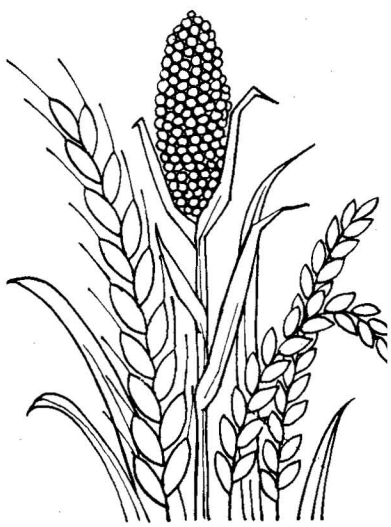
Vol XLV
No. 3

ISSN 0019-5014

CONFERENCE
NUMBER

JULY-
SEPTEMBER
1990

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

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Impact of New Technology and Credit on Farm Income and Employment of Farmers of Banaskantha District of Gujarat - A Case Study

V.M. Patel, S.S. Acharya and I.S. Patel*

The paper deals with normative whole farm approach for increasing income through new technology and credit with special reference to Banaskantha district of Gujarat. The time reference of the study was 1988-89. In all, a sample of 90 farmers distributed among two different agro-climatic zones were selected for the study. Linear programming technique was used for developing optimal farm plan at improved technology with existing capital and with relaxed capital so as to present these in the form of whole farm package. It was planned to develop optimal farm plans for different synthetic farm situations classified according to zones (semi-arid zone and arid zone) and size-groups (small, medium and large). In all, six farm situations (2 x 3) were identified and 12 optimum plans were developed.

The results obtained by the optimisation in the semi-arid zone under limited supply of capital funds show that the area under bajra, jowar and *mung* in *kharif* should be increased while in the *rabi* season the area under mustard and in the summer season the area under groundnut should be increased. In the arid zone the area under cotton, castor and irrigated mustard under both the limited and relaxed capital should be increased. Further, it is revealed that due to limited capital the introduction of livestock enterprises in the farm plan is not possible but by providing sufficient capital, one can introduce livestock enterprises in the farm plan. There is scope for increased income through the adoption of improved crop technology at existing capital so as to earn about 23 to 83 per cent higher income than what was earned earlier. It is also revealed that tremendous scope existed to increase net return through relaxed capital. The magnitude of increase is one and half to three times of existing net return depending upon area and location of farm situation. The highest increase in net return was observed in the case of small farm in the semi-arid zone.

A Path to Success: Case Study of Two Successful Pulses Growing Farmers in Tamil Nadu

S. Iyyampillai†

The data on the performance of the agricultural sector in India show that the major casualty of the process of structural transformation experienced since the fifties has been pulses. Owing to a fall in the relative share of pulses in many respects, and also stagnation in absolute terms, the per capita per day net availability of pulses in India has fallen from 60.7 grams in 1950-51 to 33.2 grams in 1987-88. However, the data for Tamil Nadu give an entirely different picture. The area under pulses and the productivity of pulses have increased at a faster rate compared to that in other States. Hence the paper tries to assess

* Associate Professor, College of Agriculture, Gujarat Agricultural University, Sardar Krushinagar, Professor and Head, Department of Agricultural Economics, Rajasthan College of Agriculture, Udaipur (Rajasthan) and Assistant Research Scientist, Department of Agricultural Economics, Gujarat Agricultural University, Sardar Krushinagar, respectively.

† Lecturer in Economics, Bharathidasan University, Tiruchirapalli-24.

the factors responsible for the grand success of pulses cultivation by studying two successful pulses growing farmers in Pudukkottai district, where the shift in crop pattern is in favour of pulses. These two farmers have been awarded first prizes by the joint Director of Agriculture, Pudukkottai district for having achieved very high productivity in 1987-88 and 1988-89.

The analysis of the social, political and economic background and the cultivation methods followed by them shows that they have some common as well as unique characteristics. Though they are extremely different mostly in terms of socio-political background and have started their life with entirely different economic base, yet now they have been able to generate a sizable amount of agricultural surplus and to invest in income generating assets. They have achieved a very consistent success over the last eight years.

Both of them have got a land holding each of above critical level both in terms of size and fertility of the soil, a good source of manure to protect and maintain the soil nutrients, private irrigation sources and regular contacts with the agricultural extension officers (AEOs). Both of them agree that the higher productivity would not have been achieved but for the above facilities. A sufficient size of land holding is required both to spend whenever necessary and to bear the risk in case there is a failure. So, this has become an essential condition. The combination of private irrigation sources, nutrient management of the soil health and advice of the AEOs are the factors responsible for their success.

Possibilities of Increasing Income and Employment through Progressive Farmers' Practices on Vegetable Farms in Deoria (Uttar Pradesh)

Rakesh Singh and S.P.R. Chaurasia*

In order to generate relevant technologies to farmers in a particular socio-ecological condition, the need for closer interaction between natural scientists, social scientists and farmers is being increasingly recognised. This study makes an attempt to examine the existing cropping pattern, farm income and employment and the possibilities of increasing income and employment on vegetable farms through reorganisation of resources and incorporation of progressive farmers' practices.

Kasayan block of Deoria district of Uttar Pradesh was selected purposively. Input-output data from 60 vegetable farmers were collected by personal interview for the purpose. Linear programming was used as a major tool for analysis. The results indicated that the farmers (on all the farms) preferred relatively more labour intensive enterprises than income generating enterprises, perhaps due to heavy dependence of family labour on farms. The reorganisation of existing resources increased the net returns but decreased employment. Further, the reorganisation with existing resources and progressive farmers' practices increased the returns over both the actual and normative plan I but reduced employment. However, when reorganisation was done with progressive farmers' practices and capital borrowing, both net returns and employment increased (by 173 per cent and 29 per cent

* Lecturer (Agri. Econ.), S.D.J. Post-Graduate College, Chandeshar, Azamgarh and Assistant Professor, Department of Agricultural Economics, G.B. Pant University of Agriculture and Technology, Pantnagar, Dist. Nainital, respectively.

respectively). This may be attributed to increased cropping intensity (by 49 per cent). It is therefore suggested to extend the progressive farmers' practices with strong financial support.

Case Study of Shri M.M. Arwe alias Vasantrao Arwe, A Prominent Grape Grower in Tasgaon Taluka, Sangli District, Maharashtra

N.P. Ranbhise†

The case study of Shri V. Arwe shows how through persistence, hard work and experimentation, he has achieved excellence in grape production. Arwe brothers have expanded the area under grape gardens from one acre in 1963 to 70 acres in 1989. Their total production of grapes from Borgaon farm has exceeded 700 tons, whereas raisin production from Kasegaon farm is about 150 tons. The total net value of both grapes and raisin production is about Rs. 53 lakhs. The family has ploughed back the annual surpluses every year and thus adjacent lands have been purchased to expand their farm business. They get loans from State Bank of India for current operations and for expansion of their business.

Arwe brothers have made division of work among family members. Grapes require light and loamy soil, regular and light rainfall, no mist or fog and dry weather. These conditions are met in Tasgaon taluka. The main difficulty is shortage of water. Inadequate and meagre rainfall occasionally adversely affected the crop. Mostly the grape gardens receive irrigation from wells. When there is acute shortage of water, it has got to be supplied by tanker. As nationalised banks and Sangli District Central Co-operative Bank give loans and subsidy for drip irrigation, many grape growers have adopted drip irrigation system. Shri Arwe has got all his grape gardens under drip irrigation. The cost of installing a new grape garden is quite high. It is about Rs. 80,000 per acre. The bank provides about Rs. 50,000 and the farmer has to put in his share of Rs. 30,000. This includes all expenditure.

The main problem before grape growers today is that of marketing. Shri Arwe sends his grapes to Delhi, Bombay and Calcutta, where quality grapes procure good price. The average price is about Rs. 8 to Rs. 10 per kg. To preserve grape produce over long period, cold storage facilities are necessary. But grape growers of Tasgaon or Sangli district do not have these facilities. Neither the Draksha Bagayatdar Sangh, Pune nor the State Government have been able to provide these facilities so far. There is a good export market in the Middle East countries. Shri Arwe processes and converts nearly half his grape produce into raisin. There is a good urban market for raisins. Grape wine is not a viable proposition according to Mr. Arwe as it is quite costly. However, wholesome and healthy soft drink can be manufactured from grape juice.

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† Sangli (Maharashtra).

Survival to Prosperity: A Story of Transforming Subsistence Agriculture

Dinesh K. Marothia*

An attempt has been made in this paper to highlight a successful story of Shri Hukumchand Jain using the economic parameters of his farm business and to identify the reason why his case could not serve as a replica for others in the same village. This case study tells a story of how Shri Jain started his farming journey from a point of survival to a milestone of prosperity. His farm is located 16 km. away from Khairagarh, near village Changurda, on Khairagarh-Lonji road. Khairagarh district headquarter is situated in the eastern part of Madhya Pradesh. He had 18 hectares of barren, uncultivated and unirrigated land in 1970, with red lateritic soils. The farm is located adjoining to the forest and village Changurda has 75 per cent tribal population. Shri Jain had started part time farming in 1970 in only four hectares of land with *kodo* cultivation and ten buffaloes maintained for family milk consumption. 1970 to 1975 was a period of survival for Shri Jain. From 1976 to 1989, he introduced food and non-food crops, livestock and horticultural enterprises in his cropping pattern. There was a notable increase in capital formation in terms of farm assets and consumer durables. However, it is painful to note that the success story of Shri Jain could not induce any significant change in agricultural behaviour of the other farmers. The main cause of neutral impact on the other farms was the availability of employment in the forest sector and the farmers of this village considered agriculture as a secondary source of livelihood.

A Triumph of Mhaisal Untouchables over Poverty: A Case of Vitthal Co-operative Farming Society

V.B. Jugale†

The Vitthal Co-operative Farming Society (VCFS) is run and managed by the untouchables of village Mhaisal in Sangli district of Maharashtra. The man behind the VCFS was Shri Madhukar Dewal, a Brahmin and a social worker of the RSS, who took initiative to drive away mendicancy, sycophancy and poverty of the Mahar (SC) community by establishing the VCFS. The small pieces of lands owned by the Dalits were under the possession of 17 big savkars against the pledge of Rs. 1.5 lakhs. Shri Dewal contributed Rs. 70,000 as deposits and the rest of the amount was collected from his friends and relatives and Rs. 25,000 as donations. And the redeemed land pieces are pooled together for joint farming. The VCFS earned a profit during the first 13 years. Since 1981-82 the society has been incurring losses because of various reasons. The society manages 50 hectares of land which consists of grape vine yard, sugarcane, jowar, betel leaf, turmeric, fodder, etc. The society has non-dalit members who leased out their land to VCFS. The society has its own

* Professor and Head, Department of Agricultural and Natural Resource Economics, Indira Gandhi Agricultural University, Raipur-12 (M.P.).

† Head, Department of Economics, Bharati Vidyapeeth's Arts, Science and Commerce College, Sangli (Maharashtra).

lift irrigation scheme. The management is very efficient and always thinks of the members' welfare. The society also manages balwadi, bhajani mandal, mahila mandal, youth club and organises seminars, training programmes, educational, cultural and social programmes, etc. for its members' welfare. It has horizontal linkages with various developmental activities. The income of members increased by three fold. The involvement of non-dalit is the real success of Mhaisal society. This philosophy is spreading among small and marginal farmers. But the average productivity of VCFS is below the average productivity of other farms in the village. Besides, the cost of cultivation has tended to increase. The average family income of the Vitthal society is sufficiently higher than the poverty line income. The society members have benefited by way of rent from their lands, wages and employment and other benefits derived because of the society.

Role of Private Entrepreneur in the Service of Farmers - A Case Study of Successful Entrepreneur

B.D. Bhole and S.B. Undirwade*

The area under double cropping has been increasing over the years with the evolution of short duration varieties. Under this situation of multiple cropping, farmers have resorted to partial mechanised farming mainly by using tractors. The paper attempts to evaluate the role played by M/s Krishi Kendra, Akola in spreading the network of tractors in the Amravati division of Vidarbha in Maharashtra. The Krishi Kendra started its business in sales and service of Escort and Ford tractors in 1970. Thereafter, it slowly diversified its activities in all the four districts of the Amravati division, which included opening of branches, manufacturing of trailors and tractor-drawn implements like ploughs, cultivators, harrows, etc. The market share of this firm in the supply of tractors was found as high as 51.80 per cent in Buldhana district in 1981 with a share of 32.35 per cent in Amravati division as a whole. As a result of this, the availability of tractors in Buldhana district rose from 1.57 in 1971 to 11.42 in 1981 for every ten thousand hectares of gross cropped area. The corresponding figures for Amravati division as a whole were 2.09 and 7.52 respectively, as against 1.68 and 3.74 respectively in Nagpur division (5 districts). The number of persons employed by the Kendra increased from 3 in 1970 to 31 in 1980 and further to 71 in 1988. Its annual turnover has also increased tremendously. Systematic planning with close watch on government and banking policies and giving full benefit thereof to the customer-farmers, efficient after-sale service at reasonable rates, discipline in working and maintenance of friendly relations with employees were the main factors responsible for the prosperity of the firm. This leads to the conclusion that private entrepreneurs can play a vital role in taking modern technology at the doors of the farmers.

* Department of Agricultural Economics and Statistics, Post-Graduate Institute, Punjabrao Krishi Vidyapeeth, Akola (Maharashtra).

A Case Study of Successful Tribal Paddy Farmers in Bastar District of Madhya Pradesh

Hanumant P. Yadav†

The paper discusses the factors that have contributed to the success of eight tribal paddy farmers operating in eight different villages of Bastar district of Madhya Pradesh. The findings are based on information supplied by these farmers, our observations and discussions with other farmers and extension officers. Four farmers were selected, one each from Bhanpuri, Khorkhoa, Bade Amabal and Maddota villages from Bastar block (developed block) and another four farmers were selected, one each from Urmapal, Gumma, Talnar and Kundanpal villages from Chhindgarh block (known as backward block). The reference year of the study is 1988-89.

The farmers were educated upto higher secondary standard and belonged to Rajgond, Gond, Halba, Bhatra and Dhurva tribes. These tribes are known as progressive tribes in comparison to Maria and Muriya. The selected farmers were in the age group of 38 to 54 years. Their land holding was more than 7 hectares each but less than 18 hectares. All of them had irrigated land but the percentage area varied widely. Ninety per cent of the land and other resources were allocated to paddy crops. The income from paddy crops was also more or less in the same proportion.

The factors that have contributed to their success are as follows: *(i)* owned irrigation facilities apart from irrigation made available by the Government; *(ii)* application of improved agricultural practices and modern inputs; *(iii)* availability of liberal financial assistance and its utilisation; *(iv)* management of resources and *(v)* education and aptitude for learning.

All these factors are inter-related and have together contributed to the success of the selected farmers. The yield of paddy, net income and farm assets of farmers belonging to the Bastar block are remarkably high as compared to the farmers in Chhindgarh block. It was due to the fact that the farmers of the Bastar block had the following comparative advantages: *(a)* Good quality of land while most of the land in Chhindgarh block was in highland area which had poor soil. *(b)* Farmers of Bastar block had larger area under irrigation. *(c)* Timely delivery of inputs in adequate quantity. *(d)* Better transport, communication and marketing facilities led to remunerative prices of paddy and other produce in Bastar block. *(e)* Opportunities of interaction with non-tribal progressive farmers in Bastar block. *(f)* Farmers of Bastar block had more owned funds to invest in agriculture. And *(g)* effective extension services. All these factors have contributed in combination to the higher level of success of the farmers in Bastar block. These factors should be taken into account while preparing strategies for Tribal Development Plan. The progressive and successful farmers should be motivated to act as change agents in the process of development.

† Reader, Department of Economics, Ravishankar University, Raipur (M.P.).

A Case Study of Successful Farmers' Service Society: Case of Shiroli Budruk Krishak Seva Sahakari Sanstha Maryadit, Shiroli Block, Tahasil Junnar, District Pune

S.M. Pathak and S.D. Desai*

The paper examines the functioning of a successful Farmers' Service Society (FSS), sponsored by Bank of India in Shiroli, a small village in Junnar tahsil of Pune district and identifies the determinants of success which have contributed to its progress. The village has predominantly an agrarian economy. Bank of India opened its branch at Junnar, 3 to 4 km. from Shiroli in 1964. In the light of the recommendations of the National Commission on Agriculture, the FSS was established at Shiroli in 1975 under the Co-operative Societies' Act, 1960. Three primary agricultural societies at Shiroli, Ozar and Hivare Khurd were merged in the FSS. The present command area of the FSS comprises nine villages with a geographical area of about 4,306 hectares and a population of about 9,500. The operational results of the FSS between 1976 and 1989 showed that the share capital and the membership increased from Rs. 3.91 lakhs and 1,220, covering large farmers to Rs. 50 lakhs and 2,645 respectively, encompassing farmers, weaker sections, landless labourers and artisans. During the same period, the working capital, loans advanced to the members and investment of the FSS increased from Rs. 15.10 lakhs, Rs. 11.8 lakhs and Rs. 0.56 lakhs to Rs. 188.5 lakhs, Rs. 158 lakhs and Rs. 4 lakhs respectively. While the reserves have increased from Rs. 1.3 lakhs to Rs. 17 lakhs between 1976 and 1989, the bank loan has risen from 9 lakhs to Rs. 117 lakhs during the same period. The recovery from members to the society was of the order of 91 per cent and from the society to the bank, it was 100 per cent all through these years. The society has undertaken marketing of inputs of agricultural produce and established milk collection centres and a co-operative sugar factory with a crushing capacity of 2,500 tonnes per day, generating employment. The village economy under the jurisdiction of the society has been turned from monoculture to multiple cropping.

The FSS has provided a package of efficient management, extension education to the farmers, infrastructure for marketing, planning and mid-course evaluation and a cohesive corporate leadership. The determinants of success are: *(i)* A catalytic role played by the Bank not only in financing but also in providing managerial support and participation in the endeavours of the society. The Bank also provided the requisite motivation and technical expertise. *(ii)* The Department of Co-operation, Government of Maharashtra, as a third partner in the process of development, has been instrumental in establishing the society and encouraging its activity. *(iii)* The society itself provided the requisite corporate leadership. *(iv)* It is the cohesive and unified administrative group, comprising the Bank, society and the Government, which is mainly responsible for bringing about sustained growth.

* General Manager and Chief Manager, LB/RRBs, respectively, Bank of India, Head Office, Bombay.

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Vol.45, No.3, July-Sept 1990

Success Story of a Small Farmer of Punjab

Joginder Singh and I.S. Chatha†

Shri S. Mohinder Grewal, a small farmer of village Kanganwal in Ludhiana district was identified as a successful farmer. Owning six acres of land, he started with traditional farming in 1966 after leaving the defence service. In the initial period of his farming, capital was the major constraint followed by lack of technical know-how. He tried a number of enterprises on the farm and due to his dynamism and firm decision, he shifted from one enterprise to another depending upon their comparative economics. The land being now the most critical input, he followed intensive crop rotations, made choice of enterprises well in time and maintained a record of each field in detail. The investments made on the farm are based on well thought out partial budgets prepared by him in consultation with the experts. The diversification of the farm helped in providing regular employment to the labourers throughout the year. In this manner, he has never felt the shortage of labour.

Another major reason for his success is that he carried out on-farm experiments to tailor the recommendations of Punjab Agricultural University on the basis of his own resources. The strong extension contacts of the farmer with various experts and organisations contributed to his success. Though agriculture is being commercialised over time, he feels that a strong co-ordination of farm and home is very important in proper farm management.

Managing Wastelands - A Comparative Study of Punjab-Haryana and Uttar Pradesh in Reclaiming Salt Affected Soils

K.K. Datta and P.K. Joshi*

The paper is an attempt to adduce the role of land reclamation corporations to utilise wastelands in different States. Comparing the success of well-set organisations in Punjab and Haryana, the lessons for lagging States are being derived to accelerate the pace of utilising wastelands. The Land Reclamation Corporations in Punjab and Haryana from their inception have fulfilled the dual role most efficiently - arranging crucial inputs for land reclamation and developing horizontal linkages with other departments. The success of land reclamation programme in Punjab and Haryana is testimony to efficient organisational structure. The reclamation programme has not only induced changes in the cropping pattern and increased agricultural production in these States but also generated employment opportunities in rural areas. Reclamation of problem soils in Uttar Pradesh calls for incorporating important activities of successful organisations in Punjab and Haryana to transform agricultural development from subsistence to take-off stage.

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† Senior Extension Specialist (Farm Management) and Assistant Economist (Marketing), respectively, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

* Division of Agricultural Economics, Central Soil Salinity Research Institute, Karnal (Haryana).

Poverty Eradication that is - An Innovative Experiment in Rural Development: A Case Study of Bhagavatula Charity Trust

P.B. Parthasarathy and K. Hemachandrudu†

Bhagavatula Charity Trust (BCT) which is a voluntary organisation registered in 1976 introduced several innovative projects to uplift the poor in Visakhapatnam district of Andhra Pradesh. The paper deals with the success story of this organisation. The BCT was able to advance loans to over 2,000 landless labourers, artisans and women as a rehabilitation measure for the flood victims. It provided ten lakh man-days of work through food for work programme. It trained 5,900 women and men in various income generating activities and skills. It helped members of mahila mandals to start thrift societies with small amounts. It developed models of wasteland development and social forestry.

The Trust pioneered the development of leadership from amongst the poorer and under-privileged, particularly the women. It developed appropriate technology gadgets. Salt-prawn technology in the reservoirs of salt ponds is a master piece of innovative technology. In collaboration with National Bank for Agriculture and Rural Development, the Trust initiated a scheme of land redemption programme for redeeming the lands of small farmers through bank loans. It also started innovative health care programme. Its non-formal education for rural people is a model by itself. The factors responsible for the success of BCT are: dedicated and devoted leadership with a band of committed workers; the philosophy of not working for the people but to work with them; people's participation and close rapport of BCT with the target groups as well as officials; effective monitoring; periodical internal staff meetings and meetings with villagers; and training programmes to improve skills so as to set up their own enterprises.

Determinants of Successful Farming: Case Studies from Jayakwadi Command, Maharashtra

M. Satyanarayana and K.J.S. Satya Sai*

Success in farming is a coveted goal, yet there is no single criterion to judge success. Successful farming can be described as one that ensures adequate level of returns and thus a reasonable standard of living on a continuous basis. Identification and evaluation of criteria for successful farming helps to gain insights on the constraints to and hence strategies for achieving success elsewhere. The data on 12 each of successful and unsuccessful farms from the "Studies in the Economics of Farm Management in Jayakwadi Command Area" for the period 1980-81 were analysed using discriminant and regression analyses to identify the variables discriminating the two groups of farms and to estimate the influence of factors

† Professor and University Head and Agricultural Economist, Cost of Cultivation Scheme, respectively, Department of Agricultural Economics, A.P. Agricultural University, Hyderabad-30.

* Scientist and Research Scholar, respectively, Division of Agricultural Economics, Indian Agricultural Research Institute, New Delhi-12.

affecting them.

The successful and unsuccessful farms differed with reference to the volume, efficiency and nature of farm business. The former operated at a higher volume of business and efficiency in farming; while the latter were characterised by traditional mode of farming. The profit per hectare accounted for about three-fourth of the total difference between the two groups and thus is the most important variable distinguishing them. At the farm level lower percentage of family labour and higher value of fertiliser use discriminate the successful farms against the unsuccessful. The profit per hectare was positively and significantly influenced by the intensity of cropping and interest on working capital. The study indicated that profit per hectare is an important criterion for success in farming. To conclude, success can be fostered by intensive use of land as well as other inputs.

Success Story of a Farmer's Co-operative Society: A Case Study in Himachal Pradesh

M.L. Sharma, D.V. Singh and C.S. Nadda†

Despite the failure of co-operative movement to achieve its social objectives, there do exist a very few models of successful and viable co-operatives in Himachal Pradesh. Among these, Lahaul Potato Growers' Marketing-cum-Processing Co-operative (LPGS) is one which was set up in May 1966 with a membership of 20 growers only. But at the end of 1989 the total membership increased to 1,813 by covering 54 per cent of the total households in Lahaul valley. Lahaul valley offers a great potential for production of disease-free seed potato. The quantity of potato marketed by LPGS increased almost seven times during 1970-90 whereas the total business in terms of value increased by 230 per cent during the same period. Significant items covered under the business of the co-operative society are the sale of seed potato and supply of consumable goods and inputs. Gini concentration ratio shows that the disparity in land holding, production, productivity and per capita income was relatively higher among co-operative members than among non-member households. This fact reveals that membership in LPGS consists of farmers from different income groups, whereas the households selling their produce through private agencies mostly came from a homogeneous group. This group belongs to households near to road-head. An analysis of the marketing cost reveals that different market charges of LPGS were higher than private agencies. This is due to higher transportation cost from farm to road-head and wider geographical coverage by the co-operative society. For measuring gain from pre-harvesting facilities in terms of cash advances, it is observed that the difference between cash advances in LPGS and private agencies accounted for 68 and 80 per cent respectively. This suggests that private traders preferred to pay more cash than facilities in kind. The findings of this study suggest that agricultural marketing co-operatives particularly those dealing with cash crops could definitely be made successful institutions with the induction of conducive environment on the lines of LPGS.

† Agro-Economic Research Centre, H.P. University, Shimla-5.

The Bhutti Weavers' Co-operative Society LTD. - The Only Successful Co-operative in Himachal Pradesh

D.S. Thakur,* D.R. Thakur† and A.S. Saini†

The present paper is a case study of the most successful weavers' co-operative, set up in 1944 in Bhutti village in Kullu valley of Himachal Pradesh. The study is focused on the locale, socio-economic setting, historical background, organisation and management, financial structure, delivery of services and supplies, investment, technology adoption, business operations, impact of the co-operative and factors responsible for its success.

It is found that the weavers' co-operative is carrying out business of around one crore of rupees annually. It has made a phenomenal success over the years in terms of different indicators of success and its business has grown by leaps and bounds over time. The employment, income and profit of the co-operative have increased significantly from year to year. It has improved the quality and designs of its products remarkably so much so that the co-operative unlike other business organisations has no marketing problems and it has no advertisement programme. Its problem is more and more production to fulfil and match the increasing demand and the supply orders it receives for its products which are superfine. Its methods of operation, employment, training, supervision, financing and management as described in this study are highly efficient, business and result oriented, profit generating and different from other organisations. The study also shows that the co-operative has in it the seeds of socio-politico-economic change which it has brought amongst the people in its area of operation. It is indeed a real success story of the farmers' co-operative society in the hills.

Progressive Poultry Unit in Chhattisgarh Region of Madhya Pradesh - A Case Study

K.A. Agrawal, A.K. Koshta, M.R. Chandrakar‡

A case study of a poultry unit in Chhattisgarh region has been undertaken to explore as to which breed gives better performance and how the parameters affect its performance. Three lots of low, medium and high productive level for each of the two breeds of Babcock and Hyline have been examined to answer the question on the progressiveness of this poultry. The mortality and feed intake have been taken as major constraints in egg production. The study reveals that the mortality is high in chick's stage in medium and high productive lots of Babcock. The mortality was the highest in the medium productive lot followed by high productive lot in grower stage for Babcock. The percentage of mortality was found to increase in all the three lots of Hyline in grower stage. In layer stage mortality has been recorded

* Scientist (Agri. Econ.), Regional Research Station, Bajaura, Kullu and † H.P. Krushi Vishvavidyalaya, Palampur-62 (H.P.).

‡ Associate Professor, Assistant Professor, Technical Assistant, respectively, Indira Gandhi Agricultural University, Raipur-12 (M.P.).

minimum in high productive lot of Babcock. Feed intake recorded at a decreasing rate in chicks and layer stage for Babcock, indicating inverse relationship between feed intake and egg production. The optimum egg production has been observed in the case of poultry birds which are 33 to 37 weeks old as peak level. Till the age of 72 weeks egg production in high productivity lot of Babcock accounted for 77 per cent of the total production per day. It is concluded that Babcock is the best suitable breed in terms of mortality, feed intake and egg production for the Chhattisgarh region.

A Comparative Study of Co-operative Marketing Societies in Haryana

M.K. Chaudhary and D.R. Aneja†

In this study an attempt has been made to compare two marketing co-operatives situated in Karnal district of Haryana, one making profits and the other incurring loss or making very little profit. The analysis of business transactions of both the societies revealed that the Karnal Co-operative marketing society has higher share capital, sufficient reserve funds and other resources for running the business and hence its transactions are comparatively larger. The Karnal society is also well managed with adequate number of employees. In contrast, the Samalkha co-operative marketing society has limited resources at its disposal and badly managed. The lack of resources and poor management have resulted in very low turnover and low profits. It is worth mentioning here that neither of the societies selected for the study has undertaken the three important activities of processing of agricultural produce, construction of godowns for storing farmers' produce and interlinking of credit with marketing. For this purpose it is suggested that the societies should be given special grants/loans for construction of godowns and processing plants. Necessary amendments have to be made in the bye-laws of co-operative marketing and credit societies for linking of credit with marketing.

Comparative Performance of Successful (Progressive) Cultivators of Urali Kanchan Village, Pune

R.D. Khodaskar and A.A. Rane*

An attempt is made in the paper to compare the economic performance of five successful cultivators and five average (less progressive and less successful) cultivators in Urali Kanchan village, near Pune city. Detailed case studies of both the categories of cultivators were undertaken in June 1990. The village land is fertile and it has sufficient canal and well irrigation facilities. Similarly, a co-operative sugar factory is located near to the village. Pune City market is quite near to the cultivators for selling their agricultural produce. The

† Agricultural Economist and Assistant Professor of Statistics, Haryana Agricultural University Regional Research Station, Uchani, Karnal (Haryana).

* Field Inspector and Teacher Fellow, respectively, Gokhale Institute of Politics and Economics, Pune-4.

study revealed that the yields per hectare, net farm income and per capita farm income of the progressive farmers were about one and a half to two times those of average farmers. The progressive farmers earned more (about double) net income not only from agriculture but also from dairy enterprise which is a complementary enterprise to crop production. The progressive farmers obtained an income of Rs. 57,830 from all sources annually whereas the total annual income of average farmers from all sources was only Rs. 26,099. The net income of the progressive farmers from agriculture including dairy enterprise amounted to Rs. 21,104 per hectare as against only Rs. 11,072 per hectare for the average farmers.

One of the reasons for higher per hectare yields on the farms of the progressive farmers is the use of larger quantity of fertilisers and pesticides. The progressive farmers spent on an average Rs. 2,296 for fertilisers and Rs. 373 for pesticides annually whereas the average farmers spent only Rs. 1,070 and Rs. 135 per annum for these two inputs respectively. Another reason for the success of the progressive farmers is the higher amount of investment made by them in agriculture. On an average, the progressive farmers had invested Rs. 22,291 in bullocks, tools and implements, bullock cart and oil engines/electric motors whereas the average farmers had invested only Rs. 10,238 in similar assets. The higher amount of investment made by the progressive farmers enabled them to grow cash crops like sugarcane and vegetables which provided them higher profits. Similarly, the progressive cultivators made the best use of recent knowledge of technical agriculture but the average farmers neglected it. It is concluded that sufficient investment must be made by the average farmers in bullocks, tools and implements, water lifting devices, oil engines, electric motors, so that they will be able to grow cash crops like sugarcane and vegetables. Adequate finance from banks should be made available to average farmers to enable them to purchase and apply the recommended doses of fertilisers and pesticides. They should be helped to adopt recent methods of crop cultivation and high-yielding varieties of different crops along with proper care and proper management of farm business.

Organising Rural Poor to Participate in Developmental Process - A Case Study of CARTE

S.P. Bhardwaj and H.C. Gupta†

The Centre for Agrarian Research Training and Education (CARTE) is a voluntary organisation, registered in 1976. The main objective of CARTE is to investigate institutional and organisational problems relating to the participation of the rural poor in the developmental activities and to evolve proper methodology of action to enable them to participate in the developmental process. It also aims at improving the bargaining power, income and standard of living of the rural poor. Towards this end, CARTE has adopted action-based technique and has started Five Action Research Centres (ARC). The present study has been conducted at ARC Ghaziabad and particularly in the village Bayana. Of the various developmental activities undertaken by CARTE, a few have been analysed critically. The 1+1 buffalo scheme has benefited the marginal and landless rural poor to a large extent; it has generated a net surplus of nearly Rs. 1,450 for each lactation period. As regards the

† Scientist, Indian Agricultural Statistics Research Institute, New Delhi-12 and Head, Department of Economics, S.D. College, Ghaziabad, respectively.

repayment of bank loan, it was found that nearly 80 per cent of the loan was repaid, which itself reveals the success of the scheme.

The poultry scheme was introduced especially for the landless and small and marginal farmers under the auspices of the Small Farmers Development Agency. The poultry scheme became non-functional in a short period in a majority of the cases. The general complaint was that veterinary care was provided only to the three beneficiaries and the rest were neglected with the result that out of ten beneficiaries only three could repay the bank loan and the rest were not in a position to repay any loan. The study showed that CARTE remained successful in organising the rural poor to participate in the developmental activities.

Peasant Women's Organisations: Some Successful Experiments

Pam Rajput and Malkit Kaur*

In spite of women participating in peasant revolts, agricultural labour organisations and rural ecology movements, they have been able to build a few enduring rural organisations. Where militant class struggle oriented women's organisations have been built in rural areas, they have been most often based on large Adivasi or Dalit populations. Organisations structured in mixed caste situations bringing female labourers together with toiling peasants have been almost non-existent so far. The peasant women constitute the largest single group which has been marginalised and deprived in the process of development. They need their own organisations, to help them break the barriers of inequality, invisibility and powerlessness, so that they can play an effective and meaningful role in development, not as victims or mere beneficiaries, but as active partners. While these women share all the vulnerability of men of their own class, they have added disadvantages of being women which make them doubly more vulnerable. They continue to get lower wages as compared to men; very few of them own homesteads, land or other productive resources in their own right; most of them are illiterate and unaware of their rights as workers or as women and the seasonality of rural employment makes them even more dependent on their employer. Organisation of the peasant women is thus a vital instrument, not only for equity but to expand the base for women's participation in development. The paper discusses the achievements of two successful rural women's organisations: the Bankura experiment and Tebhaga movement in West Bengal which have been able to accomplish the difficult task of organising peasant women to achieve the objectives of breaking the barriers of inequality and powerlessness and playing an effective role in the development process.

Performance of Lab-to-Land Programme in Amritsar

G.S. Kainth and P.L. Mehra†

Indian Council of Agricultural Research (ICAR) on the eve of the celebration of its Golden Jubilee Year (1979) launched a scheme known as 'Lab-to-Land' Programme (LLP).

* Director and Research Officer, respectively, Centre for Women's Studies, Panjab University, Chandigarh.

† Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

Transmission of farm technology was the main aim and for the first time special attention was paid to the poorest farming families who either because of the size of their land holding, or lack of working capital or lack of exposure to modern farming methods had lagged behind in Punjab's green revolution march. The programme envisaged raising their incomes and teaching them how to diversify their farming systems. This programme was also initiated in Amritsar district in June 1979. In all, eight villages with 260 families were covered from phase I to V. Crop demonstrations were the key element of the programme and to encourage the adoption of selected innovations in the farm plans, the process was facilitated by providing assistance upto Rs. 500 yearly for each family for the purpose of critical inputs. Field days were also arranged and package of practices developed by Punjab Agricultural University were supplied to the farmers.

From the lab side, major educational campaigns were mounted to make the farmers proficient in seed treatment; correct applications of fertilisers for different crops and conditions; use of green manures, micro-nutrients and weedicides. The adoption of the integrated package of practices helped the farmers to increase yields. With the increasing awareness of the farmers about the latest techniques and the close rapport maintained between the farmers and scientists, came excellent results and the farmers began to take a keen interest in learning about and implementing the most up-to-date scientific methods. Variability in yields after the introduction of LLP declined considerably. Another aspect was the supply of spray pumps, weedicides and gypsum on subsidy which were arranged not only for the selected families but for all the willing farmers through Punjab Department of Agriculture.

The cultivation of third (*sathi*) crop of summer *moong* was introduced and the results were so convincing that the farmers adopted this crop which fetched them additional income from fields that otherwise remained fallow. Likewise intercropping of *toria* with *gobi sarson* was demonstrated and got a similar enthusiastic response. Then considerable effort was put in to help the families not only to get more cash but to actually live better by making the best possible use of their land and animals. Farmers had no experience of raising vegetables nor were farm wives aware of importance of vegetables in family's diet. After creating awareness on this aspect kitchen garden kits were supplied. These gardens and tubewell plantations soon became very popular and some farmers even started vegetable cultivation on a commercial scale. Then a campaign was organised for safe storage of grains and a rat eradication drive was carried out in collaboration with the Department of Agriculture. Attention was given to the care of dairy animals and there too the families were able to get more milk and spend less on veterinary treatment by following expert advice.

All in all, the lab-to-land programme encouraged farmers to get the most out of their limited resources. There are many more rural families who need the sort of intensive education provided by ICAR programme. This is certainly not the time to discontinue an effort that has borne fruit abundantly and has been received with enthusiasm in the villages. Rather the programme can be improved with the provision of critical inputs and with an enhanced budget that reflect the overall price rise. Phases of three years rather than two would be more effective and within this longer period the adopted farm families can become convinced of the utility of new techniques and have sufficient time to master them.

A Case Study of a Primary Agricultural Co-operative Credit Society in Nagpur Tahsil

A.K. Vitonde and V.M. Koranne*

This paper attempts to critically evaluate the working of a co-operative society, *viz.*, Kharsoli co-operative credit society in Nagpur tahsil at the micro level with a view to focusing some light on how far the expectations from co-operatives with regard to increase in production as a result of credit support for adoption of new technology are achieved. The reference year of the study is 1987-88. It is observed that the overall average proportion of loan granted with reference to total cost 'A' for operational expenses works out to only 5.48 per cent. Since the farmers are adopting the diversified cropping pattern, the crop loan should be provided on per hectare per farm basis with reference to cost 'A'. The loan granted to the farmers is more than that of their repayment capacity. This indicates the need for increasing repayment capacity of the farmers through adoption of new technology. Transfer of technology and supervised credit can accelerate this process of increasing agricultural production and the income of the farmers.

Rural Upliftment through Co-operatives - Success Story of Gattududdenapalli Large Sized Co-operative Credit Society in Andhra Pradesh

D.S. Raju, V. Ram Mohan and Seema†

Gattududdenapalli Large Sized Co-operative Credit Society of Karimnagar district in Andhra Pradesh which was adjudged as the best society of the district in 1980-81 started functioning during the year 1959-60 with the main purpose of advancing agricultural production credit. The society has taken up multifarious activities for the last 30 years catering to the needs and necessities of the farmers effectively. The society has achieved a spectacular growth in membership, share capital, reserves, business turnover and net profits.

With a modest beginning of Rs. 17,000 as total internal funds in 1959-60, the society has accumulated Rs. 61.35 lakhs during 1988-89 inclusive of share capital and reserve fund. The deposits which stood at Rs. 57,000 in 1978-79 subsequently increased to Rs. 16.23 lakhs in 1988-89.The society has taken up several tasks, such as providing short-term loans for agricultural and allied activities, sale of essential commodities through its own fair price shops, supply production inputs like fertilisers, purchase of agricultural produce from its members and processing, encouraging members to take up seed multiplication after supplying foundation seed, provision of storage facility through its six godowns, transportation of inputs and produce in its lorries and van, giving heavy agricultural implements to its

* Assistant Professors of Agricultural Economics, Shri Shivaji Agricultural College, Amravati and College of Agriculture, Nagpur, respectively.

† Assistant Research Officer, Cost of Cultivation Scheme, Research Associate, ICAR Scheme and Ph.D. Scholar, respectively, Department of Agricultural Economics, College of Agriculture, A.P. Agricultural University, Rajendranagar, Hyderabad-30 (A.P.).

members on hire.

Over the years, the society has owned assets worth Rs. 26.29 lakhs in 1986-87. Advances have shown a steady growth from Rs. 0.47 lakh in 1959-60 to Rs. 34.21 lakhs in 1988-89. With regard to recovery of loans, the percentage of recovery varied from 60.82 per cent to 126.52 per cent during the 30 years of its existence. The society has deputed its staff members to co-operative training institutes for periodical training and re-orientation and imparted education on co-operative principles to them through audio-visual aids.

The factors responsible for the success of the society are: (1) dedicated, devoted, disciplined and selfless leadership of its successive presidents, particularly of Shri Malla Reddy, (2) organising and providing timely supplies and services to its members, (3) undertaking non-credit activities and extending services to the members for their agricultural and allied activities, (4) imparting training in co-operation and agricultural practices to members, (5) infusing co-operative spirit among the members of the society and (6) committed august body of management and well experienced personnel at the helm of affairs.

Economics of Basrai Banana Irrigation by Jain Drip System

S.M. Patil*

Among the States, Maharashtra accounted for 26 per cent of the total production of banana in India. The State grows dwarf variety of Basrai banana and Jalgaon district of the State exports 70 per cent of its production, valued at Rs. 150 crores per annum. An attempt is made in the paper to examine the economics of banana cultivation, irrigated by surface and Jain drip system in Jalgaon district. A case study of a drip irrigated banana farmer at post Dharagir in Erandol taluka in Jalgaon district indicated that the farmer realised higher yields, put more area under irrigation due to saving of irrigation water and effected a saving in the cost of cultivation by 30 to 40 per cent in drip irrigation than in the traditional method of irrigation. The National Committee on Use of Plastics in Agriculture in its fourth report has worked out the comparative cost of different methods of irrigation. The annual operating cost per acre for drip, sprinkler and flood methods of irrigation is worked out to be Rs. 662, Rs. 3,492 and Rs. 2,804 respectively, which showed that the cost of drip system formed about one-sixth of the sprinkler and one-fourth of the flood method of irrigation.

In view of the many advantages of drip irrigation, the Government of Maharashtra and other State Governments have offered subsidy to land holders to help them adopt the drip system for irrigation at the following rates: land holdings up to five acres at 50 per cent, the subsidy amounted limited to Rs. 20,500 each, land holdings between 5 and 15 acres at 35 per cent, the ceiling amount of subsidy being Rs. 14,350 each and holdings about 15 acres at 20 per cent with the subsidy amounted limited to Rs. 12,250 each.

A survey of 13 Jain drip irrigated Basrai banana growers, one each selected from a cluster of 13 villages in Jalgaon district indicated that almost all drip banana growers were able to earn large profits and they recovered the cost of the drip system within the first harvest. The average net profit earned by them varied from Rs. 3,000 to Rs. 66,475 per acre.

The study revealed that education, age and experience of the banana growers are not related with production, income and net profit. The success of these banana growers is

* Extension Officer, Jain Irrigation Systems Ltd., Jalgaon (Maharashtra).

mainly due to the adoption of drip system of irrigation which resulted in saving of water to the extent of 60 to 70 per cent, increase in the area under irrigation by three fold, reduction in the expenditure on weeding upto 75 per cent, saving in the use of fertilisers and wages to labour to the extent of 45 per cent of total expenditure and use of early maturing, uniform quality best varieties of banana. Timely advice and guidance provided by the Jain Irrigation Systems motivated the growers to use appropriate cultural practices, making banana cultivation a profitable enterprise.

Change in Rural Economy through Dairy Co-operatives - A Case Study

D.B. Yadav, R.K. Rahane and D.S. Rasane†

The milk co-operatives have been in the forefront in attracting small and marginal farmers as also the landless labourers to take up dairying as a supportive and paying proposition for betterment of living. Amongst the various primary dairy societies established in the State of Maharashtra, the Hanuman Dairy Society, Yelgud, Kolhapur have diversified its activities along with dairy and has brought about distinct overall development of the area. It has attracted attention of the people from many walks of life. To know all about the Hanuman Dairy Society especially the push and pull factors in the all-round development of the society, the present case study was undertaken during the year 1990. The data were obtained from the annual reports and office records and with the help of personal interview with the secretary of the society. The results of the study revealed that the following factors have contributed to the overall development of the area and the present status of the society: *(a)* undisputed, authoritative and disciplined leadership of the chairman over the years; *(b)* checks and counterchecks for easy, efficient working and transactions; *(c)* expansion of dairy and allied activities covering almost all the requirements of the community in a phased and systematic manner; *(d)* well trained staff and payment of attractive benefits to them; *(e)* quality production of milk and bakery products and their sale through owned network of selling centres; and *(f)* incentives and prizes to the members in expanding the activities of the society. The success achieved by this society calls for its replication for achieving the multi-dimensional development of the rural areas.

† Assistant Professors of Agricultural Economics, National Agricultural Research Project and College of Agriculture, Kolhapur and Assistant Professor of Animal Science and Dairy Science, Mahatma Phule Agricultural University, Rahuri (Maharashtra), respectively.