

**Q.1. DONKERS, H, “VECHTDAL FOOD COMMUNITY, “A Case of Regional Agriculture in Netherlands.” *Journal of Rural development*, Vol.27, No (1), 2008; pp. 67-89.**

This paper put forward “Regional agriculture” as an alternative to conventional agriculture. Instead of producing ‘commodities’ for world with focus of low value and high volume (conventional agriculture) it focuses on production of regional products with a focus on taste, value and local traditions. In regional agricultural model particular area partners in agriculture and food chain (farmers, processors, shops, restaurants etc.), partners that are oriented (nature, landscape, tourism, restaurants etc.) and others are work together to increase the value of the products and area itself. This paper carried forward a case study of Vechtdal community of production of Netherlands as an ideal example of regional agriculture. The paper has taken a note on the benefits of regional agriculture as it has been observed in Vechtdal. The reinforcement of individual small scale producers (artisan) and increase of their income, it brings together all the actors in a region to develop a new regional product which have higher value in the world market etc. It also highlights several aspects of regional agriculture such as cooperation, organization structure, marketing approach, regional blending strategy, the competitiveness, tasks and function that should be carried out, and must link up with the market demand. It concludes that regional agriculture (Vechtdal regional agriculture as example) is capable of meeting the common goal of production and sales of regional products combined with the production of nature and landscape.

**Q.1. SURAYYA, T et al., “Sericulture-Based Micro Enterprise as A Source Of Rural Livelihood And Poverty Alleviation.” *Journal of Rural development*, Vol.27, No (1), 2008; pp. 149-176.**

Sericulture is a labour intensive agricultural activity. It is highly suitable to rural areas of India since large number of rural population are jobless or disguised employed. This paper attempt to explore the prospects of sericulture and its constraints in the selected villages of Anantapur districts of Andhra Pradesh. The paper bring out that being a drought prone area sericulture is much suitable option over

the food grain production in Anantapur. The cost-benefit analysis also talks in favour of the sericulture. The profit is almost 80% in sericulture where it is only 14% in food grain production. It concludes with highlighting some of the major burden of sericulture development in those areas such as the lack of access to banks and hence credit, the problem and high cost of storage, lack of market information since most of the farmers are illiterate, the problem of middleman. It suggest some measures to tackle the existing problems, such as, promotion of Self Help Groups, provision of sophisticated cost effective technologies through NGOs and government agencies, formation of market linkages through weaver clusters formation etc. will enhance the prospects of the sericulture in Anantapur.

**Q.1. BATHLA, S,** "Agricultural Reforms and Market Integration: A Spatial Analysis of Food and non-Food Commodities." *Journal of Social and Economic Development*, July-Dec. 2008; Vol.10, No (1), pp. 196-221.

A series of macro-economic, agriculture marketing and price policy reforms initiated from early nineties for better market integration in India. The paper aims to measure the extent to which integration of agriculture markets has taken place in Indian states and explore the policy option for improved commodity price transmission and building market oriented agricultural-marketing system. The paper uses multivariate co-integration and vector error model for the time period extending from 1980-81 to 2003-04 has been used to reach the objective. It estimates the spatial market co integration for food and non-food items separately and individually. The findings of the study confirm that greater spatial market co integration in the post liberalization period for rice, wheat, ground nut, sugar only in some selected states. The long run equilibrium relationship among the state level wholesale for cotton, soya been seed id found to be weak. It has also found that on vector error correlation model for all commodities a slow speed adjustment of prices towards equilibrium which calls for accelerating the pace of agricultural-marketing reforms.

**Q.1. NAGRAJ, N, M.G. CHANDRAKANTH, P.G. CHENGAPPA, H.S.ROOPA AND PRAMOD M.CHANDAKAVATE**, “Contract Farming and its implications for Input Supply, Linkages between Markets and Farmers in Karnataka”, *Agricultural Economics Research Review*, Vol. 21 (Conference Number), 2008; pp. 307-316.

The study focuses comparison of income, access to technology and credit of contract and non –contract farmers. The advantages of contract farming for small holders have also been evaluated. The study focuses on the economics of contract farming of green chillies and baby corn in Karnataka and its impact on income, employment and access to technology and credit by contract farmers and non contract farmers. Primary data were collected from the selected farmers using pre tested schedule through personal interview, with company supervisors. The primary data were analysed using measures of central tendency, ratios and proportions.

The study has revealed that the annual growth in production of high value crops, fruits, vegetables and livestock products, has increased to augment income and manage risks and uncertainties. Cultivation of high value crops involves risk and uncertainty due to high resource requirement and high perishability. Thus, farmers’ adoption of crop diversification practices requires a favourable environment that that fulfills resource requirements and effective policy support for reducing their risk. Hence, it has been found that farmers have developed coping strategies to face the constraints they encounter in crop production.

**Q.1. SHINOJ, P, B.GANESH KUMAR, R.SATHIADAS, K.K.DATTA, MUKTHA MENON AND SHIV KUMAR SINGH**, “Spatial Price Integration and Price Transmission among Major Fish Markets in India”, *Agricultural Economics Research Review*, Vol. 21 (Conference Number) 2008; pp. 327-335.

The fisheries is one of the key sectors in India. Hence, it is important to develop a strong network of efficient marketing system within the country so that a substantial chunk of country’s fish production is efficiently managed and delivered to the consuming masses, while not negating the due share of the fishermen. The study has suggested to devise strategies to bring about greater integration

between these markets so that both fishermen and the fish consuming community are benefited.

The study has highlighted the supply-side constraints, which are essentially the major factors responsible for poor integration between the markets. For the study, monthly price data for a ten year period from January 1998 to December 2007 were collected on important marine fish species. The data were collected through regular and systematic primary surveys conducted by the Central Marine Fisheries Research Institute (CMFRI), Cochin.

The study has unveiled the complicated price transmission between different fish markets in the country and has conveyed an important message of the necessity of price integration as a remedy to address the supply side constraints existing in these markets. It has highlighted the lack of integration between important markets of major marine fish species and has suggested devising strategies to bring about greater integration between these markets, so that both the fishermen and the fish consuming community in the country are benefited.

**Q.1. ALI, JABIR AND SANJEEV KAPOOR**, “Farmers’ Perception on Risks in Fruits and Vegetables Production: An Empirical Study of Uttar Pradesh”, *Agricultural Economics Research Review*, Vol. 21 (Conference Number), 2008; pp. 317-326.

This paper provides an assessment of agricultural diversification trends towards fruits and vegetables production in the state of Uttar Pradesh. In the first part, food consumption, crop production patterns and value of output in the region during the past two decades are reviewed. Next, the farmers’ perceived risks on a variety of sources and the use of different risk management strategies are discussed. The principal contribution of this paper is to draw of attention towards some neglected aspects of diversification, especially the bio physical and economic constraints to the process of fruits and vegetables production system. The data were collected using a pre tested structured questionnaire and data was also collected from the Agricultural Statistics at a glance.

The study has revealed that the annual growth in production of high value crops has increased to augment income and manage risks and uncertainties. Cultivation of high value crops involves risk and

uncertainty due to high resource requirement and high perishability. Thus, farmers' adoption of crop diversification practices requires a favourable environment that fulfills resource requirements and effective policy support for reducing their risk. Public interventions can facilitate better risk management through improved information system, development of financial markets and promotion of market based price and yield insurance schemes, thus ensuring that the marginal farmers are able to benefit from these interventions as well as participate in the emerging system.

**Q.1. EASWARAN, R. SALVADI AND P.RAMASUNDARAM,** "Whether Commodity Futures Market in Agriculture is Efficient in Price Discovery? - An Econometric Analysis", *Agricultural Economics Research Review*, Vol. 21 (Conference Number) 2008; pp. 337-344.

Futures market performs two important functions of price discovery and price risk management with reference to the given commodity. Thus the present study analyses the agricultural commodity futures market in its role in price discovery. In this study future and spot prices of four agricultural commodities were collected from the MCX and NCDEX. Four contracts for each commodity were considered for the present study to assess the price discovery.

The statistical analysis of data on price discovery in a sample of four agricultural commodities traded in futures exchange has shown that the futures market in those commodities are not efficient, which implies that the futures exchange fails to provide an efficient hedge against the risk emerging from volatile prices of those commodities. The econometric analysis of the relationship between price, return, volume, market, depth and volatility on a sample of four agricultural commodities has shown that market volume and depth are not significantly influenced by the return and volatility of the futures as well as spot markets. The results have also indicated that the futures and spot markets are not integrated. The main problems behind the efficiency of futures market is thin volume and low market depth, infrequent trading, lack of effective participation of trading members and many more.

**Q.1. JAIRATH, M.S.**, “Trends in Private and Public Investments in Agricultural Marketing Infrastructure in India”, *Agricultural Economics Research Review*, Vol. 21 (Conference Number) 2008; pp. 371-376.

The study has estimated the extent of investment made in promotion of marketing infrastructure in the country and growth in public and private investments. It has also examined state-wise spread of private and public investments in agricultural marketing infrastructure, its composition and share and has investigated whether private investment induces public investment and vice-versa.

The data for the present study was collected from the office of Directorate of Marketing and Inspection, Govt. of India, Faridabad; National Cooperative Development Corporation, New Delhi; and NABARD, Mumbai. Information was also culled out from the agenda notes of Monitoring and review meetings held at the Ministry of agriculture, Govt. of India. Regression analysis and simple statistical tools have been used to analyse the data.

The study has indicated that in agriculture marketing infrastructure, private investment has taken a lead, which is a welcome change because private investment is more efficiently used as compared to public investment. To give further fillip to private investment in agricultural marketing infrastructure, the study has provided certain suggestions.

**Q.1. KUMBHARE, S.L. AND MADHURIMA SEN**, “Investments in Irrigation Projects- An Impact Analysis”, *Agricultural Economics Research Review*, Vol. 21 (Conference Number) 2008; pp. 377-385.

Physical Infrastructure development is a powerful means of promoting economic growth as (i) it creates production facilities, (ii) reduces transaction and Marketing Cost and (iii) provides employment opportunities for the poor. The study aims at evaluation of irrigation investments under RIDF in the states of Uttar Pradesh, Haryana, Orissa, Maharashtra and Assam.

The studies were undertaken with the reference year 2004-05. In order to compute the Economic rate of return, the cost of investments incurred by the state governments was taken into account, while the benefits accruing to the local farmers and the

farming community at large were considered.

The net benefits realized by the user community in most of the states from the investment in irrigation, flood protection, etc. have been found fairly high, except from canal irrigation in Orissa. Maximum benefits in the case of medium irrigation projects in Uttar Pradesh were not realized due to pending work of rehabilitation and scanty rainfall. The study has also highlighted the poor maintenance of assets by the state govts. poor status and functioning of the Water users associations and 'Willingness to pay' by the user farmers.

**Q.1. KUMAR, PRADUMAN, SURABHI MITTAL AND MAHABUB HOSSAIN**, "Agricultural Growth Accounting and Total Factor Productivity (TFP) in South Asia: A Review and Policy Implications", *Agricultural Economics Research Review*, Vol. 21, July-December 2008; pp. 145-172.

This paper has reviewed the developments in agricultural productivity related to South Asian countries, namely Bangladesh, India, Nepal, Pakistan and Sri Lanka. The TFP growth and its contribution in production growth have been summarised for South Asia over the past three decades. Crop specific TFP growth figures have been updated for India by using more recent micro farm level data for three decades. A discussion and synthesis on changes in TFP and its sources of growth for the major crops, major crop systems, crops and livestock sectors for the countries of South Asia have also been presented.

It was found that the South Asia had concentrated on enhanced production of a few food commodities like rice and wheat, which could quickly contribute to their total food and agricultural production. The rice-wheat based cropping system, spread in the most fertile areas, is the backbone of food security in south Asia. Encouraging TFP growth for crop and livestock sectors has been noticed for Bangladesh and Pakistan. More and more cases of deceleration in total factor productivity growth are being reported in India, except for rice in its eastern and southern states. Sri Lanka has experienced a negative growth of TFP.

An integrated approach of developing crop varieties with greater efficiency in utilisation of nutrients and other natural resources, ameliorating soil related problems, incorporation of legumes in the

cropping system and enhancing water use efficiency will be required to develop location specific management practices to improve the factor productivity growth in the rice-wheat system. Therefore, future rate of investment in agricultural research will be the driving force for productivity growth in South Asia.

**Q.1. CHAUHAN, S.K.**, “Socio-Economic Dimensions of Equine Rearing in Himachal Pradesh”, *Agricultural Economics Research Review*, Vol. 21, July- December 2008; pp. 211-220.

Since equines play an important role in the economy of Himachal Pradesh, this study has examined the growth trends in equine population and socio-economic characteristics of equine -reared. The study was undertaken in five most equine populous districts of Himachal Pradesh. Both primary and secondary data were collected during the years 2001 and 2002. Regression and Tabular analyses were followed to arrive at the specified objectives.

Amongst different constituents of equines viz. Horses, Ponies, Mules and Donkeys, Mules have shown the maximum rise in number. The contribution of equines has been assessed to be 40% in the gross household income of rearers. A mule pair has been found to be highly profitable for load carrying activities. Road links to the villages having modern means of transport have been perceived to be the greatest threat to Equine-rearing activity. The study has emphasised on increased supply of Chamurthi horses through identification of additional local breeders by adopting systematic breeding policy, particularly in the pin valley of Spiti area. Keeping in view the demand for mules, their breeding should be undertaken at both public and at private levels so that local bred mules become available at affordable prices.

**Q.1. SINGH, ALKA, A.K.VASISHT, RANJIT KUMAR AND D.K.DAS**, “Adoption of Integrated Pest Management Practices in Paddy and Cotton: A Case Study in Haryana and Punjab”, *Agricultural Economics Research Review*, Vol. 21, July- December 2008; pp. 221-226.

The paper has examined the impact of key socio-economic and institutional factors on adoption of integrated pest management

practices in paddy and cotton which consume a sizeable share of total pesticide application in the country. Moreover, farmers' perception regarding pest control practices and impact of IPM practices will augment farm efficiency. The study was conducted in the states of Punjab and Haryana, representing one of the most progressive regions in terms of agricultural productivity and input usage and also characterised by highly commercialised agriculture.

The study has used a Poisson Count Regression model to analyse technology adoption by using cross-sectional data obtained from primary survey. The study has shown that technology awareness through formal crop specific IPM training provided by farmer's field schools is extremely important for wider adoption of IPM in the study area. Hence, investment in IPM education through these programmes will have long term beneficial impact. Participation in community organisation/farmers' activities has also been found positively related to technology adoption, as they provide a better platform for farmer to farmer extension delivery approaches. The study has found mixed evidence about the relationship between farm-size and adoption of IPM practices. In the case of paddy, a negative relationship has been observed, while cotton has shown a positive relationship. Therefore, to achieve success in IPM, it is required to have a level of analytical skill and certain basic trainings in management of crop and ecological principles.

**Q.1. MAMATA SWAIN**, "Agricultural Risk and Crop Insurance in Orissa in a Globalised Economy", *Man & Development*, Vol. XXX, No. 3 September 2008; pp. 1-12.

The paper attempts to examine the need for crop insurance in an agriculturally backward state like Orissa in Eastern India and to what extent the crop insurance scheme as implemented in the state has helped the farmers in managing risk in agricultural production. A crop insurance scheme was introduced in Orissa on pilot basis from Kharif 1981 to Rabi 1984-85, but it showed a high and unfavourable claim-premium ratio. The Comprehensive Crop Insurance Scheme (CCIS) was launched in Orissa in 1985 and its major drawback was that its coverage was very low. As it was a credit linked insurance scheme, only the farmers taking loans from institutional credit agencies (typically the medium and large farmers)

could insure their crops. Further, it was found to be financially unsustainable due to high claim-premium ratio. To overcome the above problems, the improved National Agriculture Insurance Scheme (NAIS) was implemented in Orissa since 1999. This scheme was extended to non-loanee farmers, as a result of which area and number of farmers under the scheme increased enormously. The claim-premium ration was also found to be favourable in most seasons. However, it was also suggested in this scheme that along with crop insurance other risk reducing measures like income generating activities in non-farm sector and food for work programme should be undertaken to lower income variability. In a frequently disaster affected state like Orissa, along with the public sector, private sector participation in agricultural insurance needs to be encouraged by providing subsidy, guarantee and reinsurance facility. Credible long-term statistical information should be made available for formulation of policies. Vulnerability maps of different regions should be prepared which will help in setting the price of risk (premium). Education and training to farmers on the benefits of crop insurance and different insurance products should be imparted.

**Q.1. PURUSHOTTAM, SHAIKESH KUMAR AND AJAY KUMAR**, "Issues in Adoption of Hill Agriculture Technologies", *Agriculture Situation in India*, June 2008, pp. 141-144.

This paper discusses the adoption of hill agriculture technologies in Uttarakhand. For the study, data were collected from 190 respondents working there in 2004. The methodology used was open ended questionnaire. Also, qualitative data and secondary information were taken into account to draw conclusions. The study listed the following issues in descending order of importance which were responsible for non-adoption of technologies.

There is unavailability of agricultural inputs like seed, fertilizers etc, the cultivated land is rainfed which makes agriculture unprofitable, risk-prone and inefficient, the transportation up to the villages and farms are not accessible, the agriculture extension services are poor due to lack of staff and infrastructure facilities, the land is scarce and the fields are scattered due to non-consolidation of agricultural land, there is poor participation of men in agriculture

i.e. majority workers are women, the purchasing power of farmers is negatively affected due to economic and social poverty, there is illiteracy among the farmers especially old women who are mostly the decision makers, the farmers have faith in traditional agricultural techniques which are less remunerative as compared to modern improved technologies and last the youth lacks interest in agriculture as they consider it as a low profile work and consequently, this leads to migration. It is therefore recommended to consider and focus on reported issues in formulation and implementation of agricultural development schemes for Uttarakhand hills.

**Q.1. C.T. JOSE AND S. JAYASEKHAR**, "Growth Trends in Area, Production and Productivity of Arecanut in India", *Agricultural Situation in India*, June 2008 page no. 135-140.

This paper discusses the spatial and temporal changes in area, production and productivity of Arecanut, a commercial crop in India. Time Series data has been used for the study which has been obtained from various sources such as Directorate of Economics & Statistics, CMIE (Indian Harvest) and FAO. The present study includes the period 1971 to 2004 which is further divided into four sub periods. The trend is usually obtained by assuming some parametric function and parameters are estimated by the method of least squares. The trend function is given by  $Y=m(t)+e$ , where  $Y$  is the observation at time  $t$ ,  $m(t)$  is a smooth trend function and  $e$  is the error term. The compound growth rates are estimated using the following exponential model  $\ln(Y)=\ln(a)+t\ln(b)$ , where the value of  $b$  is estimated by the method of least squares. In the decomposition analysis, the change in production is taken as follows:  $\Delta P=B\Delta Y+C\Delta A+\Delta A\Delta Y$ , where  $\Delta P$ ,  $\Delta Y$  and  $\Delta A$  are the change in production yield and area and  $B$  and  $C$  are the base year's area and yield respectively. The decomposition analysis shows that the increase in production is due to increase in yield. The time series data shows that arecanut price increased in 1989 and after reaching its maximum in 1999-2000, thereafter it started declining. To conclude, there is an urgent need to increase the net return per unit area otherwise it will be difficult to sustain arecanut cultivation over a period of time as pointed out by WTO.

R.1- V.L. Gondalia, K.A. Khunt and S.B. Vekariya: Impact and Progress of Crop Insurance Programme in Gujarat State: *Agricultural Situation in India*: April 2008, Pp. 19-24

This study was undertaken with a view to provide some ground level facts about the crop insurance scheme which may be helpful to correct the defects and in modification of the present crop insurance scheme in the Gujarat state. Study includes Rajkot district for three major crops viz, groundnut, cotton and bajra. Considering the area and number of farmers covered in the insurance scheme, three stages purposive sampling technique was used for selection of the respondents. At the final stage, all the farmers from sample villages covered under the crop insurance programme were categorized into two size groups viz, large farmers(>2ha.) and small farmers(<2ha.). Thus the sample of 192 farmers comprised of 48 beneficiaries and 48 non-beneficiaries farmers each from both the two size groups of farms. To conclude, results have shown that crop insurance has performed well in terms of coverage of farmers and benefits extended to the farmers of Gujarat. Significantly higher use of inputs like human labour, bullock labour, irrigation, pesticides and total inputs use was found on beneficiary indicated that farms have invested more on cash inputs mainly because of compensation guarantee from scheme. So, this justifies the need of crop insurance scheme in Gujarat.

**Q.1. SHANTANU KUMAR, RADHA KRISHAN AND S. NIGAM:** "Contribution of livestock in Indian Scenario", *Agricultural Situation in India*: April 2008; Page 25-28.

The paper discusses the contribution of livestock to the growth and development of agricultural sector by providing nutritional security and generating income and employment. India possesses one of the largest livestock population in the world. Contrary to the large population of livestock in India, productivity of Indian livestock is low compared to many developing countries. Livestock management is linked with crop production in agriculture. Data shows that households having less than 2 ha of land possess a large share of live stock. It was also concluded that number of animals owned has a direct relationship with the size of holding. Drought power and dung manure are major inputs contributed by the

livestock in agriculture. Animal husbandry has been found to be the most attractive and remunerative activities for Antodaya beneficiaries. Livestock provides livelihood support to millions of people having little access to land. About 30% of the population suffers from malnutrition. The problem is severe in population having little access to cultivated land. Diversification of diet towards animal products can help improve nutrition. India has a negligible share in world trade in livestock products. During 1998, the average value of livestock product exports was 1% of the total export earnings. From the data, it is comprehensible that livestock remains the cardinal pillar of Indian agriculture. Poor productivity of Indian livestock could be improved by implementing suitable breeding strategies like cross breeding, up-grading, and selection depending on the agro-climatic situation, farmers resource set up and preferences. Similarly, the necessary supporting infrastructure backed with effective input delivery system should be encouraged to make Indian economy better.

**Q.1. JYOTI KACHROO, ARTI SHARMA AND TARUNVIR SINGH:** "Technical Efficiency of Paddy Crop in Jammu District of J&K State", *Agriculture Situation in India*: June 2008; Page 151-155.

Study tries to examine various aspects of economic efficiency of rice production in jammu district of J&K state so that suitable policy option for enhancing rice production could be implemented. For the purpose of collection of relevant information from study area, three stage sampling design was adopted. Blocks, villages and farmers formed the first, second and third stage units, respectively. After that the stochastic frontier production function was specified because of its advantage over the other functional forms. The linear regression model was used to identify the socio economic factors that condition technical efficiency of sample farms. These factors were proportion of female workers in total agricultural workers in the family, proportion of children in the family, farm size etc. The estimates show that the coefficients of seed and land were positive i.e. they were productive inputs. While coefficients of labour, fertilizer and irrigation were negative but significant indicating overuse of these factors in producing the paddy crop. To conclude, the results showed that even under the existing technology potential exists for improving the productivity with proper allocation of the

existing resources. Hence proper extension strategies need to be taken to educate the farmers about rational use of inputs.

**Q.1. R.D SINGH AND G.C. MUNDA**, “Status of Natural Resources and Suitable Crops & Cropping Systems for North Eastern Region”, *Agriculture Situation in India*: June 2008; pp. 3-9.

This paper discusses the status of the natural resources and cropping systems which are responsible for low productivity in this region and in the end suggests the proper management practices. The major constraints of crop production are lack of geographical isolation, infrastructural facilities and transport etc. Also, management practices are very difficult and incidence of insect-pests and diseases are high. Low input use, low cropping intensity and land tenure problems are the primary feature of existing cropping systems. Shifting cultivation known as ‘jhuming’ is still practiced which lead to degradation of natural resources. But some of the oldest cropping system are worth mentioning like ‘Zobo’ farming system of Nagaland, rice based system of Apatani Plateau and high altitude farming in Kameng Himalaya (Arunachal Pradesh), fruit based cropping systems of Sikkim, bamboo drip irrigation system of Meghalaya and organic farming. The experimental results from different parts show that crop productivity per unit area and total production can be increased through proper management of crops. This includes selection of efficient crops and their varieties, crop should be sown at optimum date of sowing to achieve target yield, maintenance of soil fertility through organic or inorganic sources, keeping crop free of weeds, proper water management i.e. irrigation facilities, investments in efficient input technologies, cultivation of crop in topo-sequence, use of intercropping system and last crop should be harvest in proper time. To conclude, there should be appropriate combination of food, fodder (animal husbandry) and fuel under crop production to achieve higher yield.

**Q.1. S.R. KRISHA PRIYA RADHAKRISHNAN**, “Multiple Regression Model for Food Crop Yield Forecast”, *Agriculture Situation in India*: June 2008; pp. 11-13

The main objective of this study is to fit a best regression forecast model (linear/non-linear) for the five food crops viz, Paddy, Cholan,

Cumbu, Ragi and Maize. Both linear and non-linear models were tried and best model was selected. In this study a Multiple Regression forecast model has been developed by taking crop production (Y-in tonnes), as dependent variable and rainfall in millimeters (X1), irrigation area in hectares (X2), area under cultivation in hectares (X3), wholesale price in Rupees per quintal (X4), farm harvest price in rupees per quintal (X5), cropping pattern in hectares (X6), gross area sown in hectares (X7) and area sown more than once in hectares (X8) were taken as independent variables. From the results of linear and non-linear regression models for all five variety of food crops it can be inferred that the non-linear regression is better for prediction due to its high  $R^2$  value. To conclude, non-linear regression is the better model for explaining the crop yield.

**Q.1. SHARAD BHATNAGAR AND SHEKHAR BHATNAGAR,**  
“Status of Mulberry Silk Production in India”, *Agricultural Situation in India*, April 2008; pp. 15-17.

In this paper, the study has been undertaken to analyze the growth in area under mulberry cultivation, production and productivity of raw silk, reeling of cocoons and production of silk waste which are three different stages of sericulture to produce silk. The study is based on the secondary data of all the three different stages which was collected from SS, CSB, and Bangalore for the period 1980-81 to 2004-05. The production of silk was decomposed into three components, viz. productivity effect, area effect and interaction of both productivity and area. To analyze the time series data following two functions were fitted. Results show that though the area under mulberry cultivation remained almost same but the production of silk increased. Reeling of cocoons reached more than double where as the silk waste has also gone more than 2.5 times in this period. To conclude, silk waste which has increased should be reduced and mulberry growers for expansion of sericulture industries in India should capture more area.

**Q.1. M RAGHAVAN**, “Changing Pattern of Input Use and Cost of Cultivation”, *Economic & Political Weekly*, Vol. 43 No. 26 and 27 June 28, 2008; pp. 123-129.

The author showed the detailed estimate output and comparisons of the paid-out cost cultivation of wheat in India. The changes before and during the era of economic reforms are discussed throughout the article. The analysis is based on the costs of cultivation of wheat from 1970-71 to 2004-05 for Haryana, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh. In addition the detailed statistical evidence on how declining farm prices aggravated the crisis is also examined. Factors such as wage and fertilizers are also discussed. The wage cost in wheat cultivation remained stagnant at 26-27 per cent during the 1970s and 1980s but it has risen to 32 percent in the 1990s. The fertilizer charges faced a greater rise when compared to the 1970s and 1980s prices. In 1970 and 80s the rate of growth of fertilizer charges was only 4.5 per cent. During the reform period, when fertilizer application growth decelerated to 2.1 per cent a year, fertilizer cost growth accelerated to 6.2 per cent per annum. The complete study witnessed in the 1970s and 1980s, the government maintained a consciously devised policies but in contrast to this some unwelcoming entry of private operators and new fertilizer policies was introduced by the government in 1990s. From the linear trend to the all-states average of costs for 1970s, 1980s and extended to 1990s line registers a linear growth rate of 8.2 per cent per annum. The wheat cost cultivation in these cost items was 22.5 per cent and general price level is 7 per cent. The author concluded that even if the input subsidy regime continued the costs of cultivation of wheat, one of the most state protected crops, could have increased faster than the increase in the general price level. This shows the weakness of that regime.

**Q.1. RAJIV SETH, VALEED A. ANSARI, MANIPADMA DATTA**, “Hedging Rainfall Risk by Farmers Growing Soyabean in Jhalawar district: A Theoretical Analysis of Willingness to Pay”, *Journal of Applied Economic Research*, 2: 2(2008): pp. 199-212.

In India about 78% of farmers are small and marginal, and are mostly poor. Most crops are highly dependent on the vagaries of

the monsoon. In this context, we cannot deny the importance of financial instruments in the form of weather derivatives like crop insurance schemes that can help farmers to hedge part of the volumetric risk in field. Weather derivatives, a fairly new concept in India, are very useful in managing exposure to unpredictability in rainfall. The paper considers a theoretical model which maximizes the expected utility of a farmer growing a crop, with respect to planned production. Going further, it considers the case where the farmer has an option to hedge the weather risk through purchase of weather derivatives. Accordingly, the model is modified to incorporate the amount paid by the farmer to hedge risk in the cost variable and static optimization is done to determine the values of planned production and the amount of hedge. Subsequently, an empirical study of farmers growing soyabean in Jhalawar district of Rajasthan is done in order to determine the theoretical willingness to pay to hedge volumetric risk to yield. Data for the period 1982-2004 on the yield of Soyabean in Jhalawar was obtained from the directorate of Economics and Statistics, Government of Rajasthan, Jaipur. Rainfall data for the same place and period was obtained from the India Meteorological Department. From the data, we find that the yield of Soyabean has a fair degree of dependence on rainfall. Calculated estimates of yield of soyabean, cost of inputs and risk premium are used to arrive at an estimate of theoretical demand for weather derivatives products. This exercise, both simple and direct, can be repeated by research scholars to calculate farmers' willingness to pay to hedge risk for other districts in different states.

**Q.1. DAYANATHA JHA**, "Indigenous Technology and Agricultural Research System", *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 1-4

This paper states that even within traditional systems, gaps existed between 'good' and 'bad' farmers and practices. Both research and extension systems try to exploit the 'good' practices. Such technologies have five major characteristics. First, they are less capital intensive, whatever capital is built up (like bunds, terraces, wells) are labor intensive in nature. They focus on improving quality of management (operations) and materials (seeds, land, tools, etc.). In capital-starved surplus labour, traditional agricultural system,

this meshes ideally with relative factor scarcities. Second, since these are generally environment- and ecology-friendly, are thus sustainable in nature. For instance, rice fields in the Indo- Gangetic Plains have been in cultivation for very long time and produced stable output for centuries. Third, these are generally very location and site-specific and have limited adaptability. That is why these are rarely noticed by outsiders in a macro-oriented and constrained information system. Fourth, over time, these diffuse over small, homogenous zones or sub-zones, mainly by farmer to- farmer interaction. Since farmers as a group have a very low propensity for mobility, the diffusion area is further constrained. It is left to the few adventurous and pilgrimage-prone farmers, to collect varieties and ideas during their long journeys. Finally, indigenous innovations generally generate only small increments in output. Usually, they relate to one or two practices and not the whole package. This micro-orientation implies that the gains arise only from small interaction effects. Thus, during the first half of the twentieth century when there was practically no external source for technological changes, agricultural output grew only at less than 0.1 per cent per annum, and that too primarily on account of systematic expansion of labor and land. Because of these characteristics, indigenous innovations create practically no visible ripples. In a highly chance-dependent agricultural system, it is very difficult to detect these improvements and distinguish between output fluctuations due to weather and due to technological improvements. Those who work with aggregative district/state/ national data on production and yields, for example, find it impossible to discern the effects of these innovations. This and other variables like irrigation, chemical fertilizers, and modern varieties, have led to a complete neglect of indigenous technology as a source of productivity growth. Indeed, professionals in agriculture developed a negative perception of farmers' practices and farmers. However, we should not neglect that traditional technologies are not sustainable always like slash and burn technology, cultivation of eroded and marginal lands. The effort should be to rectify the deficiencies in the system and bring modernity.

**Q.1. RAMA KRISHNA SINGH AND PRAJNESHU**, “Artificial Neural Network Methodology for Modelling and Forecasting Maize Crop Yield”, *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 5-10.

This paper discuss about a particular type of “Artificial neural network (ANN)”, viz. multilayered feed forward artificial neural network (MLFANN). In order to train such a network, two types of learning algorithms, namely Gradient descent algorithm (GDA) and Conjugate gradient descent algorithm (CGDA), are required. The methodology has been illustrated by considering maize crop yield data as response variable and total human labour, farm power, fertilizer consumption, and pesticide consumption as predictors. The data has been taken from National Agricultural Technology Project of Division of Agricultural Economics, I.A.R.I. New Delhi. To train the neural network, relevant computer programs have been written in MATLAB software package using Neural network toolbox. It has been found that a three-layered MLFANN with (11,16) units in the two hidden layers performs best in terms of having minimum mean square errors (MSE) for training, validation, and test sets. Superiority of this MLFANN over multiple linear regressions (MLR) analysis has also been demonstrated for the maize data considered in the study. The main limitation of latter is that it assumes always linear relationship between response and predictor variables, which is rarely met in realistic situations. Anticipation is that in future, researchers would start applying MLFANN along with some other more advanced ANN models, like ‘Radial basis function neural network’, and ‘Generalized regression neural network’ in their studies.

**Q.1. HARBIR SINGH, PRASOON MATHUR AND SURESH PAL**, “Indian Seed System Development: Policy and Institutional Options”, *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 20-29.

The paper examines the developments in the Indian seed industry and their impact on access and use of commercial seed by farmers. Moreover, paper has also analyzed various types of seed systems such as hybrids, self-pollinated crops, vegetative

propagated crops, crops with high seed volume, etc. The analysis shows that the commercial seed markets for hybrids are well developed, but these need improved flow of information to farmers and effective regulation of unscrupulous traders, etc. Several significant changes have occurred in terms of seed regulations, management of GM crops and protection of intellectual property. Since all these regulations are mutually enforcing, there is a need for developing institutional capacity for their enforcement, as well as flexibility to learn from the experience for future adaptation. There is a lot of scope for strengthening the seed system of 'orphan crops', where there is no participation of the private sector and the public seed system is facing several resource and institutional constraints. In particular, there is a need for technological backstopping, developing partnerships with private and civil society organizations, and developing capacity at the local level. The results of farm surveys have shown that increasing proportion of farmers use commercial seed for quality considerations. The study has argued that there is a problem with variety selection, particularly of proprietary hybrids, due to lack of information, which has resulted into poor crop performance on several occasions, which has resulted into poor crop performance on several occasions. Thus, empowerment of farmers with information about commercial seed market and new varieties and strengthening of the system to protect farmer seed users would go a long way in developing the seed system. In the case of high volume crops, technological empowerment of local seed agencies and farmers should be accorded high priority.

**Q.1. B. GANESH KUMAR, P.K. JOSHI, K.K. DATTA AND S.B. SINGH**, "An Assessment of Economic Losses due to Avian Flu in Manipur State", *Agricultural Economics Research Review*, Vol. 21 January-June 2008; pp. 37-47.

The study evaluates the economic losses incurred in 2007 due to outbreak of Avian Flu in Manipur state. The study is based on poultry farmers (30 each of different species and farm sizes), chick and poultry traders, integrators, private hatcheries and chicken retail outlets. The data were collected from farmers both from the infected zone (0-5 km radius from the affected site, Chinmeirong village of East Imphal district) and the surveillance zone (5-10 km radius

outside the infected zone) through a structured interview schedule through personal visits to farm areas. The study assessed loss due to the disease to be 14 per cent of the total value of livestock outputs in the entire state. More than 3 lakh birds were culled and 24 tonnes of poultry feed was destroyed post-flu. The most affected groups were found to be the producers and the input industry than traders and retailers. The study has observed that most of the producers are small in nature in terms of scale of production and profitability in Manipur, and any kind of effect of such a dangerous infectious disease could leave a lasting impact on the livelihood of these farmers. Therefore, in dealing with such eventualities, compensation should be adequate and timely so as to ensure better compliance for effective control and stamping out of the disease. . The study has found that the overall impact of such disease outbreaks could be much bigger than observed directly because of indirect losses on input industries, hatcheries, transport sector, hoteling, etc. The study suggests that the compensation rates may be fixed as per the prevailing economic condition of less-developed states like in the North-Eastern region, taking into consideration flock size, family size of farmers, proportion of income from poultry to total family income, level of nutritional security achieved from family poultry and border status of the state. The study has also suggested dissemination of factual information to the general public and consumers under such situations to instill confidence in consuming the dressed chicken, as there is no evidence of virus transmission to humans. Public agencies and press need to be proactive in this aspect. The study has advocated for an easier, hassle-free and security-less mechanism of credit support to the rural poor. In general, policies towards avian flu outbreak must necessarily involve the rural poor.

**Q.1. G. GOVINDARAJ, M.S. BASU AND N.C. BARIK**, “Impact of Grain Legume (Groundnut) on Energy and Nutritional Levels of Tribal Farm Households in Koraput (Orissa)”, *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 54-59.

The paper assesses the impact of grain legume on energy and nutritional levels of tribal farm households in Koraput of Orissa state. The introduction of groundnut through the support of IFAD & ICRISAT in the tribal areas of Koraput has been able to greatly

supplement the nutritional levels of farm households. The protein intake due to groundnut consumption has found to be around 20 per cent in the IFAD participants and 11 per cent in the non-participants. The study has observed a perceptible contribution of groundnut (grain legume) in meeting the protein and energy needs of the tribal farm households in the study area. Further, groundnut has been found as the cheapest source of protein and energy among different food items like fish, meat, egg, etc., consumed by the tribal households. This low-cost energy rich grain legume (groundnut) may be popularized to increase the frequency and quantity of intake to achieve nutritionally secured human resource (tribal people). This strategy will also enhance the sustainable crop production due to inherent advantage of legumes in the cropping system like soil health improvement, low external input addition, and atmospheric nitrogen fixation by beneficial microorganisms and reduced soil and environmental pollution.

**Q.1. P.K. RAJKUMARA, S.B. MAHAJANASHETTIA, H. BASAVARAJ, H.S. VIJAYAKUMAR AND Y.N. HAVALDAR,** “Farmers’ Coverage under Market Intervention Scheme in Karnataka”, *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 67-72.

The study analyzed the coverage of onion and maize growers under Market Intervention Scheme (MIS) called Floor Price Scheme in Karnataka. Two northern districts of the state, viz. Dharwad for maize and Gadag for onion have been selected. A total of eight villages were selected for the study – four each from the districts of Dharwad and Gadag. The study has used tabular analysis along with discriminant analysis. The coverage of farmers under the scheme has not been found satisfactory. The main problems being faced by the farmers in availing MIS benefits have been identified as procedural complexities of the scheme, delayed payments and the requirement of meeting Fair Average Quality (FAQ) stipulations for the crops. It has also been revealed that farther are the procurement centres, more is the likelihood of the farmers to go in for open market sales. The study suggests covering a larger number of farmers under MIS by simplifying the procedures, making timely payments and increasing the number of procurement centers.

**Q.1. N.C. DAS AND K.A. KHUNT**, “Setting Research Priority for Livestock Sector in Gujarat”, *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 73-81.

The paper reviews the setting up of research priority for livestock sector in Gujarat like (i) contribute towards improving the efficiency of livestock production, (ii) integrate livestock into sustainable systems (iii) take into consideration rural development, equity, food security, social development and gender issues, and (iv) usage of financial resources in a more planned way. The research resource allocation strategy has been worked out for the livestock sector across districts/regions of the Gujarat state by using multi-criteria scoring model. The study has covered all the 19 districts of the state and six livestock species. In the commodity priority, the highest share (83%) has been claimed by milk research, followed by draught power (15%), meat (1%) and egg (1%). The research share of meat, egg, skin and hair & wool is very low. The trend has been found same in the state as well as the districts. Within milk research, buffalo milk has got the highest priority in all the districts and research on poultry meat has claimed the highest share in meat research in most of the districts. However, still milk research should be targeted by districts of Panchmahals, Kachchh, Kheda, Banaskantha, Mehsana, Sabarkantha and Surat. For meat production research, a higher priority should be given to the districts in South and Middle Gujarat regions, viz. Kheda, Surat, Valsad, Ahmedabad and Panchmahals. Egg production research activities should be concentrated mainly in the districts of Valsad, Kheda, Panchmahals, Surat and Dang. The hide research should focus on goat hide in the most of the districts. Wool research has claimed the highest priority in the Saurashtra, Middle and North Gujarat regions, while the South Gujarat region should focus on goat hair research. For the wool and hair research, the Kachchh district should receive the highest priority.

**Q.1. R.K. SHARMA, S.K. CHAUHAN AND SONIKA GUPTA**, “Technical Efficiency in North-Western Himalayan Region: A Study of Himachal Pradesh Agriculture”, *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 82-90

The technical efficiency of Himachal farmers, studied in the paper using the frontier production function, has been found to vary

widely across cereal crops in the state. It has been found that the average yield of all the major cereal crops is below the national average, except maize crop, which is in surplus in the state. Maize → wheat and paddy → wheat have been noted as the major crop rotation being followed in the study area. The analysis of cross sectional data has revealed inefficiency in terms of inputs application. This phenomenon calls for concerted efforts for dissemination of improved technology for a proper as well as judicious use of inputs. Therefore, the hill farmers should be educated on reallocation of resources and adoption of new inputs and technologies for improving production and profitability. The mean technical efficiencies have revealed that a considerable portion of frontier output is left untapped, it is 35-42 per cent in maize, 44-50 per cent in paddy and 61-67 per cent in wheat. The ratio of marginal value productivity (MVP) and marginal factor cost (MFC) has been found to be more than one in case of 50 per cent inputs for all the crops. However, the female labour for most of the crops has values less than one and with negative signs as most of the work (agricultural operations) in the hills is being performed by women. The results have indicated that there is a scope to increase the returns from wheat production by using more farmyard manure, chemical fertilizers, male labour, female labour and bullock labour in zone I. Similarly, in the case of maize (local) in zone I, the yield could be increased by increasing the use of more of farmyard manure, chemical fertilizers, male labour and seeds. The analysis has also revealed that a majority of the farmers operate at low level of efficiency due to practicing of traditional cultivation methods. It is felt that there is a need to educate females in resource management, preferably through female extension workers.

**Q.1. R.S. SIDHU, INDERPREET KAUR AND KAMAL VATTA,**  
 “Food and Nutritional Insecurity and its Determinants in Food Surplus Areas: The Case Study of Punjab State”, *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 91-98.

The paper has estimated the incidence and depth of food and nutritional insecurity and its determinants in a food-surplus area, viz. the state of Punjab. The district of Ludhiana was selected to represent the food-surplus zone in the state. Study pertains to a total of 262 households, 130 rural and 132 urban, selected by multistage

random sampling procedure. The rural and urban households were further classified on the basis of size of cultivated land and per capita income, respectively. The study conducted during 2006 reveals that the consumption expenditure found to have direct association with the levels of income/assets in both rural and urban areas. However, with change in the concept of food security from 'supply' to 'access and distribution/exchange' of food, it reflects the ability of an individual or household to meet the required consumption levels for an active and healthy life under the domain of fluctuating production, low income, high and variable prices and poor markets. The study has revealed that the food and nutritional insecurity prevails even in the food-surplus areas, with low-income households (rural and urban labourers as well as other poorly asset-backed) being more vulnerable to it. The access to food determined by the level of income and family-size has been found as the most important factor influencing food and nutritional security in food-surplus areas. Increase in production alone does not ensure food and nutritional security. The study has suggested that income and employment opportunities for more vulnerable sections of the society will have to be augmented to alleviate their food insecurity and malnutrition.

**Q.1. S.P. SINGH, B. GANGWAR AND M.P. SINGH**, "Economics of Sugarcane-based Farming System in Western Uttar Pradesh", *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 109-117.

This paper studies the underlying economics of sugarcane based farming system. Amongst 38 farming systems prevalent in the western Uttar Pradesh region, sugarcane–livestock–cereals–fodder has found to be the major system being followed by a majority of the farmers. It has been found that sugarcane farmer keeps in general two dairy animals, largely for household milk consumption. Small farmers sell milk to enhance their family income. The major income source of farmers in the area has been found sugarcane (58 per cent), followed by livestock and cereal crops. The study has discovered that marginal farmers take highest credit, while large farmers take minimum credit. Utilization of credit facility to diversify the farm business has been found very low amongst small farmers. It has also been observed that facility of Kisan Credit Card (KCC) is being

availed by mere 21 per cent farmers. Farming activity-wise analysis has revealed that sugarcane provides maximum employment, followed by livestock and wheat. In terms of income, the study has observed that a family worker earns Rs 41,270 per year in the study area, which is much lower than that in Punjab (Rs 74,080 per year). The study has suggested that a combination of technology, policy and institutional innovations is needed for improvement in productivity and profitability of crops and livestock in the area. Technologies like simultaneous planting of sugarcane with wheat using improved varieties and site-specific nutrient management with emphasis on balanced nutrition deserve due attention for increasing profitability of sugarcane-based farming systems. Farmers need to be encouraged to adopt high-value low- volume crops, including medicinal and aromatic plants, high productive dairy animals, fisheries, poultry, piggery, bee-keeping etc, in the region. Besides, strong efforts of government are needed to further strengthen the banking infrastructure to extend adequate credit facilities to the farmers.

**Q.1. B.L. GAJJAA, RAJENDRA PRASAD, R.S. MERTIA, KHEM CHAND AND J.S. SAMRA**, "Impact of Shelterbelts on Net Returns from Agricultural Production in Arid Western Rajasthan", *Agricultural Economics Research Review*, Vol. 21 January-June 2008; pp. 118-122.

Paper has documented the impact of shelterbelt on agricultural returns by collecting primary data from 80 farmers each in shelterbelt and non-shelterbelt areas of Mohangarh tehsil of Jaisalmer district. To decompose the total change into net returns, separate production functions have been estimated for shelterbelt and non-shelterbelt farms. The study has revealed an increase of 430.8 per cent in net returns due to shelterbelt plantation, in which shelterbelt technology has contributed 399.4 per cent and increase in use of complementary inputs, 31.4 per cent. In the change of 399.4 per cent, shelterbelt has accounted for 305.6 per cent, i.e. shifting from non- shelterbelt to shelterbelt and remaining 93.8 per cent has been due to inputs used by non-shelterbelt, which might be due to improvement in soil health. Besides, the shelterbelt plantation has been found to be an important technology to minimize erosion hazards and increasing

farm productivity through moderation of micro-environment at the field level, especially in the hot arid region of western Rajasthan, which is highly prone to wind erosion, causing a big hindrance to the sustenance of agricultural and allied activities. The government should encourage the shelterbelt plantation on the boundaries of agricultural fields to minimize the harmful effects of strong winds and increase the farm returns.

**Q.1. L.S. GANGWAR, DINESH SINGH AND GOUTAM MANDAL**, "Economic Evaluation of Peach Cultivation in North Indian Plains", *Agricultural Economics Research Review*, Vol. 21, January-June 2008; pp. 123-129.

The paper presents the production constraints and economics of peach (*Prunus persica* (L) Batsch.) cultivation in Punjab and Uttarakhand. The investment in peach orchards has been found a profitable business, financially viable and socially acceptable business. The internal rate of return (IRR) has found to vary from 20.98 per cent to 23.80 per cent, depending on the size of peach orchards. The net present value, benefit-cost ratio and IRR at 12 per cent discount rate have been reported as Rs 44,807, 1.681 and 22.20, respectively for the overall category of orchards. The economic productive life of peach orchards in Punjab and Uttarakhand has been calculated up to 24 years. The optimum size of peach orchards is above 2.0 ha. The comparison of results obtained from the present value method and amortization method has shown that the peach orchards are worth retaining as long as they give the income of Rs 5,713 over the annual maintenance cost. The economic appraisal of investment methods has indicated that annual amortization method may be preferred, because of its simplicity, efficiency and close to real situation results. To achieve the targets of fruits production, priority should be given to proper post-harvest management, including establishment of mechanical grading, packaging, on-farm processing, cold storage and quality control measures to minimize post-harvest losses and provide remunerative prices to the peach growers. Moreover, it could play a vital role in strengthening the on-farm primary processing-based agro-industry and generate employment opportunities through entrepreneurship development, to meet the demand of fresh and processed peach products in the domestic markets.

**Q.1. NALINI RANJAN KUMAR, A.B. RAI AND MATHURA RAI,**  
“Export of Cucumber and Gherkin from India: Performance,  
Destinations, Competitiveness and Determinants”, *Agricultural  
Economics Research Review* Vol. 21, January-June 2008; pp. 130-138.

Study evaluates the performance, competitiveness, major destinations and determinants of cucumber and gherkin export from India. Export performance ratio has been used to estimate the competitiveness, and log linear type of demand function has been used to determine the export determinants. It has been observed that India has made tremendous progress in the export of cucumber and gherkin products during the past 15 years (1990-2005). Export has increased by about 128.5- times with an impressive annual compound growth rate of 37.46 per cent, as against only 4.38 per cent in the world market. The major export destinations for cucumber and gherkin have been identified as France, USA, Russia, Belgium and Spain. An increasing and high value of revealed comparative advantage (RCA) and a positive and increasing value for revealed symmetric comparative advantage (RSCA) have indicated high potential in their export, particularly for the provisionally-preserved and prepared/preserved products. One per cent increase in volume of international trade in cucumber and gherkin may increase the demand from India by 5.96 per cent. This indicates that India is highly competitive in export of cucumber and gherkin and has ample scope to further increase its export. The study has also revealed that exchange rate is a more dominant determinant of export from India than price of commodity. It is been noticed that price realization of Indian products has declined during the period. This trend needs to be checked by improving the quality of these products through dissemination of improved techniques of production and processing and also by providing adequate government support for making production and marketing of these products more economical. Besides, establishment of infrastructure for various sanitary and phytosanitary measures will also help in better price realization of Indian cucumber and gherkin in the international market. Gherkin is a short-duration (75-90 days) labour-intensive and highly profitable crop and therefore, its cultivation should be expanded to enhance its export in the world market.

**Q.1. S.P. SARASWAT**, “Floriculture in Himachal Pradesh: Economics, Marketing, Constraints and Suggestions, *Agricultural Situation in India*, October 2008; pp. 455 – 461.

The paper is an effort to examine the economics of floriculture in Himachal Pradesh. The state is bestowed with suitable climatic conditions for the cultivation of a variety of high valued flowers such as orchard, carnation, gladiolus, tulip, lilies, chrysanthemum and marigold. The study includes costs & returns, marketing and suggestions to boost cultivation of the above mentioned flowers. After reviewing the available information, it can be concluded that flower cultivation is highly capital and labour intensive avocation but at the same time ensures very high income. The input- output ratio of all the flowers was found positive except chrysanthemum. The most profitable plant for producers was found to be carnations and for retailers was gladiolus. But overall, liliium was the most profitable giving maximum returns. The marketing of flowers involves a number of functions like assembling, grading and standardization, packing and transportation to the distributing and consuming market. The major expenses borne by the grower in the process of marketing is the commission paid to the trading agent. There are numerous dimensions for the prospects of commercial floriculture in Himachal Pradesh which can be further boosted by providing proper physical infrastructure, specialized equipments, financial & technical support and protecting against risk involved.

**Q.1. P.R. SMITHA, JAYASHREE A. HANDIGOL AND S.S. GULEDGUDDA**, “Costs, Returns and Resource Use Efficiency in Anthurium Cultivation in Coorg District”, *Agricultural Situation in India*, December 2008; pp. 593 – 596.

The present study is an effort to integrate the economics of production of anthuriums in the districts of Bangalore and Coorg in Karnataka. The methodology of random sampling of the organized and unorganized sector was undertaken where the primary data was collected through personal interview method. The technique of tabular analysis was employed to compute the costs, returns and resource efficiency in anthurium cultivation. The production elasticities of cobb-douglas function were used to assess the optimal

use of resources which after modification into a log-linear model was expressed as “ $\log Y = \log a + b_i \log X_i + \log e$ ” where ‘Y’ is the gross returns per hectare of anthuriums, ‘a’ is the intercept, ‘X<sub>i</sub>’ is the expenditure under different heads, ‘b<sub>i</sub>’ is the regression coefficients of the explanatory variables and ‘e’ is the error term. The production of anthuriums is capital intensive and requires cost of establishment, operational cost, fixed cost and cost of cultivation which was observed to be higher in the organized sector as compared to the unorganized sector. Further, the ratio of marginal value product (MVP) and marginal factor cost (MFC) were calculated for both the sectors and it was concluded that some resources in production have been either over utilized or underutilized as revealed by their values. The sale price and returns on anthuriums was higher in the organized sector than the unorganized sector. The data shows, with the age of the plant, yield also increases. An increased return to scale was evident in case of organized sector and constant returns to scale was seen in the unorganized sector.

**Q.1. BABU, P. SUBRAMANIAN, K. MANI AND C. KARTHIKEYAN**, “Growth, Variability and Supply Response of Major Crops in Tamil Nadu”, *Agricultural Situation in India*, October 2008; pp. 483- 486.

Agriculture in Tamil Nadu has enjoyed three decades of growth which was largely based on rapid technological change. While agricultural sector growth rates in Tamil Nadu were among the highest in India during the 1980’s and early 1990’s, deceleration in growth since the mid 1990’s is of increasing concern to the policymakers. The present study is proposed to examine the growth and variability of area, production and productivity of major crops in the state during 1970-71 to 2005-06. Study is based on the secondary data on area, production, productivity and farm harvest prices of twelve major crops of the state. Compound growth rate (CGR) of area, production and productivity of the crops were calculated using exponential growth model. Variability of these factors was assessed through co-efficient of variation (CV). Nerlovian lagged adjustment model was used for analysis of acreage response function which describes the factors considered by farmers while deciding about area to be put under the crops. The results revealed

positive growth rates of area, production and productivity of most of the major crops during 1970's and 1980's. Particularly, maize showed a tremendous increase in area and production. After 1990, only three crops out of the twelve crops under study, managed a positive growth rate in area and production whereas all the crops recorded negative growth in productivity. The co-efficient of variation of farm harvest prices reveal no significant variability in prices of majority of crops during the entire period of study. The supply response function indicates that the farmers allocate land to different crops depending on their prices and yields, availability of water and the risk involved. The coefficient of lagged area, lagged price, lagged yield and rainfall were found to be affecting the acreage allocation of various crops. To conclude, increasing the production of major food crops in the state is very important to ensure food security of Tamil Nadu and the entire country.

**Q.1. SHARMA AMOD AND KALITA**, "Trends of Area, Production and Productivity of Major Fruit Crops in Jammu & Kashmir", *Agricultural Situation in India*, October 2008; pp. 477– 482.

Keeping in mind, the importance of Horticulture for economic growth of Jammu & Kashmir, the present study was conducted to examine the trends in area, production and productivity of major fresh and dry fruits grown in the state. Time series data for the given area of interest was collected from secondary sources for major fruits like apple, pear, cherry, walnut, almond and other fruits for the period 1974-75 to 1999-2000. Quadratic functional form given by  $Y = a + bx + cx^2$  where 'Y' is area, production and productivity of fruit crops and 'x' is the time variable, was selected for fitting the trend. The compound growth rate, the coefficient of variation and the interaction effect of area and productivity towards increasing production was calculated for these crops. Results revealed acceleration in the growth of area, production and productivity of all the fruits. The coefficient of variation of pear, cherry and almond was found to be high indicating risk of production of these crops whereas apple was found to be the least risky crop. The interaction effect of area and productivity revealed a positive result for all the fruit crops except pear, walnut and almond. The above discussion highlights the fact that the growth of area, production and

productivity for all the food crops in the state were positive and statistically significant.

**Q.1. RUPESH LAWVA & ANIL KUMAR**, “Growth Performance of Oilseeds in Rajasthan”, *Agricultural Situation in India*, December 2008; pp. 589-592.

The study has been undertaken to analyze the growth rates in area, production and yield of rapeseed-mustard, soyabean and total oilseeds in the state of Rajasthan.

The growth performance of oilseeds was measured by calculating the compound growth rates, variability and decomposition analysis. The requisite time series data on area, production and yield of oilseed crops was collected for the period 1975-76 to 2004-05. Log-linear Equation was used for measuring the compound growth rates in area, production and yield which worked out as follows:  $\log Y_t = \log Y_0 + t \log(1 + r)$  where ‘ $Y_0$ ’ refers to the value of the variable under study in the base year, ‘ $Y_t$ ’ is the value of the variable in time period ‘ $t$ ’ at growth rate ‘ $r$ ’.

Further, Decomposition Analysis was performed to examine the change in the oilseed production in the state which after simplification is expressed as:  $\Delta P = P_n - P_0 = A_0 \Delta Y + Y_0 \Delta A + \Delta A \Delta Y$  where ‘ $A_0$ ’ is the area in the base year, ‘ $P_0$ ’ and ‘ $P_n$ ’ is the production in the base year and  $n$ th year respectively & ‘ $Y_0$ ’ is the yield in the base year. ‘ $\Delta$ ’ represents change in the variables from base to  $n$ th year. The study indicates an impressive growth rate of more than 23 percent in area and production of oilseeds whereas yield grew at about 2 percent per annum during the period of study. The changes in the production of oilseeds is attributed to three effects i.e. area effect, yield effect and interaction effect of the two. The Instability Analysis shows that area and production of oilseeds has experienced high variation which indicates that stability has not been obtained in the state. In the light of the above facts, it seems imperative to take further steps to improve the productivity of oilseed crops in Rajasthan.

**Q.1. HARSIMRANJEET KAUR AND MEENASHI GUPTA,** “Problems and Strategies in Production and Marketing of Fruits and Vegetables in India”, *Agricultural Situation in India*, March 2008; pp. 621-623.

Fruits and vegetables form the single largest sub-sector, sharing about 63.8 of area and over 80 percent of the total production under horticulture. These fruits and vegetables are high valued commercial crops grown in India and are the important component of diversification for making agriculture more profitable. However, as horticultural crops are highly perishable in nature, there is an incidence of both pre and post harvest losses. Keeping these facts in view, the present article deals with four different aspects of fruits and vegetable production in India such as: its emerging scenario, seasonal variability, pre and post harvest losses and market infrastructure. The emerging trend suggests that over the years, there is an increase in both area and production of fruits, but there is a decline in productivity. On the other hand, there has been an increase in area, production and productivity of vegetables. The authors also noted wide fluctuation in arrival and prices of horticultural crops indicating large seasonal variability. The pre and post harvest losses in these crops occur due to attack of insects, rodents, birds and infestation of weeds and diseases. Moreover, as far as market infrastructure is concerned, about thirty percent of fruits and vegetables go waste due to lack of proper processing and packaging. This indicates that there is a wide scope of increase in utilization of processing capacity of fruits and vegetable industry. The paper also suggests that there is a need of improving production and productive capacity in the horticulture crops in the country. The processing capacity of the existing units needs to be augmented and the existing facilities need to be modernized. Further, price support programme and organizational support are also required to boost the fruits and vegetable industry.

**Q.1. N. ALI,** “Rice Yield Gap in West Bengal: Scale and Factors Accountable”, *Agricultural Situation in India*, March 2008; pp. 625-629.

Agricultural productivity depends not only on the best available production technology, but also on how efficient are the farmers in

adopting them. This implies as the farmers are more efficient the yield gap is the least and hence, more is the production. With this background, the present paper aims at measuring the yield gap and hence the inefficiency of farmers and the contributing factors for such yield gap. The study has been undertaken in context of West Bengal agriculture. A sample of one hundred farmers from four villages of Birbhum district has been taken on the basis of stratified random sampling with probability proportion to farm size, viz, marginal, small, medium and large. A stepwise multiple regression models was applied to identify and measure the extent of contributing factors in rice yield gap and technological gap.

The author found that the yield gap in local varieties was estimated lower than the HYV in all farm size groups. Among the HYV paddy in kharif season the highest gap was found in Ratna variety measuring more than 50 percent and the lowest gap was in Pankaj variety with 27.45 percent. The technological gap was found to be influenced by four factors namely, copping intensity, index of outstanding credit, status of land ownership and utilization of mass media in case of small farm category. In case of large farm size, age of the farmers and caste were found to be directly related with technological gap and significant at 1 percent and 10 percent respectively. Overall, 70 percent of the variation in technological gap was explained by independent variables included in the model. Paper concluded that growth in agricultural production in the state of West Bengal would have been higher had the yield gap eliminated or reduced. Therefore, more attention is required to make the farmers more efficient in the adoption of modern rice technologies in their fields so that the state can accelerate in agricultural growth in future.

**Q.1. SEEMA JHAGRAWAT AND K.A. VARGESE**, “Assessment of Agricultural Production Growth and Instability during New Economic Regime in Rajasthan”, *Agricultural Situation in India*, March 2008; pp. 631-636.

The present study analyzes the pattern of agricultural production and growth in the context of Rajasthan agriculture during the period 1990-91 to 2004-05. The study is purely based on secondary data on area, production and productivity of various crops such as cereals, pulses, oilseeds, spices, fruits and vegetables. Growth of these variables is assessed using compound growth rate, computed by

fitting exponential function. The study also used a decomposition analysis to assess the effect of changes in area and yield on change in production.

Authors found that crops such as maize, barely, arhar, groundnut, rapeseed and mustard, mango, papaya and guava have positive growth in production due to positive growth in yield in Rajasthan during the new economic regime. Crops such as wheat, maize, bajra, jowar, barley, moth, groundnut, rapeseed and mustard, coriander, mango, papaya and guava were found to have positive growth in yield with positive yield effect in the increased production of these crops. The common crops found in the category of positive yield growth and positive yield effect in production were maize, barley, groundnuts, rapeseed mustard, mango, papaya and guava. The crops found with lower inter year instability in yield were maize, barley, groundnut, rapeseed and mustard, linseed and mango. The paper concludes that the yield stabilizing strategies coupled with yield growth strategies both in rain fed and irrigated situation must get priority as crop production is taken up under very high risk in the state. Therefore, growth with stability for the yield of crops must be the guiding principle for agricultural research and extension strategies in the state.

**Q.1. ALOK ASTHANA AND R.P. SINGH**, "Enhancement in Crops Productivity- Impact Study of NWDPRRA in Sultanpur District", *Agricultural Situation in India*, March 2008; pp. 637-640.

The National Watershed Development Project for Rainfed Areas (NWDPRRA) has been implemented by the Ministry of Agriculture since 1991 with the purpose of increasing agricultural productivity and production in rainfed areas through sustainable use of water resources. The present study attempts to evaluate the project in one of the main block of Sultanpur district of Uttar Pradesh. The study is based on the information collected personally through the structured questionnaire specifically designed to evaluate the impact of the project in terms of improvement in crop productivity. The study finds that due to increased availability of water and various treatments, total cropped area increased by more than 55 percent. The proportionate increase in area under non-foodgrain crop was rather more pronounced. Further, the cropping intensity increased

from 186 percent to 190 percent due to the watershed development in this region, but effect was quite different for different size class. The increase in cropping intensity was higher in case of marginal and small farmers. This has been made possible because of increased access to irrigation after the introduction of the project. There was also a significant improvement in crop productivity during the post project period. The increase in productivity was much higher in case of crops viz., maize, chickpea, paddy and wheat.

The paper also made a benefit-cost analysis for important crops and revealed that there has been considerable improvement in the benefit-cost ratio for most of the crops. Except gram, the benefit-cost ratio of almost all crops was more than 1 i.e. in the range of 1.1 to 1.55 after the watershed project was implemented. This indicates that despite increase in the cost of production of all crops, the gross return considerably increased due to increase in yield of all important crops.

**Q.1. MUNISH ALAGH**, "Aggregate Agricultural Supply Function of India", *Agricultural Situation of India*, September 2008; pp. 417-423.

The present article deals with the problem of an aggregate supply response function of India. Author has reviewed various studies in the context of India laying out the argument of the elasticity pessimist and optimists. It begun with the argument that while allocation to resources at the crop level can be price elastic, this need not be so at the level of the agricultural sector as a whole. Sometimes, contrary arguments are also presented. The author presented an alternative stand of reasoning to the effect that both the arguments may have relevance at particular phases of the development of the economy and within the context of the stage of macro reform policy of the economy is at. The author used terms of trade for agricultural sector to determine the acreage response. The data on terms of trade for agricultural sector has been derived from the ratio of the estimates of price deflators of both agricultural and non-agricultural sector. It has been shown that the agrarian economy reflects the transitional nature of policy regime since 1980 and that the allocation of land resources to non-food grain is price elastic. The results therefore is more substantive than the statement that at the crop level, resource

allocation was price sensitive, which has been accepted for long time. In the light of these results, the author pointed out that ignoring the marketisation of substantial sections of the economy will create both an understanding and policy problem. An appropriate system has been developed in this paper which explains development and is also a tool in the transitional regime.

**Q.1. D.K. MANDAL AND C. MANDAL**, "Increasing Rice Productivity in Low Productive Eastern Uplands of India", *Agricultural Situation of India*, September, 2008; pp. 425-427.

Rice has been an important crop in India covering an area of 44 million hectare and happens to be the staple food for majority of population. As per an estimate cited by the author, the present production of rice fell short of future demand. Therefore, there is a need of increasing productivity of rice. The present study focuses the productivity improvement from the rainfed uplands in India. Out of 44 m.ha. of rice growing area in the country, 7.0 m.ha falls in upland and 14.0. m.ha. falls in medium lands, majority of such lands are situated in eastern India having Red and Lateritic and old alluvial soil. Further, land holdings in these areas mainly belong to the small and marginal farmers and practice low input supplement agriculture. Therefore, there is a vast scope for enhancing income and employment by improving rice productivity from rainfed upland and medium land of eastern India. According to authors, choosing appropriate aerobic rice variety, the yield can be increased to 20 to 30 percent, in view of soil and agro-management condition in these uplands. However, it has been found that all upland area classified are not suitable for aerobic rice. The rice humid and rice sub humid areas are not suitable for aerobic rice, therefore, there is a need for commercialization and diversification of small farms within and outside agricultural practices according to the socio-economic condition of the farmers. In other words, crop-livestock-poultry-fisheries-horticulture-agro forestry is the need of the hour with adequate government subsidies apart from aerobic rice cultivation. This would help to raise purchasing power of the poor.

**Q.1. SHARMA, B.B AND GUPTA, M.M.**, “Valuation of Ornamental Trees- A Comprehensive Method with Examples”, *Agricultural Situation in India*, November 2008; pp. 505-515.

Land is an essential component for developing infrastructures such as railways tracks, roads, dam sites, township etc. and so to accelerate GDP growth and poverty alleviation. These assets mostly belong to farmers and therefore, the value of land, building and trees has to be assessed properly to provide fair compensation to the owners. According to the authors, the presence of orchards and ornamental trees poses problems at the time of calculation of compensation to be paid to the land owners. The present paper felt the need to assess the procedure adopted in the calculation of this compensation and needs thorough improvement. The study has been conducted on 41 standing fruits and ornamental trees from the acquired and private orchards, government parks and gardens in Haryana, Delhi and Uttar Pradesh. In fact, the study considered income generating potential of an acquired tree to be the sound yardstick for its valuation. Formula has been suggested for calculating the volume of timber obtainable from a tree. The timber value has been calculated by finding the volume of wood from boles and large branches up to a certain girth. The value of fresh fruits has been obtained by multiplying average yield by average yearly wholesale price and average bearing life. The study would be quite useful for assessing fair value of selected trees and providing fair compensation to the owners.

**Q.1. RAY, A.K. AND RAM, B.**, “Evaluation of Fodder production and Marketing Strategies and Female Labour use Pattern in Peri-Urban Areas of Kolkata and Delhi”, *Agricultural Situation in India*, November 2008; pp. 517-522.

Cropping pattern change is one of the important factors of deciding farm income. The changes in cropping pattern takes place due to change in the demand pattern and the net return of different crops. The present study is in the context of cropping pattern change in the peri-urban areas of Kolkata and Delhi. The basic objectives of the study are to examine the change in cropping pattern and marketing channel in the study areas and further to examine the

pattern of female labour use. To facilitate the study, a sample of 100 farmers from both Delhi and Kolkata peri-urban areas during early eighties and 2006-07, is collected. The authors observed that being peri-urban areas, the cropping pattern of both the sample areas have been changed drastically. During early eighties farmers in peri-urban areas of Kolkata were producing sorghum where as in Delhi, farmers were growing fodder like bersam, sorghum, maize, oat and bajra crops in the major proportion of cultivable crops. However, in later periods, HYV paddy, vegetables along with berseem became the main crops in peri-urban areas of Kolkata on the other hand, vegetables have become the important crops replacing fodder in Delhi. This is considering high demand of vegetables in Delhi market. The study also reveals that in both the markets, small quantity of produce is being marketed directly to the consumer, it is therefore, felt necessary to organize cooperative market in these areas. The regulated markets are also dominated by commission agents and wholesalers, which are also to be eliminated as far as possible to improve market efficiency. Authors also suggest that women participation is also essential in the marketing process to help them to become financially and socially independent.

**Q.1. SEKHON, M.K., RANGI, P.S., DHALIWAL, TEJINDER,** "Long Term Demand for Food grains in Punjab: Projection Up to 2030", *Agricultural Situation in India*, November 2008; pp. 523-528.

The present paper examines the present production and consumption level of foodgrain in the state of Punjab. It also projects the demand for major foodgrain i.e. rice and wheat in the state. Authors attempted to answer an important question; whether the surplus foodgrain production in the state of Punjab would continue for a long time or not; as the rate of urbanization is increasing at a faster rate and so the demand for food grain. Household demand for foodgrain is derived by the growth in population, urbanization and income growth. Data used for these calculations was derived from various published sources such as Statistical Abstract of Punjab and National Sample Survey 50<sup>th</sup> Round. Various statistical and econometric tools have been used to facilitate the present study. Author finds that elasticity coefficient for rice was higher both in rural and urban areas in the state of Punjab. The projected household

demand for rice was higher in rural areas due to population pressures and higher elasticity coefficient. Authors also estimated the post harvest loss for both rice and wheat which must be avoided using appropriate technology. Nevertheless, it was concluded that the demand for foodgrain in Punjab will not be higher than its production level. Therefore, there is no point to be over cautious while planning production programme in the light of new opportunities thrown by agricultural trade liberalization. It is suggested that since the production of foodgrain is higher than its demand, the government should take triggered decision to diversify agriculture by providing basic required infrastructure for alternative option. Further, keeping in mind the sustainability and ecological problems created by rice crop, in particular, there is a need of diversification.

**Q.1. MANORANJAN PATTNAYAK AND BIBHU PRASAD NAYAK**, “Crop Diversification in Orissa: A Spatio-Temporal Analysis”, *Agricultural Situation in India*, November 2008; pp. 529-536.

Agriculture is the mainstay of Orissa's economy contributing about 25 percent of the state domestic product during 2001-02 and provide employment to about 73 percent of the total work force. However, agriculture in Orissa is characterized by low productivity and traditional methods of production and inadequate capital formation. With this background, the present paper attempts to study the issue of crop diversification in the state of Orissa during during 1985 to 2000. The broad objective being examined is, whether there is any kind of crop diversification at district level and to find out the main determinants of crop diversification. The data has been obtained from published sources of Directorate of Agriculture and Food production, Govt. of Orissa. To study the extent of diversification, various methods are used in the study like Herphindal index and Theil's index. The analysis reveals that Orissa is basically a mono-crop state where more than 50 percent of GCA in majority of district is under paddy. This is followed by pulses and oilseeds. Thus, cropping pattern is monotonically biased towards few crops especially rice. This specialization in production is correlated with the level of yields. The other reason for increasing

preference for paddy production is because of food habit of people in the non-coastal belt. Further government minimum support price programme is increasing at a higher rate and largely concentrated in these crops.

**Q.1. ARUP KUMAR SARMAH**, “A Random Walk with Diffusion of HYV Rice in Assam”, *Agricultural Situation in India*, November 2008; pp. 537-544.

Agriculture in Assam contributes about 31 percent to the Net State Domestic Product and continued to be major sector of the economy. The major impediment to agricultural development that 80 percent of the crop areas as rainfed and exposed to flood and drought. Given that the author in this article suggests that improved agricultural practice such as adoption of HYV seeds with yield advantage, early maturity is one of the viable solutions to raise farmer's income and employment through additional production. The present paper thus focuses on assessing the diffusion behaviour of HYV rice by estimating farmers's retention and ruin of the process. The study was based on secondary time series data on area under HYV of rice, gross rice area and average rice yield from 1975-76 to 2002-03 collected from Department of Economics and Statistics, Govt. of Assam. The study has shown that the liner growth trend of rice area under HYV was 3.88 percent. Further, the logistic growth rate in terms of speed of diffusion of empirically estimated by non-linear regression was found to be 5.71 percent from the growth function. the study has also shown that growth performances by the random walk model and causal relationship in diffusion of rice entails that adoption has no doubt made marginal impact on productivity of rice in the state. But, still it could not significantly breakthrough in yield performance and improves the rice farmers' livelihood in the state due to over dominance of small holding supplemented by lack of irrigation, inability to invest in fertilizer and plant protection measures. Finally, the paper concludes that adoption of HYV rice may be one of possible solutions for enhancement of farmers' livelihood in the state, if effective policies on access to inputs, technology, credit and market with proper awareness are undertaken to demonstrate HYV rice as value added.

**Q.1. SONAL BHATTI**, “Nature of Agricultural Land Lease Contracts: A Study of Three Villages in Anand District”, *Agricultural Situation in India*, Vol. No. May, 2008; pp. 63-69.

The present study attempts to understand the nature of land lease contacts in three villages in Anand district of Gujarat. The study basically relates to field survey findings where, the author visited each village and information was collected through Participatory Research Approach and Focus Group Discussion. Varied sets of respondent like large farmers, small and medium farmers, landless labours, tenants as well as land owners were contacted.

Several reasons pointed out for leasing out land were; personal i.e. land owners are elderly or they are not able to undertake farm operation, further, unwillingness to make investment in farm operation was noted and finally, landowners who were engaged in non-agricultural jobs in urban areas or had emigrated abroad, preferred to lease out their land. Similarly, the reasons for leasing in land were; one; lucrative cash crop cultivation such as banana, potato, tobacco etc., land being as asset for dairy occupation and because of interpersonal relation. Share cropping was the most popular type of land-lease contact in the study region, where, three-fourth of the output accrues to the landlord and one-fourth to the share cropper. In this case, labour was being contributed by the share cropper and all other inputs costs borne by the landlord. The other conclusions of the study are land irrigated through canal flow commands highest rent followed by irrigated by canal lift and ground water. Further, annual land lease was preferred more compared to longer lease period. And finally, participants in the land lease market cannot be attributed to a particular social or economic class.

**Q.1. K.K. DATTA AND UTTAM BHATTACHARYA**, “Retrospection and Introspection of Effect of Climate Change and their Adoption Strategy in Indian Agriculture”, *Agricultural Situation in India*, May 2008; pp. 55-61.

The present paper is an attempt to examine the impact of climate change in Indian agriculture. This issue has come to the public debate as many scientists hold the position that agricultural shifts

are likely due to the climate change. The authors opined that climatic factors broadly limit the physical performances of the system (or what farmers can do) socio-economic factors that influence the goals of the farmers (or what they would like to do) together influence the economic performance of their action. In India, it is of significance where three-fourth of population directly or indirectly depended on agriculture for livelihood. Drought, flood, extreme temperature and other climatic hazards like cyclone etc., exact a large toll every year in terms of human lives and livelihood.

Crop variability is one of the quoted indicators of agricultural impact due to climate change. Authors quoted the estimation by Sinha and Swaminathan that a 2°C rise in mean temperature could decrease rice yield by about 0.75 ton/hectare in the high yield areas and by about 0.06 ton/hectare in the low yield coastal regions. However, the predicted losses from climate change at the country level do not adequately describe the uneven nature of warming impacts, in that weak states will be more influenced by climate shifts. Study also quoted another study of West Bengal and Orissa (IPCC) that in the absence of protection; a one meter sea level rise would inundate 1700 Km of predominantly prime agricultural land. The paper suggested that adaptive capacity represents a practical means of coping with changes and that reduces vulnerability and promotes sustainable development. Technology plays a crucial role in adaption of climate resilient location specific crops, and adaption of modern water saving devices for proactive measures towards promotion of suitable crops and livestock. And, an appropriate climate policy in the regional levels should go simultaneously with the development policy of the country.

**Q.1. G.M. BHATT AND SHABIR AHMED PODDAR,**  
“Agriculture in Jammu and Kashmir: Challenges and Opportunities”, *Agricultural Situation in India*, May 2008; pp. 71-75.

The present paper examines the challenges and opportunities in Jammu and Kashmir Agriculture. Initially, authors pointed out that the performances of J&K agriculture has been far from satisfactory. This is because of several reasons; one - land records are not updated; two - the soil condition and fertility vary from village to village; three - the vested interest have always interfered

the work. Another important aspect of the agricultural development in the region is that the climatic condition do not allow round the year cultivation. Increase in the agricultural output would, therefore have to be achieved only through intensification and diversification of agriculture and rational land use. Authors portray a clear picture of cropping pattern in the state and productivity of crop in different regions in the state. It has been shown that the productivity of crops is differs from area to area.

The paper has concluded saying that agricultural development in the state is far from satisfactory but it provides a promising future, if the state government continued to provide all possible facilities on priority basis and help to solve the main obstacles in agricultural sector. Some of the important policy options suggested were; the state could shift its agricultural development strategy from food security mode to value addition mode, secondly, for optimum utilization of the productive potential of the primary sector, diversification should be the main focus, thirdly, the state government should provide adequate training to farmers about the use of modern technology in agriculture and provision of credits and other inputs should be provided adequately.

**Q.1. IMMANUEL SHEELA, R NARAYANA KUMAR AND S AYYAPPAN**, “Sustainable Alternative A vocations for Coastal Women in India”, *Agricultural Situation in India*, May 2008; pp. 83-88.

The present study focuses on the role played by women in fisheries in the coastal parts of the country. The authors clearly say that fishing in general is the mainstay of men but women too play a major role in pre and post harvest activities. The level of migration of women is generally hampered by social system. They usually depend on their closer environment for their livelihood and most of the work they do are confined within their own environment. The authors have most lucidly cited fishery based location specific livelihood options for fisherwomen in major maritime states of India. For instance in Kerala fisherwomen can have alternative occupation in edible oyster culture, ornamental fish culture, mussel fish culture, fish culture, breeding and seed production of pearl spot, poly culture of sea, etc. There are several other employment avenues open for

women apart from fishing as pointed out by the authors are processing industries, fruits and vegetable preservation, handloom weaving, pottery, clay, tailoring, readymade garments, paper making, book binding etc. The Self Help Group also played a major role in the lives of people especially of women. Women have the opportunity to air their views. In order to improve the incomes of fishing families, the income generating activities with financial support by the government or foreign donors agencies was necessary. There must be adequate financial support and marketing facilities as well as societal support provided to the women for their betterment. According to the authors, the ultimate of alternate livelihood avocations is to reduce poverty among coastal families by empowering the productive capacity of fisherwomen and to elevate the fishermen community from the poor domain.