $\frac{2}{184657500}$ (76094500)

= 1.0038 – 0.000000011 (76094500)

= 1.0038 - 0.8242 = 0.1796

Thus, the value of G(Y) = 0.1796

The shape of Lorenz curve as well as the value of Gini-coefficient for the income distribution of household falling on the marginal holding group which come out to be 0.1796, clearly shows the fact that the extent of relative income Inequality among the marginal farmers is minimum.

The cumulative percentages of the household per month average income as well as the number of persons falling in each income groups among the small farmers has been presented in Table 6. The cumulative percentage of income and population of the household falling on the small holding group, when plotted on a graph paper, gives the resultant shape of the Lorenz curve which is evident from Figure 6. This Figure clearly shows that the bottom 30 per cent of the population is sharing about 20 per cent of total income, whereas top 30 per cent of the population shared about 46 per cent of the total household income.

TABLE 6 : INEQUALITY IN THE DISTRIBUTION OF MONTHLY INCOME AMONG THE SMALL FARMERS

Income Group (Rs.)	Monthly Income (Rs.)	Cumulative Monthly Income (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-15000	120000	120000	13.83	37	37	21.76
15000-20000	164500	284500	32.80	40	77	45.29
20000-40000	313000	597500	68.88	66	143	84.12
40000 & Above	270000	867500	100	27	170	100

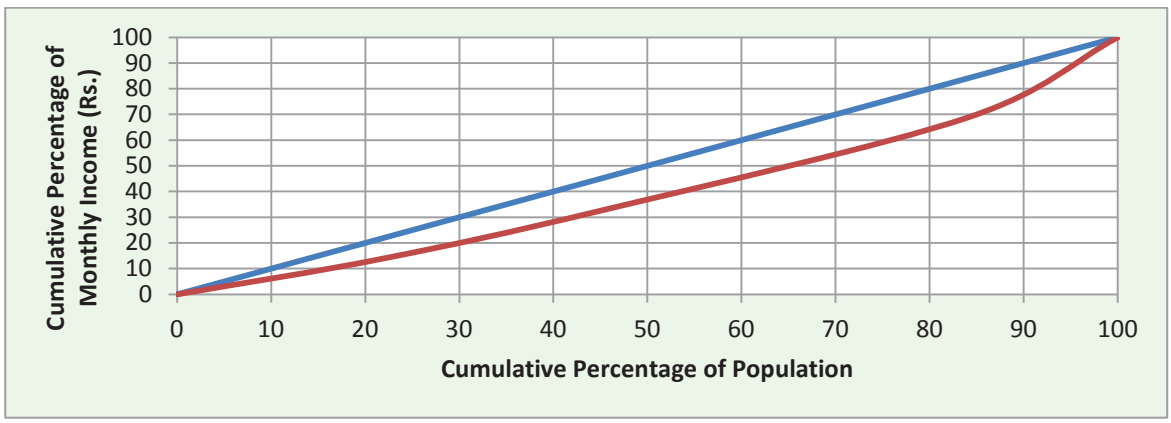

Figure 6

The value of Gini-coefficient for the distribution of per month average income of households falling on the small size of holding group has been worked out as follows:

$$G(Y) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i) yi$$

$$\sum_{i=1}^{n} (n + 1 - i) yi = 55030500$$

n = 170

Z= $\frac{867500}{170}$ = 5102.94

Therefore,

G(Y) = $1 + \frac{1}{170} - \frac{2}{170^2 \times 5102.94}$ (125719853.50)

= 1.0059 – $\frac{2}{147475000}$ (125719853.50)

= 1.0059 – 0.000000006 (125719853.50)

= 1.0059 - 0.7463 = 0.2596

Thus, the value of G(Y) = 0.2596

The shape of the Lorenz curve as well as the value of Gini-coefficient i.e., 0.2596 of the income distribution among the households falling on the small size of holding group, if compared with the shape of the Lorenz curve and the value Gini-coefficient of the income distribution among the marginal farmers, i.e. 0.1796 clearly indicates relatively higher Inequality of income distribution among the former holding group than the latter holding group.

The cumulative percentages of the household per month average income as well as the number of persons falling in each income groups among the medium farmers has been presented in Table 7. The cumulative percentage of income and population of the household falling on the medium holding group, when plotted on a graph paper, gives the resultant shape of the Lorenz curve which is evident from Figure 7. This Figure clearly shows that the bottom 30 per cent of the population is sharing about 20 per cent of total income, whereas the top 30 per cent of the population shared more than 53 per cent of the total household income.

TABLE 7 : INEQUALITY IN THE DISTRIBUTION OF HOUSEHOLD INCOME AMONG THE MEDIUM FARMERS

Income Group (Rs.)	Monthly Income (Rs.)	Cumulative Monthly Income (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-20000	40000	40000	6.35	8	8	9.52
20000-30000	240000	280000	44.44	48	56	66.67
30000-50000	100000	380000	60.32	13	69	82.14
50000 & Above	250000	630000	100	15	84	100

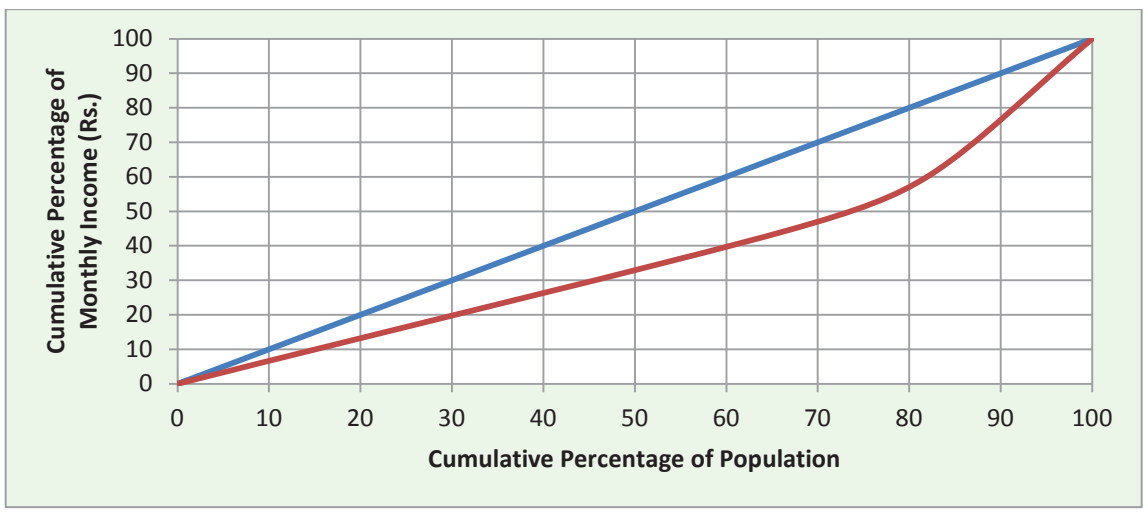

Figure 7

The value of Gini-coefficient for the distribution of per month average income of households falling on the medium size of holding group has been worked out as follows:

$$G(Y) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i) yi$$

$$\sum_{i=1}^{n} (n + 1 - i) yi = 17835000$$

n = 84

Z= $\frac{630000}{84}$ = 7500

Therefore,

G(Y) = $1 + \frac{1}{84} - \frac{2}{84^2 \times 7500}$ (17835000)

= 1.0119 – $\frac{2}{52920000}$ (17835000)

= 1.0119 – 0.0000000018 (17835000)

= 1.0119 - 0.6740 = 0.3379

Thus, the value of G(Y) = 0.3379

The shape of the Lorenz curve as well as the value of Gini-coefficient i.e., 0.3379 of the income distribution clearly indicates relatively higher Inequality in the distribution of income among the sample households falling on the medium size of holding group, if compared to the Inequality of income prevailing among the households falling on the marginal and small size of holdings.

The cumulative percentages of the household per month average income as well as the number of persons falling in each income groups among all the sample farmers has been presented in Table 8. The cumulative percentage of income and population of the household falling on the all holding group, when plotted on a graph paper gives the resultant shape of the Lorenz Curve which is evident from Figure 8. This Figure clearly shows that the bottom 30 per cent of the population is sharing about 15 per cent of total income, whereas top 30 per cent of the population is sharing 50 per cent of the total household income.

TABLE 8 : INEQUALITY IN THE DISTRIBUTION OF HOUSEHOLD MONTHLY INCOME AMONG ALL THE FARMERS

Income Group (Rs.)	Monthly Income (Rs.)	Cumulative Monthly Income (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-10000	72000	72000	3.85	42	42	10.71
10000-12000	167500	239500	12.80	60	102	26.02
12000-20000	404000	643500	34.39	104	206	52.55
20000-30000	438000	1081500	57.80	98	304	77.55
30000-50000	329500	1411000	75.41	49	353	90.05
50000 & Above	460000	1871000	100	39	392	100

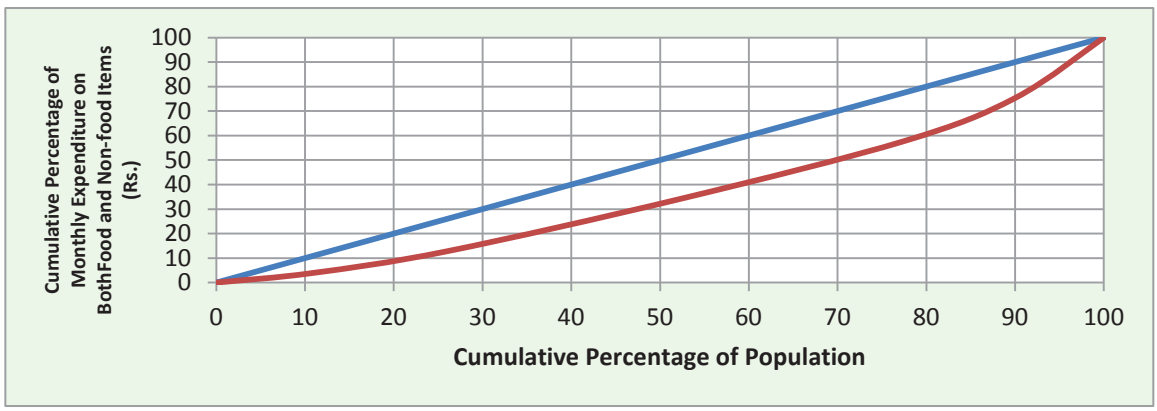

Figure 8

The value of Gini-coefficient for the distribution of per month average income among all the farmers has been worked out as follows:

$$G(Y) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i) yi$$

$$\sum_{i=1}^{n} (n + 1 - i) yi = 401535000$$

n = 515

Z= $\frac{2205000}{515}$ = 4281.55

Therefore,

G(Y) = $1 + \frac{1}{515} - \frac{2}{515^2 \times 4281.55}$ (401535000)

= 1.0019 – $\frac{2}{1135575000}$ (401535000)

= 1.0019 – 0.0000000018 (401535000)

= 1.0019 - 0.7072 = 0.2947

Thus, the value of G(Y) = 0.2947

Both the shape of Lorenz curve as well as the value of the Gini-coefficient i.e. 0.2947 which are based on the aggregated analysis of the distribution of household income clearly indicate the overall income inequality prevailing among all the sample households in the study area.

Inequality in Consumption Expenditure

The percentage expenditure on food and non-food items vary from household to household as well as from one expenditure group to another. The 'Poor' rural households spend most of their income on food-items and very little is left to meet out their non-food requirements, whereas the 'not poor' households spending comparatively less on food-items and proportionately more on non-food items. The cumulative percentages of household monthly consumer expenditure on both food and non-food items as well as the number of persons falling in each expenditure group have been presented in Table 9. The cumulative percentage of household monthly consumer expenditure on both food and non-food items when plotted on the graph paper the resultant shape of the Lorenz Curve is evident from Figure 9. This Figure clearly shows that the bottom 30 per cent of the population is spending about 24 per cent of the total consumption expenditure on both food and non-food items whereas, the top 30 per cent of the population is spending about 40 per cent.

TABLE 9 : INEQUALITY IN THE DISTRIBUTION OF MONTHLY CONSUMPTION EXPENDITURE ON BOTH FOOD AND NON-FOOD ITEMS AMONG THE MARGINAL FARMERS

Group (Rs.)	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-3000	20000	20000	5.51	20	20	7.66
3000-5000	60800	80800	22.27	52	72	27.59
5000-10000	141500	222300	61.26	115	187	71.65
10000 & Above	140600	362900	100	74	261	100

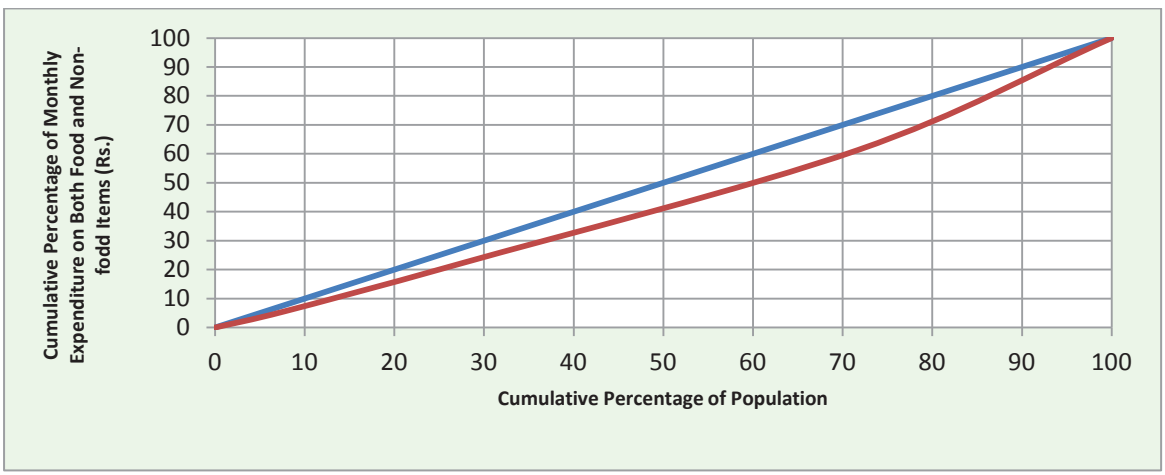

Figure 9

The value of Gini-coefficient for the distribution of total household consumption expenditure on both food and non-food items among the marginal holdings has been worked out as follows:

$$G(C) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i)ci$$

$$\sum_{i=1}^{n} (n + 1 - i)Ci = 41051700$$

n= 261

Z= $\frac{362900}{261}$ = 1390.42

G(C) = $1 + \frac{1}{261} - \frac{2}{261 \times 1390.42}$ (41051700)

= 1.0038 – $\frac{2}{94716900}$ (41051700)

= 1.0038 – 0.000000021 (41051700)

= 1.0038 - 0.8668 = 0.1370

Thus the value of G(C) = 0.1370

Both the shape of Lorenz curve which is closer to the diagonal as well as the low value of Gini-coefficient i.e. 0.1370 indicate minimum level of Inequality in the distribution of household consumption expenditure on both food and non-food items on the marginal size of holding group.

The cumulative percentages of the consumption expenditure on both food and food items and the persons, falling in each expenditure group among the small farmers have been presented in Table 10. These cumulative percentages of consumption expenditure on both food and non-food items as well as of population, when plotted on a graph paper, give the resultant shape of Lorenz Curve which is evident from Figure 10. This Figure clearly shows that the bottom 30 per cent of the population is spending about 22 percent of the total consumption expenditure on both food and non-food items, whereas top 30 per cent of the population is spending nearly about 42 per cent of the total consumption expenditure.

TABLE 10 : INEQUALITY IN THE DISTRIBUTION OF MONTHLY CONSUMPTION EXPENDITURE ON BOTH FOOD AND NON-FOOD ITEMS AMONG THE SMALL FARMERS

Group (Rs.	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure (Rs.)	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-5000	21000	21000	6.10	14	14	8.24
5000-6000	30000	51000	14.80	20	34	20.00
6000-10000	76500	127500	37.01	45	79	46.47
10000-12000	112000	239500	69.52	56	135	79.41
12000 & Above	105000	344500	100	35	170	100

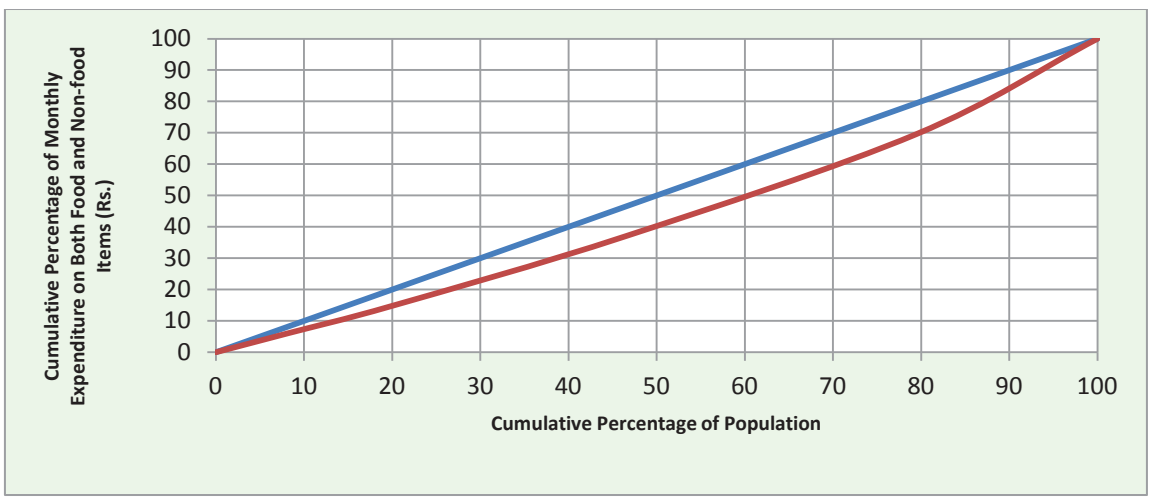

Figure 10

The value of Gini-coefficient for the consumer expenditure distribution on both food and non food items among the small farmers has been worked out as follows:

$$G(C) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i)ci$$

$$\sum_{i=1}^{n} (n + 1 - i)Ci = 24773000$$

n = 170

Z= $\frac{344500}{170}$ = 2026.47

Therefore,

G(C)) = $1 + \frac{1}{170} - \frac{2}{170^2 \times 2026.47}$ (24773000)

$1.0059 - \frac{2}{58565000}$ (24773000)

= 1.0059 - 0.000000034 (24773000)

= 1.0059 - 0.8460 = 0.1599

Thus the value of G(C) = 0.1599

The value of the Gini co-efficient for the distribution of household total monthly consumption expenditure on both food and non-food items among the small farmers has been worked out to be 0.1599. The shape of Lorenz Curve which is relatively farther from the diagonal as well as the comparatively higher value of Gini-coefficient i.e. 0.1370, on the small size of holdings, if compared to the marginal farmers indicate more Inequality in consumption expenditure on the former than the latter holding group.

The cumulative percentages of the consumption expenditure on food and food items and the persons, falling in each expenditure group among the small farmers have been presented in Table 11. These cumulative percentages of consumption expenditure on both food and non-food items as well as of population when plotted on a graph paper, give the resultant shape of Lorenz Curve which is evident from Figure 11. This Figure clearly shows that the bottom 30 per cent of the population is spending 20 per cent of the total consumption expenditure on both food and non-food items, whereas the top 30 per cent of the population is spending nearly 48 per cent of the total consumption expenditure on both food and non-food items.

TABLE 11 : INEQUALITY IN THE DISTRIBUTION OF MONTHLY CONSUMPTION EXPENDITURE ON BOTH FOOD AND NON-FOOD ITEMS AMONG THE MEDIUM FARMERS

Group (Rs.)	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-15000	42000	42000	13.64	18	18	21.43
15000-18000	60000	102000	33.12	20	38	45.24
18000-20000	72000	174000	56.49	24	62	73.81
20000 & above	134000	308000	100	22	84	100

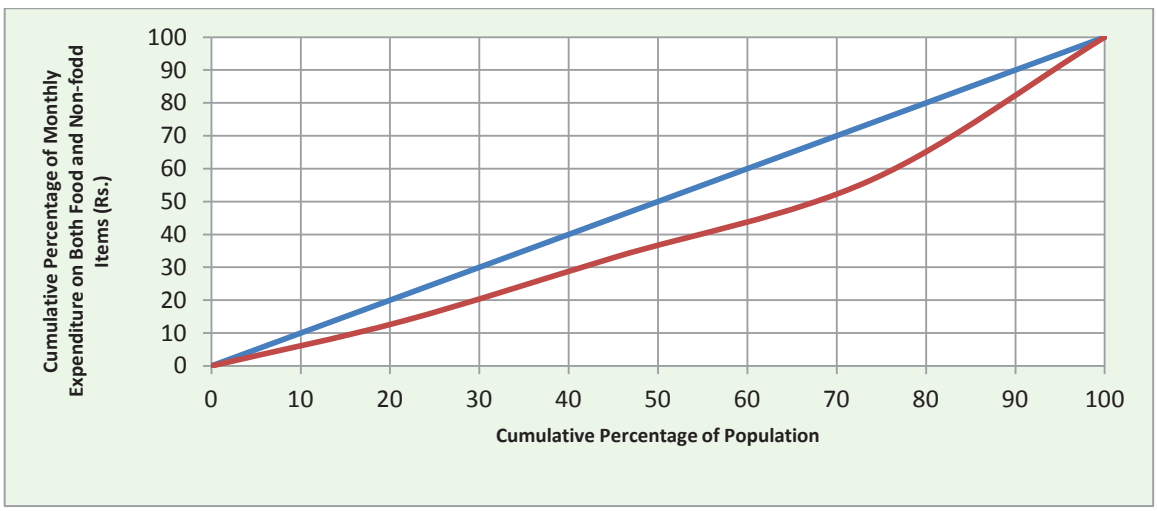

Figure 11

The value of Gini-coefficient for the distribution of consumer expenditure on both food and non-food items among the medium farmers has been calculated as follows:

$$G(C) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right)\sum_{i=1}^{n}(n+1-i)ci$$

$$\sum_{i=1}^{n}(n+1-i)Ci = 9316000$$

n= 84

Z= $\frac{308000}{84}$ = 3666.67

Therefore,

G = $1 + \frac{1}{84} - \frac{2}{84^2 \times 3666.67}$ (9316000)

1.0119 – $\frac{2}{25872000}$ (9316000)

= 1.0119 - 0.00000008 (9316000)

= 1.0119 – 0.7201 = 0.2918

Thus, the value of G(C) = 0.2918

Both the shape of Lorenz Curve, which is relatively away from the diagonal as well as the comparatively higher value of Gini-coefficient i.e., 0.2918 on the medium size of holding group, if compared to the shape of Lorenz Curve as well as the value of Gini-coefficient on the marginal and small size of holdings, indicate comparatively more inequality in the total household consumption expenditure on former than the latter holding groups.

The cumulative percentages of the consumption expenditure on both food and non-food items and the persons falling in each expenditure group among all the farmers have been presented in Table 12. These cumulative percentages of consumption expenditure on both food and non-food items as well as of population when plotted on a graph paper gives the resultant shape of Lorenz Curve which is evident from Figure 12. This Figure clearly shows that the bottom 30 per cent of the population is spending about 20 per cent of the total consumption expenditure on both food and non-food items, whereas the top 30 per cent of the population is spending nearly 44 per cent of the total consumption expenditure on both food and non-food items.

TABLE 12 : INEQUALITY IN THE DISTRIBUTION OF MONTHLY CONSUMPTION EXPENDITURE ON BOTH FOOD AND NON FOOD ITEMS AMONG ALL THE FARMERS

Group (Rs.)	Consumption Expenditure (Rs.)	Cumulative Consumption Expenditure	Cumulative Percentage	No. of Persons	Cumulative Persons	Cumulative Percentage
0-5000	101800	101800	10.01	86	86	16.70
5000-15000	572300	674100	66.26	331	417	80.97
15000-18000	122300	796400	78.28	47	464	90.10
18000 & above	221000	1017400	100	51	515	100

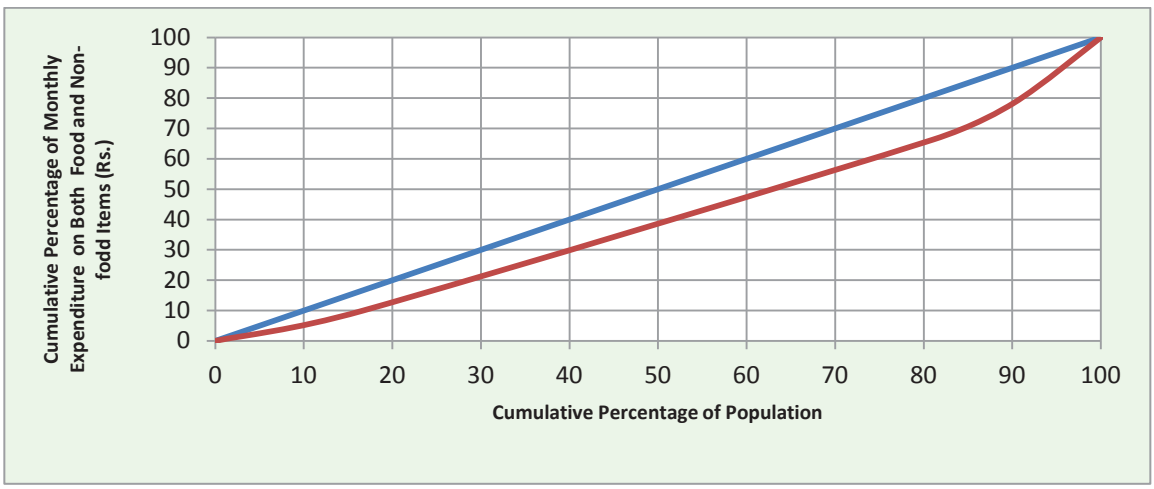

Figure 12

The value of Gini-coefficient of consumption expenditure on both food and non-food items among all the farmers has been calculated as follows:

$$G(C) = 1 + \left(\frac{1}{n}\right) - \left(\frac{2}{n^2 z}\right) \sum_{i=1}^{n} (n + 1 - i)ci$$

$$\sum_{i=1}^{n} (n + 1 - i)Ci = 194075100$$

n = 515

Z= $\frac{1017400}{515}$ = 1975.53

Therefore,

G(C) = $1 + \frac{1}{515} - \frac{2}{515^2 \times 1975.53}$ (194075100)

= $1.0019 - \frac{2}{515}$ (194075100)

= 1.0019 - 0.0000000038 (194075100)

= 1.0019 – 0.7408 = 0.2611

Thus, the value of G(C) = 0.2611

Both, the shape of Lorenz Curve (i.e. the distance between the diagonal and Lorenz curve) as well as the value of Gini-coefficient i.e., 0.2053, which are based on aggregated analysis of household monthly total consumption expenditure on both food and non-food items.

Conclusions and Recommendations

From the above analysis, it can be concluded that there exists less inequality among the smaller holdings as compared to larger holdings. The value of Gini-coefficient with the help of disaggregated analysis clearly indicates that the inequality in the distribution of household assets increases with an increase in the size of holdings. The analysis of income distribution with the help of disaggregated analysis by size class of holdings also clearly reveals the sharp variation in the distribution of household income among the different holding groups i.e., the extent of relative income inequality indicates an increasing tendency with an increase in the size of holdings. Further, within each size of holding group, the majority of population falling at the bottom end of the income and/or consumption expenditure scale is sharing the lowest percentage of income and/or consumption expenditure, whereas contrary to it, the minimum percentage of population falling at the top of income and/or consumption expenditure scale is enjoying the lion's share of the total income/or consumption in the study area. In the tribal areas, there exists a lot of variation as well as economic and social inequality in the literacy, percentage distribution of household productive assets, source wise pattern of household income, distribution of household consumption expenditure, magnitude of employment and unemployment, Inequality of households assets, household income and per capita burden of debt, as a result of which there prevails wide spread variations in the magnitude of absolute as well as relative poverty among the tribal households. In the tribal areas if the programmes designed to remove the Inequality had been implemented effectively with the active participation of the poor, the poverty and economic Inequality could have been reduced to a great extent. The planning strategy for the development of the tribal areas should be judicious mix of beneficiary oriented programmes, human resource development and infrastructural development programmes. Keeping in view the hilly topography, extreme cold climatic conditions and lack of infrastructural facilities in the tribal areas under study, emphasis should be laid down on the minor irrigation, soil and water conservation, co-operation, rural roads and land reforms in the infrastructure sector, drinking water supply, general and technical education and health in the social sector, horticulture, animal husbandry, dairy development and forestry in the agricultural sector and small scale as well as cottage industries using the local skill and raw material in the industrial sector. This type of policy, which gives equal importance to all the sectors of an economy, would be of utmost importance to remove the economic inequality in the tribal areas of Himachal Pradesh in general.

REFERENCES

1. Bajpai, S.R. (1990), "Methods of Social Survey and Research, Kitab Ghar, Kanpur.

2. Government of Himachal Pradesh (1974), "Household Consumption Expenditure in Rural and Urban Areas of Himachal Pradesh, Report No. 4, (Directorate of Economics and Statistics), Shimla p. 13.

3. Kumar, Anil (2016), "Impact of Watershed Development Programme on Crop Diversification: A Study of Himachal Pradesh", Hill Quest (A National Multidisciplinary Refereed online Journal), Vol. 3, Issue 3-4 (July-December), Shimla, pp. 47-68.

4. Kumar, Anil (2016), "Sustainability of Hill Agriculture Through Watershed Development

Programme in Himachal Pradesh", Unpublished PhD Thesis, Department of Economics, HPU, Summer Hill, Shimla -5.

5. Kumar, Anil (2017), "Watershed Development and Income Inequalities: A Study of Himachal Pradesh", Hill Quest (A National Multidisciplinary Refereed online Journal), Vol. 4, Issue -I (January-June), Shimla, pp. 51-71.

6. Kumar, Anil (2017), "Watershed Development Programme and Returns to Scale in the H i l l Agriculture of Himachal Pradesh: Traditional Vs. Commercial Crops", Agricultural Situation in India", Vol. IXXIV, August, pp. 34-43.

7. Kumar, Sikander and Kumar, Anil (2017), "Impact of Watershed Development Programme on the Cost and Returns of Cereals and Pulses Crops: A Study of Himachal Pradesh", Himalayan Journal of Economics, Vol. 1, (January-June), Shimla, pp. 99-115.

8. Rakshit, Gangadhar (1976), "Poverty and Planning in India, The World Press Pvt. Ltd., Calcutta, pp. 21, 132, 133.

9. Rao, S.K. (1983), "A Note on Measuring Economic Distances, Between Regions in India", Economic and Political Weekly, Vol. 8, No. 17, Bomaby, p. 793.

10. S. Thakur, Dalip (1984), "Poverty, Inequality and Unemployment in Rural India: Some Conceptual and Methodological Issues in Measurement", B.R. Publishing Corporation, New Delhi.

11. Sastry, S.A.R. and Suryanaryana T (1981), "Optimum Diet and Poverty Line, in Employment Poverty and Public Policy", Sardar Patel Institute of Economic and Social Research, Ahmedabad, 1981, pp. 97-116.

12. Sen A.K.; Poverty (1976), "An Ordinal Approach to Measurement", Econometrica, Vol. 44, No. 2, March, England, pp.219-230.

13. Sen, Amartya (1974), "Poverty, Inequality and Unemployment : Some Conceptual Issues of Measurement in Poverty and Income Distribution", edited T.N. Srinivasan and P.K. Bardhan, Statistical Publishing Society, Calcutta, pp. 67-68.

Agro-Economic Research

Farmers' Suicides in Gujarat*

S. S. KALAMKAR, MRUTYUNJAY SWAIN AND THANSINGH PARIHAR

The agricultural sector in India has been going through a painful phase. It is not merely a crisis of deceleration of growth of agricultural production and productivity, but also increasing distress experienced by a growing proportion of the farming community which has not been able to meet their basic consumption needs from their dependence on agricultural income. One of the tragic manifestations of the crisis is the large number of suicides committed by the farmers in some parts of India. The distress among the rural community, allegedly manifested in farmers' suicide, is commonly attributed to debt trap, crop failure and/or yield loss. In fact so alarming was the problem that it attracted nationwide attention and generated frantic debates in the union and state legislatures. These incidents raised serious questions of the state of the agrarian economy and the economic hardships faced by farmers.

The spate of farmers' suicides that surfaced in some part of India was naturally associated with the performance of the sector, along with the other factors that were predominant including advent of the World Trade Organisation, genetically modified crop varieties, price collapse and spurious seeds. Agricultural production in these parts always has significant fluctuations and the prices did not increase despite supply stress. That brought down the gross income flow. On the other side, the cash component in the cost of cultivation has been increasing. As a consequence, the net income flow to the farmer households stagnated. The farmer would borrow to meet the increased cost of cultivation or for irrigation well and pump sets, but the shrinking net income will not allow for payment of debt. These incidents raised serious questions of the state of the agrarian economy and the economic hardships faced by farmers.

The Situation Assessment Surveys of the NSSO (2014) has reconfirmed the worsening situation of farm households which indicated that about 51.9 percent of the farm households in India are indebted, increased from 48.6 percent recorded in 2003 in 59th round. As per 2014 report, indebtedness was the highest in Andhra Pradesh (93 percent), followed by Telangana (89 percent), Tamil Nadu (82 percent), Karnataka (77 percent) and Rajasthan (62 percent). Interestingly, indebted farmers have taken higher credit from institutional sources (60 percent) as compared to the non-institutional sources (40 percent). It is also necessary to note here is that NSSO, in its 59th round survey, has revealed that given the choice, 40 percent farmers will quit farming because it is not profitable, risky and it lacks social status, because of poor remuneration from farming. Distress among the farmers in the country is genuine and the situation is quite depressing in Andhra Pradesh, Karnataka, Maharashtra, Rajasthan, Orissa and Assam. Though one cannot draw any 'one to one' correspondence between distress in the farm sector and the present spate of suicides in some of the states, the farm and farm related activities have the largest stake in explaining the unfortunate occurrences. Considering that 54.6 percent of the workforce in the country is still dependent on agriculture for its livelihood, the wave of suicides has received considerable media attention and are a matter of policy concern.

Concerned with farmers' suicides in some parts of the country, on 29th of September, 2006, Union Cabinet approved the Rehabilitation Package for 31 identified districts in the State of Andhra Pradesh, Karnataka, Kerala and Maharashtra. The implementation period of PM's package was fixed for 3 years and included both immediate and medium term measures. All these attempts to some extent have helped to reduce farmers' suicides insignificantly overtime in several states. However, farmers' suicides still remain major challenge in India.

The agrarian crisis has occurred because of multiple reasons, though inadequate income from

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cultivation is considered to be the prime factor. On the one hand, the decline in public investment in agriculture has increased the transaction cost of the farmers, on the other hand, inadequate institutional credit supply, poor arrangements to supply various inputs required for crop cultivation as well as market for agricultural produce have reduced the cultivation income. It is widely believed now that the agrarian crisis is aggravated since the initiation of economic reforms in India, because the Indian agriculture has been witnessing a few unprecedented shocks and changes over the last one decade. The control on imports of many agricultural products has been gradually removed due to obligations of World Trade Organizations, which has made significant impact on the domestic prices of certain agricultural commodities. Studies carried out in those regions where farmers have committed suicides at a large scale have attributed that the inadequate supply of institutional credit is one of the major reasons for the present crisis.

Farm income is not only very low but the year on year fluctuation is also very high. Constant financial stress and pressure related to ongoing drought and flood conditions and the loss of independence add to the farmer's economic problems; as many of the issues such as disease, weather, government policy, etc., are not within the farmer's control. The debts, however, are personal and need to be repaid. While the prices of crops have been pushed down (often even below the cost of production), the prices of inputs such as seed, fertilizers and pesticides have gone up. With limited resources, farmers depend on borrowed money to purchase seeds and other inputs and to farm their land and a reduction in their income could promptly lead to farmers owing more than they own. Farmers feel a repeated sense of hopelessness due to the loss of crops, income, land and even the loss of a way of life. Another factor that increases suicides is the potential for social isolation due to reasons like the loss of communities as well as geographical remoteness. The lack of access to mental health services in rural areas and the stigma attached to treatment is also a contributing factor. Depression arising from exposure to agricultural chemicals/pesticides may increase the risk for mood disorders and ultimately suicide.

Need of the Study

Farmer suicide has turned out to be a major socio-economic concern in India that has resulted in profound implications on the quality of life of farmers. As per NCRB (2015), a total of 5,650 farmers have committed suicides during 2014, accounting for 4.3 per cent of total suicides victims in the country, of which 5,178 were male farmers and 472 were female farmers. The highest numbers of farmers suicides cases were recorded in Maharashtra (2,568), Telangana (898), Madhya Pradesh (826), Chhattisgarh (443) and Karnataka (321). These five States together accounted for 89.5 per cent of the total farmer suicides reported in the country during 2014.

The prominent causes recognized for farmers suicides were bankruptcy or indebtedness (20.6 per cent), family problems (20.1 per cent), failure of crops (16.8 per cent), illness (13.2 per cent) and drug abuse/alcoholic addiction (4.9 per cent). The main consequence of agrarian distress has been that marginal and small farmers who find it increasingly hard to sustain on farming, are either getting pushed out from agriculture or committing suicide. According to report, the land holding status of the farmers who committed suicide revealed that 44.5 per cent and 27.9 per cent of victims were small farmers and marginal farmers, respectively, and that put together accounted for 72.4 per cent of total farmer suicides. Therefore, there was an urgent need to study the farmer's suicide. The objectives of the study are:

i) To analyze the incidence and spread of farmer suicides in Gujarat state and to map the hot-spots of suicide;

ii) To study the socio-economic profile, cropping pattern and profitability of victim farm households.

iii) To study the causes leading to farmers' suicides.

iv) To recommend suitable policies to alleviate the incidence of farmers' suicides.

The study is based on both primary and secondary data. The secondary data was collected from the different published sources. The primary data was confined exclusively to those victim farmers households who were cultivating either their own land or on lease basis - at the time of survey. The selection of sample of victim farmers' households in Gujarat state for primary data was as per the numbers of suicides given in 2014 publication of NCRB. During 2014, there were 45 numbers

of suicides belonging to farming community and primary data was collected from the selected 30 victim farmer households in Gujarat.

Farmers' Suicide Scenario in Gujarat

Gujarat has historically been known for business acumen of its people. Gujarat state has made rapid strides in its agriculture sector including the agribusiness sub sector during the recent past. Agriculture in Gujarat has been transforming over time from traditional to high value added commercial crops which can be seen from a shift in its cropping pattern from food grains crops to high value cash crops such as oilseeds, fruits, vegetables and spices. The trend in shifting of cropping pattern paved ways for many ancillary industries in the areas of processing, packing, storage, transformation, etc. Agricultural growth in the state is favored by the prevailing eight agro-climatic zones, enterprenuring farming community, policy support from the government, wealth of livestock population, extended coast line and contribution by the agricultural scientist and dedicated NGOs.

Despite of high rate of growth during the last decade, National Crime Records Bureau has recorded a total 45 cases of suicide of farmers in the state of Gujarat during the year 2014. Out of total number of suicides, 68.89 per cent were male farmers and 31.11percent were female farmers. As per land holding size category of farmers, 66.67 per cent were from medium size category, followed by small (17.78 per cent), large (8.89 per cent) and remaining from marginal category (6.67 per cent). The prominent causes recognized for farmers' suicides in Gujarat were other/not known (62.22 per cent), followed by illness (15.55 per cent), marriage related problems (8.89 per cent), farming related problems (6.67 per cent), family related problems (4.44 per cent) and drug abuse/alcoholic addiction (2.22 per cent).

Farmer Suicides in Gujarat have come under the scanner after comments by opposition party leaders in the recent past. They have attacked the Gujarat model of development by pointing at the high number of farmer suicides in Gujarat. The district-wise data shows that epidemic of farmers suicides during the year 2014 was recorded in Devbhoomi Dwarka district covering about 45 percent of total suicides in the state, followed by Panchamahal district (about 22 percent) and Porbandar (almost 12 per cent). These three districts together accounted for about 79 per cent of total number of suicides in the state. The remaining suicide cases were recorded in Amreli, Bhavnagar, Surat and Surendranagar districts. The numbers of suicides were not specific to any particular month and were spread across the year. There is no such compensation in case farmers in the state commit suicide. However, only victim family in Surendranagar district had received compensation of Rs. 10000/- through Agricultural Produce Marketing Committee of Rajkot district where victim farmer had committed the suicide.

Findings from Field Survey Data

• About 90 percent of victims were male farmers while 10 per cent were female farmers.

• Around 83 percent victims were from other backward classes, around 13 percent were from open category while remaining were from scheduled caste category. Majority of the victims were from Hindu religion.

• The highest number of suicides (70 per cent) were recorded in age group of 30-60 years while remaining were from age group up to 30 years.

• In case of 70 percent of household, victim was a main earner. Almost 83 percent of victims were literate and around 80 percent were married with arrange marriage system within their relatives.

• Two third of total number of victims had consumed poison to commit suicide, while about one sixth of victim hanged themselves. Remaining victims adopted the other method of suicide such as jumping into river/well (6.67 per cent), self immolation /burning (6.67 per cent) and accident by slipping on railway track (3.33 per cent).

• The house and farm were the main places where victim had committed suicides (47 per cent each), while in one case each; it was reported in operational area of APMC in Rajkot and on railway track.

• The existing households size was 5.1 members and 70 per cent of households were estimated to be dependent on agriculture as a main occupation. Around 70 per cent of households were joint family while remaining where nuclear family.

• The highest number of farmers who had committed suicides were from medium size land holding group

having land holding between 2-4 ha (33 per cent) followed by marginal and small size land holding group of farmers (about 27 per cent each). Marginal and small land holdings size group put together accounts for 53 per cent of total number of suicides and the lowest proportion of suicide was recorded in large land holding size group. Thus, as expected, marginal and small farm category group found to be vulnerable to this kind of situation.

• The selected households have relatively large land holding of 5.9 acre, of which 44 per cent of land was irrigated having cropping intensity of 109 per cent and irrigation intensity of 119 per cent.

• About 60 percent of victim households have open well as main source of irrigation, followed by 24.11 percent of households have tube well/bore well, while remaining of 16.12 percent households used canal water for irrigation purpose. Thus, groundwater source was main source available with the sample household to irrigate the crops.

• The consumption expenditure of selected households was higher than the annual income (from all sources) in all three consecutive years (2013-14 to 2015-16). It means that income from the all sources was not adequate to meet the required expenditure of family that to particular income from main source was not adequate. In fact, the highest deficit of income (percentage of expenditure on income) was recorded during 2014-15.

• Groundnut and cotton were the major crops grown in kharif season, followed by jowar crop which was cultivated for fodder purpose by some of the households. The productivity level of groundnut realized by the victim household was very low (1.49 qt/acre) and thus income received from sale of groundnut was much lower that it's cost of cultivation/production. On an average, Rs. 30113 per households loss has been reported in groundnut cultivation in 2015-16. Same was found in case of cotton crop cultivation in which selected households had to suffer with loss of Rs. 12426 per hh.

• The negative returns have been reported in case of production of groundnut and cotton crops during 2015-16. So, the case may be of earlier two years as cropping patterns was almost same during 2013-14 and 2014-15. Thus, may be due to low yield of major two crops, the income from the crop cultivation had dropped, which must have put stress on the victim and households to manage the expenditure with short of income.

• Selected victim households had taken significant amount of loan from informal sources such as relatives and friends, agriculture input shop, of which loan from relatives and friends earlier was used for both farming and non farming purpose, while loan taken from agro shop owner was used for only farming purpose. Besides, loan was also taken by selected victim households from trader and commission agents to fulfill non farming/domestic requirements.

• Besides having loan from informal sources, few selected households had taken loan from formal sources also such as cooperative society/bank and commercial banks. As compared to the amount borrowed from non-formal sources (between Rs. 1-3 lakh), it was around 0.5 lakh in case of formal sources. Thus, inability of payment of loan taken from the informal sources must have put pressure on victim and its family which must have forced the victim to commit suicide.

Causes and After Effect of Suicide

• About 93 per cent of the households/ respondents have mentioned that victim was mixing with everyone and his/her behavior was proper. No difference in behavior and approach of victim was noticed by anyone around him/her. While remaining households had noticed some change in behavior of victim as he/she was not mixing/mingling with them. About 70 per cent of households reported that victim was taking food properly, while 30 percent households observed that victim was not eager to have food. On enquiry, it was observed that none of victim had tried to commit suicide earlier and thus there was no failure attempt recorded.

• None of the household had any dispute on property related issues. In case of marriage related issues such as dowry related issues, extra marital affairs, wife went with somebody and got married with that person, and wife expired by suicide five year ago, shocked by that, heavy burden of family), one case was reported under each above cause. The family problems/commitments (such as daughter's marriage, social functions, son's marriage, frequent quarrel among the family members, more and more responsibility on single person and his son suicide earlier; that is why he was depressed) were also

reported as main cause of suicide.

• The highest numbers of suicides were recorded due to acute economic crisis/sudden fall in social status which accounts for 37 per cent of total suicides followed by suicides due to illness (27 percent), depression (27 per cent), fall in social reputation (17 per cent), drug abuse/alcoholic addiction (13 per cent). The family problems, interpersonal disagreement/fight on some issue and marriage related issues have also contributed in pushing the victim towards such drastic step of ending the life.

• Majority of households have reported that the farming related problems such as high cost of production (repeated sowing; poor germination, high labour charges); crop failure (due to lack of access to irrigation water and pests diseases; failure of rainfall/drought; land submerge); high expectations of output and prices, high cost of bt cotton seed, inability to sell output, etc were major causes of suicides.

• During the last three years, due to low income, selected farmers household who had taken loan for crop production, purchase of farm equipments could not repay their loan in time. Also some households had taken loan from non institutional sources. Thus, on non repayment of loan amount in time, victim households had faced pressure from both of these agencies.

• The ranking of causes indicate that majority of households top ranked the cause of failure of crop/s followed by indebtedness (institutional & non-institutional) and illness.

• About 43 per cent of households faced the severe crisis as no earning member was with family which must have put family member/s under depression. In case of 33 percent households, agricultural activities had stopped while insecurity in the family was felt by 30 per cent households. In case of 27 per cent households, schooling of the children got stopped. Besides, other impacts were that the family member/s felt seriously ill, family had to postpone their son/daughter's marriage, and forced them to sell land and livestock.

• The respondents were asked to give suggestion to avert suicides in future. Few respondents had given suggestions such as government should help in drought years, complete prohibition on drunkenness in village, and provision of medical facilities at village level.

Policy Implications

• Government should provide the support to the farmers during drought years by adopting a multi-pronged approach to mitigate the effects of the drought.

• The NCRB (2015) data shows that prominent causes recognized for farmers' suicides in Gujarat were other/not known (62.22 per cent), Besides, three cases registered at Mehsana district police station were mistakenly reported. Thus, there is a need to have a proper responsible mechanism to create data base on farmers' suicide for proper policy formulation and its implementation.

• The primary data shows that the highest numbers of suicides were recorded due to acute economic crisis/sudden fall in social status followed by suicides due to illness, depression, fall in social reputation, and drug abuse/alcoholic addiction. Thus, there is a need to stabilize the agriculture income through crop diversification and making available non-farm employment to rural population. There is also a need to execute the complete ban of availability of local liquor at
village level.

• Majority of households have reported that the farming related problems such as high cost of production, crop failure, high expectations of output and prices, high cost of bt cotton seed, inability to sell output were major causes of suicides. Therefore, there is urgent need to reduce the cost of production of crop by adopting cost-effective farming techniques and increase in income through value addition.

• The State should ensure the creation of an environment which supports effective financial intermediation and smooth flow of institutional credit for needy farmer.

• Civil society institutions including NGOs, religious organizations, farmer clubs, panchayats and political parties have to come forward to sensitize and educate the people on social evils like unethical behavior, ostentatious expenditure on social functions, dowry problem, alcoholism and

declining work ethic among youth.

• Depression arising from exposure to agricultural chemicals/ pesticides increases the risk for mood disorders and ultimately suicide. Therefore, easy access and availability of insecticides/pesticides should be contained or at least its toxicity should be reduced to non lethal levels.

• There is a need to educate the communality to identify depression and alcoholism and initiate treatment. The lack of access to mental health services in rural areas and the stigma attached to treatment is also a contributing factor. Therefore, medical facilities should be made available at village level.

COMMODITY REVIEWS

Foodgrains

During the month of January,2018 the Wholesale, Price Index (Base 2011-12=100) of pulses decreased by 5.29%, cereals increased by 0.07% & foodgrains decreased by 0.28% respectively over the previous month.

All India Index Number of Wholesale Prices

(Base Year 2011-2012=100)

Commodity	Weight (%)	WPI for the Month of january 2017	WPI for the Month of December 2017	WPI A year ago	Percentage change during	
					A month	A year
1	2	3	4	5	6	7
Paddy	1.43	150.4	148.8	143.8	1.08	4.59
Wheat	1.028	140.8	139.4	151.3	1.00	-6.94
Jowar	0.067	118.3	121.3	132.3	-2.47	-10.58
Bajra	0.086	131.7	133.9	151.9	-1.64	-13.30
Maize	0.189	116.4	117.9	134.6	-1.27	-13.52
Barley	0.014	141.6	142.9	161.6	-0.91	-12.38
Ragi	0.007	207.9	217.6	242.6	-4.46	-14.30
Cereals	2.824	143.4	142.3	146.3	0.77	-1.98
Pulses	0.639	127.1	134.2	182.7	-5.29	-30.43
Foodgrains	3.465	140.4	140.8	153.0	-0.28	-8.24

Source Office of the Economic Adviser, M/O Commerce and Industry.

The following Table indicates the State wise trend of Wholesale Prices of Cereals during the month of January, 2018.

Commodity	Main Trend	Rising	Falling	Mixed	Steady
Rice	Steady		Gujarat		ASSAM
		Karnataka		Uttar pradesh	Jharkhand
		Orissa	Andhra pradesh	Kerala	West Bengal
Wheat	Falling	Delhi	West Bengal		Jharkhand
			Gujarat	Gujarat	Karnataka
		Punjab	Rajasthan		Maharastra
			Madha pradesh	Uttar pradesh	
Jowar	Rising	Uttar pradesh	Andhra pradesh	Gujarat	
		Maharashtra	Delhi		
		Rajasthan			
		Karnataka			
Bajra	Falling	Rajasthan	Andhra pradesh	Maharashtra	
			Delhi	Gujarat	

Commodity	Main Trend	Rising	Falling	Mixed	Steady
			Uttar pradesh		
		Karnataka			
Maize	Rising	Haryana		Uttar pradesh	
		Karnataka			
		Andhra pradesh	Gujarat		
			Rajasthan		

Procurement of Rice

The total procurement of Rice in the current marketing season i.e 2017-2018, up to 31.01.2018 stood at 27.90 million tonnes, as against 27.23 million tonnes of rice procured, during the corresponding period of last year. The details are given in the following table:

PROCUREMENT OF RICE

(In Thousand Tonnes)

State	Marketing Season 2018-19 (upto 31.01.2018)		Corresponding Period of last Year 2017-18		Marketing Year (October-September) 2016-17		2015-16	
	Procurement	%age to Total	Procurement	%age to Total	Procurement	%age to Total	Procurement	%age to Total
1	2	3	4	5	6	7	8	9
Andhra Pradesh	1795	6.43	1785	6.40	3725	9.78	4326	12.65
Chhatisgarh	3190	11.43	4451	15.95	4022	10.56	3442	10.06
Haryana	3966	14.22	3570	12.80	3583	9.40	2861	8.36
Maharashtra	127	0.46	176	0.63	309	0.82	230	0.67
Punjab	11833	42.42	11044	39.59	11052	29.00	9350	27.33
Tamil Nadu	2	0.01	9	0.03	144	0.38	1191	3.48
Uttar Pradesh	2543	9.12	1399	5.01	2354	6.18	2910	8.50
Uttarakhand	35	0.13	584	2.09	706	1.85	598	1.75
Others	4407	15.80	4208	15.08	12210	32.04	9301	27.19
Total	27898	100.00	27226	100.00	38105	100.00	34209	100.00

Source: Department of Food & Public Distribution.

Procurement of Wheat

The total procurement of wheat in the current marketing season i.e 2017-2018 up to 31st August, 2017 is 30.83 million tonnes against a total of 22.96 million tonnes of wheat procured during last year. The details are given in the following table:

Procurement of Wheat

State	Marketing Season 2017-18 (upto 31.08.2017)		Corresponding Period of last Year 2016-17		Marketing Year 2016-17		(April-March) 2015-16	
	Procurement	%age to Total	Procurement	%age to Total	Procurement	%age to Total	Procurement	%age to Total
1	2	3	4	5	6	7	8	9
Haryana	7432	24.11	6752	29.41	6722	29.32	6778	24.13
Madhya Pradesh	6725	21.82	3992	17.39	3990	17.40	7309	26.02
Punjab	11706	37.98	10649	46.38	10645	46.42	10344	36.83
Rajasthan	1245	4.04	762	3.32	762	3.32	1300	4.63
Uttar Pradesh	3699	12.00	797	3.47	802	3.50	2267	8.07
Others	18	0.06	10	0.04	9	0.04	90	0.32
Total	30825	100.00	22962	100.00	22930	100.00	28088	100.00

Source: Department of Food & Public Distribution.

Commercial Crops

Oil Seeds: The Wholesale Price Index (WPI) of nine major oilseeds as a group stood at 132.7 in January 2018 showing an increase of 2.7% and decrease of 37.1% over the previous month and year respectively. The WPI of copra (coconut) increased by 2.6%, gingelly seed by 3%, safflower (kardi seed) by 4.2% and soyabean by 9% over the previous month. wpi of soyabean decreased by 3.0%, and groundnut seed by 0.4%, cotton seed by 1%, rape & mustard seed by 0.4%, sunflower by 0.4% and niger seed by 1.1% respectively over the previous month.

Manufacture of Vegetable and Animal Oils and Fats: The WPI of Manufacture of vegetable and animal oils and fats as a group stood at 112.4 in January, 2018 showing an increase of 1.1% and 1.3% over the previous month and year respectively. The WPI of copra oil increased by 0.6%, sunflower oil by 1.6%, rapeseed oil by 0.4% , soyabean oil by 4.5%,and cotton seed oil by 1.2% over the previous month. The WPI of groundnut oil decreased by 1.5% and mustard oil by 0.4% over the previous month.

Fruits & Vegetable: The WPI of fruits & vegetable as a group stood at 146 in January, 2018 showing a decrease of 10% and 33.7% over the previous month and year respectively.

Potato: The WPI of potato stood at 111.4 in January, 2018 showing a decrease of 5.4% over the previous month and a decrease of 26.3% over the previous year.

Onion: The WPI of onion stood at 346.2 in January, 2018 showing a decrease of 4.6% and an increase of 37.2% over the previous month and year respectively.

Condiments & Spices: The WPI of condiments & spices (group) stood at 130.7 in January, 2018 showing an increase of 2.0% over the previous month and a decrease of 63.4% over the year. The WPI of chillies (dry) increased by 3.5%,black pepper increased by 0.1% and turmeric decreased by 2.2% over the previous month.

Raw Cotton: The WPI of raw cotton stood at 110.6 in January, 2018 showing an increase of 2.8% over the previous month and a decrease of 52.8% over the year.

Raw Jute: The WPI of raw jute stood at 159.5 in January, 2018 showing a decrease of 3.3% and 60.5% over the previous month and year respectively.

Wholesale Price Index of Commercial Crops for The Month of December, 2017

Commodity	Latest	Month	Year	% Variation Over	
	Jan, 2018	Dec, 2017	Jan, 2017	Month	Year
Oil Seeds	132.7	129.2	211.3	2.7	-37.2
Groundnut Seed	113.4	113.8	251.3	-0.4	-54.9
Rape & Mustard Seed	137.6	138.2	230.6	-0.4	-40.3
Cotton Seed	143.4	144.8	222.8	-1.0	-35.6
Copra (Coconut)	215.5	210.1	139.6	2.6	54.4
Gingelly Seed (Sesamum)	132.2	128.3	305.3	3.0	-56.7
Niger Seed	200.8	203	314.5	-1.1	-36.2
Safflower (Kardi Seed)	138.8	133.2	164.3	4.2	-15.5
Sunflower	99.8	100.2	171.1	-0.4	-41.7
Soyabean	136.6	125.3	178.1	9.0	-23.3
Manufacture of vegetable and animal oils and fats	112.4	111.2	111.0	1.1	1.3
Mustard Oil	120.4	120.9	125.8	-0.4	-4.3
Soyabean Oil	110.7	105.9	162.3	4.5	-31.8
Sunflower Oil	105.8	104.1	133.4	1.6	-20.7
Groundnut Oil	104.3	105.9	213.0	-1.5	-51.0
Rapeseed Oil	112.1	111.7	115.8	0.4	-3.2
Copra oil	179.2	178.1	142.2	0.6	26.0
Cotton seed Oil	103.6	102.4	204.5	1.2	-49.3
Fruits & Vegetables	146	162.2	220.3	-10.0	-33.7
Potato	111.4	117.7	151.2	-5.4	-26.3
Onion	346.2	363	252.4	-4.6	37.2
Condiments & Spices	130.7	128.2	357.4	2.0	-63.4
Black Pepper	154.6	154.4	726.7	0.1	-78.7
Chillies (Dry)	120.8	116.7	397.6	3.5	-69.6
Turmeric	125.5	128.3	240.9	-2.2	-47.9
Raw Cotton	110.6	107.6	234.3	2.8	-52.8
Raw Jute	159.5	154.4	403.4	3.3	-60.5

Statistical Tables

Wages

1. DAILY AGRICULTURAL WAGES IN SOME STATES (CATEGORY-WISE)

(In Rs.)

State	District	Centre	Moth & Year	Daily Normal Working Hours	Field Labour		Other Agri. Labour		Herdsman		Skilled Labour		
											Carpenter	Black Smith	Cobbler
					M	W	M	W	M	W	M	M	M
Andhra Pradesh	Krishna	Ghantasala	Oct, 17	8	NA	200	500	NA	250	NA	500	400	NA
	Guntur	Tadikonda	Oct, 17	8	300	275	325	NA	275	NA	NA	NA	NA
Telangana	Ranga Reddy	Arutala	Dec, 17	8	615	260	425	NA	NA	NA	450	500	NA
Karnataka	Bangalore	Harisandra	Sep, 17	8	360	340	400	350	400	300	600	450	NA
	Tumkur	Gidlahali	Sep,17	8	250	200	250	200	250	NA	300	280	NA
Maharashtra	Bhandara	Adyal	Sep, 17	8	200	150	250	150	200	150	350	250	200
	Chandrapur	Ballarpur	Dec, 17	8	300	150	300	150	200	NA	250	200	150
Jharkhand	Ranchi	Gaitalsood	June, 17	8	229	229	229	229	229	229	317	317	NA

1.1 DAILY AGRICULTURAL WAGES IN SOME STATES (OPERATION-WISE)

(In Rs.)

State	District	Centre	Month & Year	Type of Labour	Normal Daily WorkingHours	Ploughing	Sowing	Weeding	Harvesting	Other Agri Labour	Herdsman	Skilled Labours		
												Carpenter	Black Smith	Cobbler
Assam	Barpeta	Laharapara	Apr, 17	M	8	250	250	250	250	250	250	350	250	350
				W	8	NA	NA	200	200	200	NA	NA	NA	NA
Bihar	Muzaffarpur	Bhalui Rasul	June,17	M	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Shekhpura	Kutaut	June,17	M	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chhattisgarh	Dhamtari	Sihava	Oct, 17	M	8	NA	170	NA	170	150	175	300	200	200
				W	8	NA	150	NA	150	130	NA	NA	100	NA
Gujarat*	Rajkot	Rajkot	Oct,17	M	8	248	254	235	223	203	197	488	475	463
				W	8	NA	200	229	216	197	178	NA	NA	NA
	Dahod	Dahod	Oct,17	M	8	293	293	164	164	164	NA	371	321	286
				W	8	NA	250	164	164	164	NA	NA	NA	NA

1.1 DAILY AGRICULTURAL WAGES IN SOME STATES (OPERATION-WISE)-*CONTD.*

State	District	Centre	Month & Year	Type of Labour	Normal Daily WorkingHours	Ploughing	Sowing	Weeding	Harvesting	Other Agri Labour	Herdsman	Skilled Labours		
												Carpenter	Black Smith	Cobbler
Haryana	Panipat	Ugarakheri	Oct, 17	M	8	400	400	NA	NA	400	NA	550	400	NA
				W	8	NA	300	NA	NA	300	NA	NA	NA	NA
Himachal Pradesh	Mandi	Mandi	June,16	M	8	NA	182	182	182	182	182	300	300	NA
				W	8	NA	182	182	182	182	182	NA	NA	NA
Kerala	Kozhikode	Koduvally	Oct, 17	M	4-8	960	800	NA	800	968	NA	900	NA	NA
				W	4-8	NA	NA	650	650	650	NA	NA	NA	NA
	Palakkad	Elappally	Oct, 17	M	4-8	NA	500	NA	500	500	NA	650	NA	NA
				W	4-8	NA	NA	300	300	300	NA	NA	NA	NA
Madhya Pradesh	Hoshangabad	Sangarkhera	Oct,17	M	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Satna	Kotar	Oct,17	M	8	200	200	200	200	200	200	300	300	300
				W	8	NA	200	200	200	200	200	NA	NA	NA
	Shyopurkala	Vijaypur	Oct,17	M	8	NA	300	300	300	NA	300	300	300	NA
				W	8	NA	300	300	300	NA	300	NA	NA	NA
Odisha	Bhadrak	Chandbali	Aug,17	M	8	300	300	300	350	310	200	450	400	350
				W	8	NA	250	250	250	260	200	NA	NA	NA
	Ganjam	Aska	Aug, 17	M	8	300	250	250	300	300	250	500	350	300
				W	8	NA	200	200	250	220	200	NA	NA	NA
Punjab	Ludhiyana	Pakhowal	Aug, 17	M	8	480	480	NA	NA	400	NA	480	480	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rajasthan	Barmer	Kuseep	Dec, 17	M	8	NA	NA	400	NA	NA	500	700	500	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	300	NA
	Jalore	Sarnau	Dec, 17	M	8	NA	NA	300	NA	NA	NA	350	300	NA
				W	8	NA	NA	NA	300	NA	NA	NA	300	NA
Tamil Nadu*	Thanjavur	Pulvarnatham	Oct, 17	M	8	NA	354	NA	346	371	NA	475	338	350
				W	8	NA	150	141	136	137	NA	NA	NA	NA
	Tirunelveli	Malayakulam	Oct, 17	M	8	NA	250	NA	400	366	NA	NA	NA	NA
				W	8	NA	183	173	245	NA	NA	NA	NA	NA
Tripura	State Average		Oct, 17	M	8	361	323	311	317	304	306	359	324	275
				W	8	NA	256	256	252	253	280	NA	NA	NA

1.1 AVERAGE DAILY AGRICULTUREAL WAGES IN SOME STATES (OPERATION-WISE)-*CONCLD.*

(In Rs.)

State	District	Centre	Month & Year	Type of Labour	Normal Daily WorkingHours	Ploughing	Sowing	Weeding	Harvesting	Other Agri Labour	Herdsman	Skilled Labours		
												Carpenter	Black Smith	Cobbler
Uttar Pradesh*	Meerut	Ganeshpur	Oct, 17	M	8	300	277	255	255	266	NA	450	NA	NA
				W	8	NA	272	240	231	240	NA	NA	NA	NA
	Aurraiya	Aurraiya	Oct, 17	M	8	170	175	185	307	171	NA	500	NA	.NA
				W	8	NA	NA	185	307	171	NA	NA	NA	NA
	Chandauli	Chandauli	Oct, 17	M	8	200	200	200	NA	200	NA	400	NA	NA
				W	8	NA	200	200	NA	200	NA	NA	NA	NA

M - Man
W - Woman
NA - Not Available
NR – Not Reported
* States reported district average daily wages

PRICES

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA

Commodity	Variety	Unit	State	Centre	Jan-18	Dec-17	Jan-17
Wheat	PBW 343	Quintal	Punjab	Amritsar	1690	1680	1800
Wheat	Dara	Quintal	Uttar Pradesh	Chandausi	1660	1655	1870
Wheat	Lokvan	Quintal	Madhya Pradesh	Bhopal	1648	1630	1980
Jowar	-	Quintal	Maharashtra	Mumbai	2300	2300	2400
Gram	No III	Quintal	Madhya Pradesh	Sehore	3352	3630	5500
Maize	Yellow	Quintal	Uttar Pradesh	Kanpur	1380	1375	1440
Gram Split	-	Quintal	Bihar	Patna	6400	7000	13200
Gram Split	-	Quintal	Maharashtra	Mumbai	5600	5900	8700
Arhar Split	-	Quintal	Bihar	Patna	6500	7000	9800
Arhar Split	-	Quintal	Maharashtra	Mumbai	5300	6000	6400
Arhar Split	-	Quintal	NCT of Delhi	Delhi	5520	5150	7200
Arhar Split	Sort II	Quintal	Tamil Nadu	Chennai	5500	5700	8000
Gur	-	Quintal	Maharashtra	Mumbai	3900	4100	3850
Gur	Sort II	Quintal	Tamil Nadu	Coimbatore	5200	5400	5300
Gur	Balti	Quintal	Uttar Pradesh	Hapur	2500	2500	2800
Mustard Seed	Black (S)	Quintal	Uttar Pradesh	Kanpur	3700	3700	4175
Mustard Seed	Black	Quintal	West Bengal	Raniganj	4200	4200	4500
Mustard Seed	-	Quintal	West Bengal	Kolkata	4200	4250	4200
Linseed	Bada Dana	Quintal	Uttar Pradesh	Kanpur	4600	4600	5875
Linseed	Small	Quintal	Uttar Pradesh	Varanasi	4600	4500	4730
Cotton Seed	Mixed	Quintal	Tamil Nadu	Virudhunagar	1750	1700	2300
Cotton Seed	MCU 5	Quintal	Tamil Nadu	Coimbatore	2560	2580	2750
Castor Seed	-	Quintal	Telangana	Hyderabad	3900	4250	3400
Sesamum Seed	White	Quintal	Uttar Pradesh	Varanasi	6700	6580	8160
Copra	FAQ	Quintal	Kerala	Alleppey	13250	13400	8850
Groundnut	Pods	Quintal	Tamil Nadu	Coimbatore	5300	5200	5500
Groundnut	-	Quintal	Maharashtra	Mumbai	5050	5350	6000
Mustard Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1330	1330	1400
Mustard Oil	Ordinary	15 Kg.	West Bengal	Kolkata	1390	1377	1535
Groundnut Oil	-	15 Kg.	Maharashtra	Mumbai	1400	1460	1510
Groundnut Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	1710	1740	1950

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA-*CONTD.*

Commodity	Variety	Unit	State	Centre	Jan-18	Dec-17	Jan-17
Linseed Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1425	1425	1470
Castor Oil	-	15 Kg.	Telangana	Hyderabad	1320	1425	1163
Sesamum Oil	-	15 Kg.	NCT of Delhi	Delhi	1550	1550	1510
Sesamum Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	2100	2100	2175
Coconut Oil	-	15 Kg.	Kerala	Cochin	2880	2940	1935
Mustard Cake	-	Quintal	Uttar Pradesh	Kanpur	1830	1830	2325
Groundnut Cake	-	Quintal	Telangana	Hyderabad	2536	2571	2929
Cotton/Kapas	NH 44	Quintal	Andhra Pradesh	Nandyal	5000	5100	5500
Cotton/Kapas	LRA	Quintal	Tamil Nadu	Virudhunagar	4600	NT	5266
Jute Raw	TD 5	Quintal	West Bengal	Kolkata	3850	3450	3720
Jute Raw	W 5	Quintal	West Bengal	Kolkata	3900	3500	3770
Oranges	-	100 No	NCT of Delhi	Delhi	667	667	542
Oranges	Big	100 No	Tamil Nadu	Chennai	NA	NA	500
Banana	-	100 No.	NCT of Delhi	Delhi	500	550	350
Banana	Medium	100 No.	Tamil Nadu	Kodaikkanal	660	650	500
Cashewnuts	Raw	Quintal	Maharashtra	Mumbai	100000	100000	80000
Almonds	-	Quintal	Maharashtra	Mumbai	72000	72000	70000
Walnuts	-	Quintal	Maharashtra	Mumbai	75000	75000	95000
Kishmish	-	Quintal	Maharashtra	Mumbai	18000	17000	11000
Peas Green	-	Quintal	Maharashtra	Mumbai	2700	2800	3200
Tomato	Ripe	Quintal	Uttar Pradesh	Kanpur	1100	1120	560
Ladyfinger	-	Quintal	Tamil Nadu	Chennai	1700	2350	2700
Cauliflower	-	100 No.	Tamil Nadu	Chennai	2000	2700	1500
Potato	Red	Quintal	Bihar	Patna	810	1000	1000
Potato	Desi	Quintal	West Bengal	Kolkata	540	650	475
Potato	Sort I	Quintal	Tamil Nadu	Mettuppalayam	2120	2150	1270
Onion	Pole	Quintal	Maharashtra	Nashik	2850	2800	600
Turmeric	Nadan	Quintal	Kerala	Cochin	14500	14500	15500
Turmeric	Salam	Quintal	Tamil Nadu	Chennai	11500	11300	8300
Chillies	-	Quintal	Bihar	Patna	11200	11200	8000

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA-*CONCLD.*

Commodity	Variety	Unit	State	Centre	Jan-18	Dec-17	Jan-17
Black Pepper	Nadan	Quintal	Kerala	Kozhikode	38000	44000	58000
Ginger	Dry	Quintal	Kerala	Cochin	13500	13000	15000
Cardamom	Major	Quintal	NCT of Delhi	Delhi	85000	115000	124000
Cardamom	Small	Quintal	West Bengal	Kolkata	110000	105000	140000
Milk	Buffalo	100 Liters	West Bengal	Kolkata	5200	5200	3800
Ghee Deshi	Deshi No 1	Quintal	NCT of Delhi	Delhi	73370	70035	34017
Ghee Deshi	-	Quintal	Maharashtra	Mumbai	46000	46000	46000
Ghee Deshi	Desi	Quintal	Uttar Pradesh	Kanpur	39400	39350	36400
Fish	Rohu	Quintal	NCT of Delhi	Delhi	13000	13000	14500
Fish	Pomphrets	Quintal	Tamil Nadu	Chennai	36000	35000	35000
Eggs	Madras	1000 No.	West Bengal	Kolkata	5000	4500	3900
Tea	-	Quintal	Bihar	Patna	21300	21300	21250
Tea	Atti Kunna	Quintal	Tamil Nadu	Coimbatore	38000	38000	35000
Coffee	Plant-A	Quintal	Tamil Nadu	Coimbatore	24000	24500	26000
Coffee	Rubusta	Quintal	Tamil Nadu	Coimbatore	14000	14500	17500
Tobacco	Kampila	Quintal	Uttar Pradesh	Farukhabad	3850	3850	4500
Tobacco	Raisa	Quintal	Uttar Pradesh	Farukhabad	2260	2270	3600
Tobacco	Bidi Tobacco	Quintal	West Bengal	Kolkata	14800	13800	13800
Rubber	-	Quintal	Kerala	Kottayam	10900	11600	12600
Arecanut	Pheton	Quintal	Tamil Nadu	Chennai	52000	53000	32700

3. WHOLESALE PRICES OF SOME IMPORTANT AGRICULTURAL COMMODITIES IN INTERNATIONAL MARKETS DURING YEAR 2018

Commodity	Variety	Country	Centre	Unit	JAN
CARDAMOM	Guatmala Bold Green	U.K.	-	Dollar/MT	18500
				Rs./Qtl	117642
CASHEW KERNELS	Spot U.K. 320s	U.K.	-	Dollar/MT	11535
				Rs./Qtl	73351
CASTOR OIL	Any Origin ex tank Rotterdam	Netherlands	-	Dollar/MT	1612
				Rs./Qtl	10251
CHILLIES	Birds eye 2005 crop	Africa	-	Dollar/MT	5800
				Rs./Qtl	36882
CLOVES	Singapore	Madagascar	-	Dollar/MT	7900
				Rs./Qtl	50236
COCONUT OIL	Crude Phillipine/Indonesia, cif Rotterdam	Netherlands	-	Dollar/MT	1365
				Rs./Qtl	8680
COPRA	Phillipines cif Rotterdam	Phillipine	-	Dollar/MT	769
				Rs./Qtl	4890
CORRIANDER		India	-	Dollar/MT	1650
				Rs./Qtl	10492
CUMMIN SEED		India	-	Dollar/MT	3300
				Rs./Qtl	20985
MAIZE		U.S.A.	Chicago	C/56 lbs	355
				Rs./Qtl	887
OATS		CANADA	Winnipeg	Dollar/MT	340
				Rs./Qtl	2164
PALM KERNAL OIL	Crude Malaysia/Indonesia, cif	Netherlands	-	Dollar/MT	1255
				Rs./Qtl	7981
PALM OIL	Crude Malaysian/Sumatra, cif	Netherlands	-	Dollar/MT	685
				Rs./Qtl	4356
PEPPER (Black)	Sarawak Black lable	Malaysia	-	Dollar/MT	5000
				Rs./Qtl	31795
RAPESEED	Canola	CANADA	Winnipeg	Can Dollar/MT	485
				Rs./Qtl	2500
	UK delivered rapeseed, delivered Erith(buyer)	U.K.	-	Pound/MT	275
				Rs./Qtl	2482
RAPESEED OIL	Refined bleached and deodorised ex-tanks,broker price	U.K.	-	Pound/MT	669
				Rs./Qtl	6039
SOYABEAN MEAL	UK produced 49% oil & protein ('hi-pro') ex-mill seaforth UK bulk	U.K.	-	Pound/MT	305
				Rs./Qtl	2753
SOYABEAN OIL		U.S.A.	-	C/lbs	33
				Rs./Qtl	4625

3. WHOLESALE PRICES OF SOME IMPORTANT AGRICULTURAL COMMODITIES IN INTERNATIONAL MARKETS DURING YEAR 2018-*CONTD.*

Commodity	Variety	Country	Centre	Unit	JAN
SOYABEANS	Refined bleached and deodorised ex-tanks,broker price	U.K.	-	Pound/MT	651
				Rs./Qtl	5877
		U.S.A.	-	C/60 lbs	941
				Rs./Qtl	2196
	US NO.2 yellow	Netherlands	Chicago	Dollar/MT	385
				Rs./Qtl	2451
SUNFLOWER SEED OIL	Refined bleached and deodorised ex-tanks,broker price	U.K.	-	Pound/MT	724
				Rs./Qtl	6536
Wheat		U.S.A.	Chicago	C/60 lbs	435
				Rs./Qtl	1015

Source - Public Ledger

FOREIAN EXCHANAE RATES

Currency	JAN
CanDollar	51.57
UKPound	90.27
USDollar	63.59

Crop Production

SOWING AND HARVESTING OPERATIONS NORMALLY IN PROGRESS DURING APRIL, 2018

State	Sowing	Harvesting
(1)	(2)	(3)
Andhra Pradesh	Autumn Rice, Sugarcane.	Summer rice, Jowar (R), Ragi (R), Small Millets (R), Other Rabi Pulses, Sugarcane, Cotton.
Assam	Autumn Rice, Maize, Small Millets (R), Tur (R), Sugarcane, Cotton, Mesta.	Wheat, Tur (R), Sown during previous year.
Bihar	Jowar (K), Bajra, Jute.	Wheat, Barley, Gram, Tur (K), Castorseed, Linseed.
Gujarat	Sugarcane.	Castorseed, Onion.
Himachal Pradesh	Maize, Summer Potato (Hills), Sugarcane, Ginger Chillies (Dry), Sesamum, Cotton, Turmeric.	Wheat, Barley, Gram, Other Rabi Pulses, Rapeseed and Mustard, Linseed.
Jammu & Kashmir	Autumn Rice, Jowar (R), Maize, Ragi, Small Millets (K), Summer Potato, chillies (Dry), Tobacco, Sannhemp, Onion.	Wheat, Barley, Small Millets (R), Gram, Sesamum, Linseed, Onion.
Karnataka (Plains)	Maize, Urad (K) Mung (K), Summer Potato (Hills) Tobacco, Castorseed, Seasamu, Sweet Potato (Hills), Sannhemp, Onion (2nd Crop).	Summer Rice, Gram, Urad (R), Summer Potato, Cotton, Turmeric, Onion (1st Crop). Tapioca.
Kerala	Autumn Rice, Ragi, Ginger, Turmeric, Tapioca.	Summer Rice, Tur (R), Other Rabi Pulses, Sesamum,
Madhya Pradesh	Sugarcane, Onion	Wheat, Barley, Tur (K), Winter Potato (Plains), Castorseed, Linseed, Onion.
Maharashtra	Sugarcane.	Maize (R), Wheat Gram, Other Rabi Pulses, Cotton, Onion.
Manipur	Maize, Turmeric	Gram.
Orissa	Sugarcane, Chillies (Dry)	Wheat, Barley, Urad (R), Mung (R), Chillies (Dry).
Punjab and Haryana	Tur (K), Potato, Sugarcane, Ginger, Chillies (Dry), Sweet Potato, Turmeric.	Wheat, Barley, Small Millets (R), Gram, Tur (K), Other Rabi Pulses, Potato, Castorseed, Rapeseed and Mustard, Linseed, Onion.
Rajasthan	Sugarcane.	Wheat, Barley, Urad (R), Mung (R), Other Rabi Pulses, Tobacco, Castorseed, Rapeseed and Mustard, Linseed.

SOWING AND HARVESTING OPERATIONS NORMALLY IN PROGRESS DURING MARCH, 2018-*CONTD.*

State	Sowing	Harvesting
(1)	(2)	(3)
Tamil Nadu	Summer Rice, Jowar (R), Summer Potato, Sugarcane, Pepper (Black), Chillies (Dry), Groundnut (Late), Sesamum Cotton, Onion Sannhemp.	Winter Rice, Jowar (R), Tur (R), Mung (K), Winter Potato (Hills), Sugarcane, Chillies, (Dry), Tobacco, Groundnut (Early), Cotton, Onion.
Tripura	Autumn Rice, Maize, Sugarcane, Ginger, Chillies, (Dry), Sesamum, Cotton, Jute.	Summer Rice, Chillies (Dry), Tobacco.
Uttar Pradesh	Sugarcane, Chillies (Dry), Cutton, Jute, Mesta.	Summer Rice, Wheat, Barley, Gram, Tur (K), Tobacco, Castorseed, Rapeseed and Mustard, Linseed, Onion, Sugarcane.
West Bengal	Autumn Rice, Maize, Tur (K), Sugarcane, Ginger Chillies (Dry), Sesamum, Jute, Mesta.	Summer Rice, Wheat, Barley, Gram, Tur (K), Urad (R), Other Rabi Pulses, Winter Potato (Plains), Chillies (Dry).
Delhi	Jowar (K), Sugarcane, Tobacco, Onion.	Wheat, Gram, Tur (K) Rapeseed and Mustard, Linseed.

(K)--Kharif (R)--- Rabi