



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Summaries

	Page
1. An Institutional Alternative in Goat Rearing: A Case Study	<i>Shalander Kumar, D.K. Jain</i> 507 <i>and Khem Chand</i>
2. Co-operative Credit as an Aid to Increase Agricultural Production - A Study in Raipur District, Madhya Pradesh	<i>S.K. Gupta,</i> <i>Ashutosh Shrivastava and</i> <i>M.C. Athavale</i> 507
3. Comparative Performance of Credit Institutions in Promoting Agricultural Development in Gujarat	<i>R.L. Shiyani and</i> <i>Sima H. Vyas</i> 508
4. Rural Credit and Participation of Credit Agencies - An Analysis	<i>R.P. Singh, A.K. Pandey</i> <i>and S.K. Singh</i> 509
5. Role of Management in the Distribution of Irrigation Water in Periyar Vaigai Project	<i>Kasthuri Bai</i> <i>Dhanasekaran</i> 510
6. Collective Gains and Private Constraints in Managing Waterlogged Saline Soils: Why People's Participation?	<i>K.K. Datta</i> 511
7. Flow of Institutional Credit in Agriculture in Indore District of Madhya Pradesh	<i>A.M. Rajput and</i> <i>A.R. Verma</i> 512
8. Pattern and Performance of Different Credit Agencies in the Farming Sector of the Punjab Economy - An Empirical Investigation	<i>Inder Sain</i> 513
9. Sources and Supply of Credit	<i>Balwinder Singh</i> 513
10. Reforms in Regional Rural Banks - A Study of Deregulation of Interest Rates	<i>D.V. Deshpande,</i> <i>K.C. Sharma and</i> <i>M.K. Mudgal</i> 514
11. Variation in Productivity of Short-Term Agricultural Co-operative Credit in Rice Cultivation: A Study on Requirement, Availability and Credit Gap in Chidambaram Taluk, Tamil Nadu	<i>D. Binu Kumar,</i> <i>P. Zeaudeen, V. Banumathy</i> <i>and K.R. Jahanmohan</i> 515

	Page	
12. The Institution of Agricultural Extension in the New Socio-Economic Order: Some Issues and Hypotheses	<i>Vinod Ahuja and Meeta Punjabi</i>	516
13. Institutional Agricultural Credit in Punjab: Growth, Equity and Adequacy	<i>R.S. Sidhu, Arjinder Kaur and Mini Goyal</i>	517
14. Institutional Credit Structure for Agricultural Development in 21st Century: Issues and Strategies	<i>V. Puhazhendhi and V. Mohandoss</i>	518
15. Reforming Institutions for Sustainable Agricultural Development	<i>Amalesh Banerjee</i>	519
16. Induced Institutional Change in Land Market: A Study in West Bengal	<i>Ashok Kundu</i>	520
17. Management of Common Pool Natural Resources through Watershed Approach: A Case Study	<i>A.K. Gauraha and S.K. Sharma</i>	520
18. Economics of Well Irrigation: A Case Study of Kalamb Village (Pune District)	<i>R.D. Khodaskar</i>	521
19. The Agricultural Credit System in India: A Brief Review	<i>D.L. Sale, H.R. Shinde and N.M. Inamke</i>	522
20. An Economic Appraisal of Lending Programme Organised by NGOs	<i>A. Malaisamy, R. Rajesh and S. Kombairaju</i>	523
21. Requirement, Availability and Gap in Agriculture Credit for Selected Crops in Western Vidarbha	<i>V.N. Autkar, S.S. Marawar, C.K. Joshi and S.S. Shitole</i>	524
22. Farmers' Legal Problems and the Impact of Their Involvement on Crop Production and Farm Income	<i>A. Nageswara Rao and R. Vijaya Kumar</i>	524
23. Adat Farmer's Service Co-operative Bank: The Case of a Successful FSS	<i>A.M. Jose</i>	525

	Page
24. Agricultural Credit in India - An Overall View	<i>Kanti Patel</i> 526
25. Marketing and Processing Co-operatives in India: A Pre-requisite for Sustainable Agricultural Development	<i>Brahm Prakash, I.P.S. Yadav and Sushila Srivastava</i> 527
26. Performance of Different Credit Agencies for Tubewell Financing	<i>Bhag Chandra Jain and Dinesh Mishra</i> 528
27. Performance of Primary Agricultural Credit Co-operative Societies in Orissa - A Critical Study for Future Action	<i>R.K. Panda</i> 528
28. SWOT Analysis on Agricultural Inputs Supply System in Kerala	<i>K.P. Mani, P. Chacko Jose and Vrinda Sreenivasan</i> 529
29. Utilisation of Common Property Resources in Bhaisadani Micro Watershed in Nuapada District, Orissa (A Case Study)	<i>H.N. Atibudhi</i> 530
30. Growth, Performance and Loaning Pattern of Regional Rural Banks in Haryana	<i>S.K. Goyal, S.D. Chamola and Parveen Kumar</i> 531
31. Trends in Progress of Institutional Lending to Agriculture in India	<i>V.P. Tyagi, Sant Kumar and Amit Kar</i> 531
32. Groundwater Irrigation and Poor Farmers of Western U.P.: An Evaluation	<i>S.K. Srivastava and B.V. Singh</i> 532
33. Institutional Framework and Agricultural Development in the Eastern Region	<i>Binoy N. Verma</i> 533
34. Role of Indo-Canadian Agricultural Extension Project in Boosting the Production of Staple Food Crops in Potential Areas of Eastern U.P.	<i>Rajendra Singh and Pramod Kumar Singh</i> 534
35. Appraisal of Successful International Agency for Agricultural Development: A Study in Himachal Pradesh	<i>M.L. Sharma, N.K. Sharma and K.R. Sharma</i> 535

An Institutional Alternative in Goat Rearing: A Case Study

Shalander Kumar, D.K. Jain and Khem Chand*

The paper attempts to analyse the economics of contractual arrangements in goat rearing, based on a study of 10 farmers keeping goats on contract, purposively selected from two villages in Sadabad block of Mathura district of Uttar Pradesh. In contract goat rearing, a farmer purchases goats and gives them in lots to the landless labour for rearing. The average size of flock was 26. As per the contract arrangement, the returns over variable cost (excluding labour cost) from the sale of added goats and kids and milk were shared equally by the owner and contractor-goat keeper. The economic analysis revealed that the goat owner receives an average net return of Rs. 11,877 per unit of 26 goats. On the other hand, contractor-goat keeper gets Rs. 17,049 per unit of 26 goats per annum for his family labour which generated a total of 344 man-days per annum. Children and women contributed 50.55 per cent share of the total labour requirement. It may be concluded that contractual arrangements in goat production would help this sector in enhancing productivity and production. In view of the continuous shrinkage of grazing land and non-management of wasteland, Government should give wasteland on long-term contract for a period of 5-10 years to goat keepers for raising fast growing trees with higher foliage along with grasses to meet the forage demand of large population of goats.

Co-operative Credit as an Aid to Increase Agricultural Production - A Study in Raipur District, Madhya Pradesh

S.K. Gupta,[†] Ashutosh Shrivastava[†] and M.C. Athavale[‡]

A case study of farmers of Raipur district in Madhya Pradesh, financed by the Central Co-operative Banks was undertaken to assess the impact of co-operative finance on irrigation, cropping pattern and profit per hectare. The study covered a sample of 50 respondent farmers (30 beneficiaries who took loans from the Central Co-operative Bank and 20 non-beneficiaries who did not avail of the loan) selected from Dhamtari block of Raipur district. The average size of holdings of the beneficiary farmers (6.66 hectares) was more than the non-beneficiaries (2.60 hectares). On the beneficiary farms the percentage of irrigated area was 94.54 and on the non-beneficiary farms 90. Thus in terms of irrigation there was only a marginal difference between the two categories.

As regards the sources of irrigation tubewells were dominant commanding 38.33 per cent of the irrigated area on the beneficiary farms. In the case of non-beneficiary farms canals were the most important sources having 45.75 per cent area under their command. Paddy is the major cereal and teora (*Lathyrus*) is the major pulse of this region. As regards irrigation, paddy was irrigated to the extent of 94 per cent on the beneficiary farms and 89 per cent on the non-beneficiary farms. Besides paddy, fruits and vegetables were irrigated to the extent

* Division of Dairy Economics, Statistics and Management, National Dairy Research Institute, Karnal-132 001 (Haryana).

[†] Research Officers and [‡] Professor and Head, Agro-Economic Research Centre for Madhya Pradesh, J.N. Krishi Vishwa Vidyalaya, Jabalpur-482 004 (M.P.).

of 87 per cent on the beneficiary farms and 100 per cent on the non-beneficiary farms. The percentage of gross irrigated area to gross cropped area was about 82 in the case of beneficiary farms and it was about 68 for the non-beneficiary farms.

The 30 beneficiary farmers received a total amount of Rs. 50,206 as loan, mainly for paddy crop. The inputs included paddy seed, zinc sulphate and weedicides. A few farmers took loan for banana cultivation. Some of them borrowed loan for seed of lady's finger and gram minikits. Our investigation showed that all the inputs received against loan were fully used.

The net profit per hectare for paddy on the beneficiary farms was Rs. 5,258 against Rs. 4,574 on the non-beneficiary farms. Thus the beneficiary farms had a higher profit of Rs. 683 per hectare. Net profit per hectare for gram on beneficiary farms was Rs. 2,470 and the profit on the non-beneficiary farms was very low, only Rs. 740. For fruits and vegetables the profit per hectare on the beneficiary farms was Rs. 19,493 as against Rs. 17,514 on the non-beneficiary farms. It is thus concluded that the beneficiary farmers have not only utilised the loan amount but also earned a significantly higher profit per hectare than the non-beneficiary farms for all the crops for which loan from the co-operative bank was availed.

Comparative Performance of Credit Institutions in Promoting Agricultural Development in Gujarat

R.L. Shiyani and Sima H. Vyas*

This paper examines the role of different credit institutions for promoting agricultural development in Gujarat. The relevant data were collected and compiled from the various reports of State Level Bankers' Committee (SLBC), Ahmedabad. The composition of banks' branches revealed that out of 3,493 branches in Gujarat as on 31st March, 1997, about 48 percent are rural branches which are involved in agricultural development through extending credit for different agricultural activities. The credit-deposit ratio ranged from 41 per cent in the case of nationalised banks to 78 per cent in respect of private banks, with an overall average of about 49 per cent. Total credit extended to agricultural sector in Gujarat was Rs. 27.52 crores at the end of March 1997. The nationalised banks contributed the most in credit support for agricultural development in the state (42 per cent), followed by co-operative banks (36 per cent), State Banks' group (17 per cent) and regional rural banks (5 per cent). The national banks and State Banks' group together accounted for 93 per cent in the total 'direct credit to agriculture' which may be defined as 'Agricultural Production System'. The share of nationalised banks in the total credit supplied to small scale industries (S.S.I), service sector and priority sector by all the banks in Gujarat was 61 per cent, 65 per cent and 52 per cent respectively, while the corresponding figures for State Banks' group were 37 per cent, 23 per cent and 26 per cent. However, various benchmarks stipulated by the Reserve Bank of India for credit support to priority sector, agriculture sector and weaker sections remained unfulfilled by the nationalised banks and State Banks' group. These banks should strive hard to achieve the stipulated targets which will ultimately help in

* Department of Agricultural Economics, Gujarat Agricultural University, Junagadh Campus, Junagadh-362 001.

progressive modernisation of agricultural production in the state.

An alarming situation of total and chronic overdues was noticed in all the banks. The proportion of chronic overdues of the agricultural sector was the highest in case of co-operative banks (52.90 per cent), followed by nationalised banks (28.35 per cent), State Banks' group (11.87 per cent), etc. The establishment of three more District Recovery Cells, one each in Saurashtra, North Gujarat and South Gujarat may help to reduce the number of chronic defaulters. Moreover, incentives to borrowers for timely repayment, attitudinal change amongst the borrowers through Vikas Volunteer Vahini programme, issuing Kisan Credit Cards to farmers, disbursement of loans through Self-Help Groups, organising recovery camps jointly with the staff of District Rural Development Agency, timely and adequate credit support to agriculture, S.S.I. and service sectors, etc., are suggested to minimise mounting overdues, and to increase agricultural productivity, production, value added and better distribution of agricultural growth in the state.

Rural Credit and Participation of Credit Agencies - An Analysis

R.P. Singh,[†] A.K. Pandey[†] and S.K. Singh[‡]

Based on a study of 96 tribal farmers, classified under marginal, small and medium size-groups, randomly selected from two tribal dominated villages in Kanke block of Ranchi district of Bihar, the paper examines the structure of rural credit and rural credit agencies, utilisation pattern, extent of repayment and indebtedness of tribal farmers. The primary data pertained to the calendar year 1996. The findings of the study revealed that out of 96 selected tribal farmers, 88 of them were directly associated with credit financing agencies operating in the villages. It was observed that institutional agencies comprising commercial banks (including regional rural banks) and Government/block and non-institutional agencies such as relatives/friends and moneylenders are the main suppliers of rural credit to the selected farmers. The majority of tribal farmers were closely associated with institutional (formal) credit agencies. It was further observed that the share of institutional credit agencies in total farm credit was as high as 85 per cent while it was as low as 15 per cent in the case of non-institutional (informal) credit agencies. The agencywise analysis indicated that commercial banks (including RRBs) accounted for about 71 per cent of total farm credit, followed by government (14 per cent), relatives (10 per cent) and moneylenders (5 per cent). The institutional credit agencies provided agricultural loans to the extent of 87 per cent of total farm credit to the farmers while the non-institutional credit agencies restricted their credit business to only non-agriculture loans (13 per cent) to the selected farmers.

In the total farm credit, the share of irrigation loan was the highest at 71 per cent, followed by fertiliser loan (8.30 per cent), milk production loan (7.18 per cent), educational loan (5

[†] Department of Agricultural Economics, Faculty of Agriculture, Birsia Agricultural University, Kanke, Ranchi-834 006 and [‡] Department of Agricultural Economics, U.P. College, Varanasi-221 002 (U.P.).

per cent), and health (4.31 per cent). It was further observed that the amount of production loan per farm was high on marginal and small size-groups, indicating that resource poor farmers are willing to boost production and productivity by increasing irrigation facilities, and increased use of fertilisers and seed on the farms. Among non-agriculture loan, education loan occupied an important place, followed by health and marriage loan, indicating the awareness of tribal farmers about children's education. More than 85 per cent of the total outstanding loan advanced by institutional agencies was overdue as against about 30 per cent in the case of non-institutional agencies. The overall repayment performance by the selected farmers with regard to institutional loan was quite poor as compared to non-institutional loan. The economic analysis showed that the average annual income of small and marginal farmers was far less than their annual expenditure leading to heavy financial deficit. It is concluded from the analysis that institutional agencies are functioning well compared to informal credit agencies. However, there is urgent need to modify the credit policy of institutional agencies in providing non-agricultural loans to the farmers. Special attention is also required to improve the recovery performance through policy measures.

Role of Management in the Distribution of Irrigation Water in Periyar Vaigai Project

Kasthuri Bai Dhanasekaran*

The paper attempts to assess the role of management in the distribution of irrigation water in Periyar Vaigai Project, a major source of irrigation in Madurai district of Tamil Nadu. Lenton's Water Delivery Performance Index is used to compare water delivery performance in the head, middle and tail reaches of the Periyar Main Canal from 1986-87 to 1990-91. Water delivery performance is comparatively better in the middle reach. An increase in water release improves water delivery performance index in the head and middle reaches but leads to a decline in the tail reach. The tail reach faces the problem of inadequacy during deficit years and untimely supply during normal years leading to uncertainty and unpredictability of water release in all years whereas in the head and middle reaches, inadequacy and untimely supply of water are serious problems only in deficit years.

Water distribution performance below the sluice outlet or at farm level is assessed using per hectare water use of individual farms across source of irrigation. Conjunctively irrigated farms use less water than canal and tank irrigated farms, as groundwater contribution to surface irrigation enables the farmers to supply the required amount of water during required periods of times. Across reaches, disparity in water use is high between the tail reach and the other two reaches as water is released for only one crop season in the tail reach but for two crop seasons in the other two reaches. Moreover, water delivery performance in the tail reach is not as effective as in the head and middle reaches. Among farms of different sizes, small farms use more water than medium and large farms.

The study concludes that irrigation management fails to ensure equity in the distribution of irrigation water across reaches. But conjunctive use of groundwater and surface water

* Lecturer (Selection Grade), Department of Economics, Lady Doak College, Madurai-625 002.

seems to be a welcoming phenomenon in improving the performance of this system. Hence, there is scope for improving the operational efficiency of the system. Diversion of more irrigation water to the tail end, timely supply of water to the tail reach during normal periods, and provision of community wells in the command area are some of the policy measures suggested to improve the performance of the existing system.

Collective Gains and Private Constraints in Managing Waterlogged Saline Soils: Why People's Participation?

K.K. Datta[†]

Sustainability of irrigated agriculture is under threat due to waterlogging and soil salinity. In India about 36 per cent of irrigated lands have been damaged due to waterlogging and salinity whereas the world over it is about 24 per cent. This disappointing picture caused due to faulty irrigation development has now resulted in the planners giving greater attention right at the planning stage to include irrigation improvement intervention as a preventive strategy. However, failure of institutional aspects of implementing the improvement strategies, lack of provision of drainage coupled with social aspects relating to ineffective communication between farmers and the agencies have all contributed to failure of our efforts to prevent the growing problem of waterlogging and salinity. In the seventies and eighties the major emphasis was system (canal) improvement, on farm development (OFD) and farmers' participation. But each of these prescribed strategies/remedies enjoyed the status of a 'privileged solution' at one time or other. There was no effort to harness the synergetic benefits of those options, with the result that no progress was achieved in testing these strategies together. It does not stimulate testing and modification and does not promote a 'learning process' strategy. From 1990s onward the emphasis shifted to transfer of irrigation management, operation and maintenance from government to the water users through some sort of institutional set-up.

Although it is widely acknowledged that preventive strategies like irrigation improvement intervention have only a limited scope for immediate benefits to the farmers and that curative measures like subsurface drainage are needed to tackle the problem of waterlogging and salinity. Yet subsurface drainage development was neglected both at the national, state and at the farm level. Since subsurface drainage technology is indivisible in nature, it needs collective action which calls for new institutional set-up to tackle the problem. The new set-up, in addition to carrying out the operation and maintenance of drainage system, has also helped to sustain farm income in the post-drainage phase on a long-term basis. Keeping the above in view, the paper suggests the form of institutional set-up which will promote

[†] Senior Economist, Central Soil Salinity Research Institute, Karnal-132 001 (Haryana).

equity among all stakeholders and devolve power and autonomy to local institutions with effective regulation backed by legislation and enforcement, which is needed for sustainable development of agriculture in the saline environment.

Flow of Institutional Credit in Agriculture in Indore District of Madhya Pradesh

A.M. Rajput and A.R. Verma*

The paper makes an attempt to study the flow of institutional credit in agriculture in Indore district of Madhya Pradesh. The findings of the study are based on an intensive enquiry of 200 farmers - 100 borrowers and 100 non-borrowers - selected randomly from five villages in the Sanwer tehsil of Indore district conducted during 1994-95. The farmers were grouped into three size-groups, viz., small, medium and large. It is found that the average intensity of cropping on borrowers' farms was higher at 140 per cent as against 122 per cent on non-borrowers' farms. The input, output, net income per hectare of small, medium and large farms were significantly higher on the farms of borrowers than on the non-borrowers' farms. Similarly, the cost-benefit ratio on the farms of borrowers was higher than on the farms of non-borrowers. The higher use of modern farm inputs in the form of high-yielding varieties, manures and fertilisers, irrigation and adoption of intensive farming by borrowers contributed to significant additional profit over those of the non-borrowers. The study noted that the credit supply from the State Bank of India for the sample farms for crop loan, term loan and total loan per hectare was not adequate to meet the credit requirements in respect of these components. The total outstanding of medium farmers was higher at 30.80 per cent, followed by large farmers (11.93 per cent) and small farmers (4.77 per cent). The crop loan outstanding was higher on large farms, followed by medium and small farms while term loan outstanding was the highest in the case of medium farms, followed by large and small farms. The slow rate of repayment was due to unplanned borrowing and untimely supply of credit.

The main difficulties faced by the borrowers in obtaining credit in the study area were the security formalities in availing credit and its unplanned disbursement, complicated and lengthy procedure of borrowing, lack of proper guidance and delay in the disbursement of credit. Non-availability of essential inputs at the village level posed serious problems to farmers in the effective utilisation of credit. Lack of technical guidance and supervision about the use of credit are two other problems encountered by the farmers in rural areas. Such guidance will be possible only when there is suitable co-operation between the financing agencies and concerned development department.

* Associate Professor, Department of Agricultural Economics and Farm Management, J.N. Krishi Vishwa Vidyalaya, College of Agriculture, Indore-452 001 and Assistant Professor (Senior Grade), Department of Agricultural Economics and Farm Management, J.N. Krishi Vishwa Vidyalaya, College of Veterinary Science and Animal Husbandry, Mhow-453 441 (M.P.), respectively.

Pattern and Performance of Different Credit Agencies in the Farming Sector of the Punjab Economy - An Empirical Investigation

Inder Sain[†]

Based on a study of 101 farm respondents who have taken loans from the various agencies during the year 1996-97, the paper analyses the pattern and performance of different credit agencies in the farming sector of the Punjab economy. It examines the gap between the demand for and supply of farm credit and the equity in the distribution of loans to different size-groups of farms in the light of their share in the operated land. The analysis revealed that the supply of credit to an average farm family amounted to Rs. 6,497 per hectare in the state during 1996-97 while the requirement for working capital worked out to Rs. 12,784 per hectare which indicated that almost half of the requirement for working capital is met from the amount of loan advanced by all agencies taken together. The pattern of agencies providing loans showed that the co-operative societies/banks provided the major share of 68 per cent of total advances to this sector, which was followed by commercial banks and moneylenders with 17 and 13 per cent as their share respectively. Further, the analysis highlighted that next to the co-operative societies/banks, commercial banks were found to be more popular with the large farm size-categories whereas moneylenders were popular with the smaller size-group of farms in the study area. The pattern of distribution of funds financed to different size-categories showed that the distribution is fairly even across farm sizes, though somewhat favourable to small size-groups of farms in the state. It is suggested that the flow of credit needs to be doubled to mitigate the gap between demand for and supply of funds to the agricultural sector. The procedure of cash credit limit needs to be introduced which would help the farmers to avail of the facility of loan as and when required and thus be economical in terms of lending cost. However, a major part of payment of loan needs to be linked with the supply of inputs so as to check its misuse for non-productive purposes.

Sources and Supply of Credit

Balwinder Singh*

The issue of agricultural credit calls for serious attention in the context of reports on suicides by farmers due to crop failures and indebtedness in some states. Based on the estimates generated from the data collected during 1996-97 through a survey of 115

[†] Department of Economics and Sociology, Punjab Agricultural University, Ludhiana-141 001.

* Lecturer, Department of Economics, Punjabi University, Patiala-147 002 (Punjab).

households of six villages spread over three districts of Punjab, an attempt has been made in the paper to examine the extent and pattern of agricultural credit in rural areas of the state.

The land holding size has strong and positive relationship with the amount of credit and the relative share in loans. Per acre capital requirements are fulfilled by the marginal, small and medium farmers mainly through credit. A large majority of the farmers fulfil their credit requirements from non-institutional agencies. A major proportion of the institutional credit is constituted by the short-term loans provided by the commercial banks and the co-operatives. Regarding the supply of institutional credit, the co-operatives are more helpful to marginal and small farmers. The main source of the non-institutional credit is the commission agent (arhtia), whose relative share increases with the increase in the land holding size. The increase in the percentage share of the credit supplied by different agencies across the size of holdings is indicative that the credit system is user friendly provided the creditworthiness and repayment capacity of the debtor are not doubted unnecessarily. Only the farmers operating land above 5 acres made long-term investment by resorting to credit, and to use the term loan facilities of financial institutions. The cost of credit is relatively low for the big farmers and relatively high for the marginal and small farmers.

It is suggested that marginal and small farmers require special attention in regard to credit supply from financial institutions particularly from commercial banks with a view to checking the exploitation of farmers by non-institutional agencies, particularly by commission agents. As the co-operatives are more helpful to farmers having small holdings, there is a need to have structural changes in the organisation of co-operatives so that these can be freed from too much bureaucratic control. It is also necessary to set up a regulatory body to oversee the business of commission agents and to formulate the rules and regulations in this regard.

Reforms in Regional Rural Banks - A Study of Deregulation of Interest Rates

D.V. Deshpande, K.C. Sharma and M.K. Mudgal

In 1975, the first six Regional Rural Banks (RRBs) were set up in India as the 'Poor Man's Bank' to provide institutional credit support to the on-going efforts of rural development. Currently about 80 per cent of RRBs are in loss and their accumulated losses as on March 1997 were Rs. 3,048 crores. Therefore, their viability under the new economic policy regime has become a matter of concern and one of the strategies is to remove controls on them. Therefore, deregulation of interest rates is considered a major policy reform with regard to RRBs. The present study is an attempt to understand the process of interest rate deregulation relating to deposits and lending in RRBs and to assess the probable impact of this deregulation on profitability. The study is based on a sample of 15 RRBs drawn from all India. In the study, the year 1995-96 is considered pre-deregulation and the year 1996-97 is taken as post-deregulation period as deregulation of interest rate was announced by the Reserve Bank of India (RBI) in July-August 1996.

[†] Faculty Members, Bankers Institute of Rural Development, Lucknow-226 012.
The views expressed are those of the authors alone and not necessarily of their Institute.

The main conclusions of the paper are: (i) Interest rate deregulation on advances and deposits announced by RBI in July-August 1996 has been effected by all sample RRBs. (ii) Interest rates on various types of advances due to deregulation have increased by a maximum of 3.5 per cent per annum while the decrease in term deposit rate has been to the extent of 1.0 per cent per annum in most RRBs during 1996-97 (post-deregulation) relative to 1995-96 (pre-deregulation). However, the actual cost of term deposits in sample RRBs has gone up in 1996-97 over the previous year by an average of 0.7 per cent per annum due to a shift by depositors from savings to term deposits and a shift within term deposits from lower interest rate bearing term deposits to higher interest rate bearing term deposits. (iii) The impact of deregulation of interest rates on profitability is felt more strongly via advances (through increased interest income) compared to via deposits (through possible reduction in interest cost) in sample RRBs. However, the combined impact of deregulation of interest rates of advances and deposits on profitability is limited in turning around these RRBs from loss making to profit making institutions except in the case of one RRB (Nainital-Almora RRB). This implies that the interest rate deregulation effected thus far is not adequate for turning around these institutions. Nevertheless, the incremental income estimated due to interest rate deregulation on advances and deposits, on an average, was 29 per cent of profit/loss (absolute value) which is not insignificant. (iv) The deregulation of interest rates is a positive policy initiative aimed at improving financial health of RRBs. A fuller impact of interest rate deregulation will be observed if interest rates are more guided by market forces and recovery rates in RRBs are improved.

Variation in Productivity of Short-Term Agricultural Co-operative Credit in Rice Cultivation: A Study on Requirement, Availability and Credit Gap in Chidambaram Taluk, Tamil Nadu

D. Binu Kumar,* P. Zeaudeen, V. Banumathy** and K.R. Jahanmohan***

This paper seeks to examine the short-term agricultural co-operative credit requirements for rice cultivation, its availability and credit gap and the productivity of short-term agricultural co-operative credit and income of the beneficiary farmers in Chidambaram taluk of Cuddalore district in Tamil Nadu. The study is based on data collected from a random sample of 100 farmers selected from two villages in Chidambaram taluk. The short-term credit provided by the institutional agencies were not sufficient for the purpose for which they were sanctioned. The analysis revealed that in the study area the per hectare availability

* Senior Research Fellow and Assistant Professor (Agricultural Economics), Tamil Nadu Rice Research Institute (Tamil Nadu Agricultural University), Aduthurai-612 101 and ** Professor and Head, and Lecturer, Department of Agricultural Economics, Faculty of Agriculture, Annamalai University, Annamalai Nagar-608 002 (Tamil Nadu), respectively.

of short-term credit from Primary Agricultural Co-operative Bank was 41.69 per cent, 46.37 per cent and 29.60 per cent for the marginal, small and big farms respectively. Thus the per hectare availability of credit was high on small farms, followed by marginal and big farms. The multiple regression analysis showed that there existed greater scope for increasing the rice production among the sample farms by increasing the use of nitrogenous fertiliser and short-term co-operative credit. A comparative study of beneficiary and non-beneficiary groups of farms revealed that the production and returns in rice in beneficiary groups of marginal and small farms were higher than their counterparts in the non-beneficiary groups. The impact of short-term agricultural co-operative credit on rice production is encouraging and provision of short-term credit is an effective way to increase the net returns of rice cultivation. In the case of non-beneficiaries, it is suggested that educating the farmers properly on the advantages of the co-operative agricultural credit would go a long way in increasing the productivity and production of rice.

The Institution of Agricultural Extension in the New Socio-Economic Order: Some Issues and Hypotheses

Vinod Ahuja and Meeta Punjabi[†]

This paper has presented an economist's perspective to the institution of agricultural extension and raised some issues that have recently assumed importance. Focusing on three main components of the extension system - the providers, the people and the price, the paper has argued that there is enough room for private sector participation in delivery of these services. While the information with strong public good component will need to be supplied by the public sector, there are sufficient opportunities where the private sector can play a complementing role. In addition, a number of other innovative models of service delivery have emerged across the world in the recent past which need to be examined in detail.

The paper also argues that the practice of delivering pre-packaged generalised prescriptions/recommendations to all categories of farmers has resulted in wasted efforts. The service providers need to understand the clients better in order to minimise losses due to mismatch between demand and supply. For example, the study points out that the small and marginal farmers, landless labourers, women, rural youth and so on need differentiated extension input and a targeted approach would be necessary to maximise the potential of information and knowledge as a factor of production.

While acknowledging the question of who should pay for these services and how much is a complex one and more research is needed in India context on these issues, the study also points that there is enough international evidence to build on where the commercialisation of agricultural services has helped reorient the extension services to be farmer oriented, to balance demand and supply of information and to provide services in an efficient manner.

[†] Centre for Management in Agriculture, India: Institute of Management, Ahmedabad-380 015.

Institutional Agricultural Credit in Punjab: Growth, Equity and Adequacy

R.S. Sidhu, Arjinder Kaur and Mini Goyal*

Institutional agricultural credit has played a significant role ushering in green revolution in Punjab State as a facilitator for rapid and widespread adoption of modern seed-irrigation-fertiliser technology. The institutional credit also accelerated the process of private capital formation in the state which helped to enhance the productive capacity of the agricultural sector. Since the advent of green revolution a stage has now reached to examine the growth of institutional agriculture credit in relation to output and inputs growth. It is equally important to analyse the share of small and marginal farms, whose income levels are low, in the institutional agricultural credit in order to know whether they have been benefited by the expansion of agricultural credit since the provision of credit to the weaker sections of the rural areas was one of the main objectives of the credit policy. Since the late eighties the Punjab agriculture has become more input intensive which has significantly increased the cash requirements of the farmers. Examination of institutional credit adequacy in relation to the enhanced input demand is also necessary in order to see the effectiveness and role of credit policy in present times. The study highlights these issues and examines in detail the trends in growth, equity and adequacy of agricultural credit in Punjab.

The study shows that the institutional agricultural credit grew by 20 times from 1970-71 to 1995-96 at current prices. However, in real terms the growth was modest and it only doubled during this period but it did not keep pace with growth of output and inputs in agriculture. As a proportion of gross state domestic product originating in the agricultural sector, it first rose from 9.5 per cent in 1970-71 to 16.6 per cent in 1984-85 and then came down to 10.4 per cent in 1995-96. At 1970-71 prices the availability of institutional credit per cropped hectare increased from Rs. 150 in 1970-71 to only Rs. 243.6 in 1994-95. The growth in production credit was inadequate whereas investment credit was found to be growing satisfactorily commensurate with capital requirements of the agricultural sector. The index of growth for production credit with base triennium ending 1986-87 decreased from 120 in 1984-85 to 101 in 1994-95 whereas the index for fertiliser consumption rose from 96.4 to 118.2, the pesticides consumption from 100 to 157.4 and diesel oil consumption from 93.12 to 183.7 during this period. The production credit supply per crop hectare covered less than 20 per cent of the operational cost of wheat, rice and cotton crops in the state, which cover more than 80 per cent of the cropped area. Even the fertiliser expenditure alone was not being met with by the institutional finance in case of wheat and rice crops. The investment credit during this period increased by 13 times whereas the number of tractors and tubewells increased by less than two times. The credit intensity on small and marginal

* Professor of Agricultural Finance (NABARD Chair) and Assistant Economists, respectively, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana-141 004.

farms was estimated to be higher than that on medium and large farms. However, the gap in the availability of credit among these two classes narrowed down over time. The need is therefore suggested that the policy makers and credit planners should look at the present credit policy and redefine it in the context of modern day high tech agriculture requirements of the state.

Institutional Credit Structure for Agricultural Development in 21st Century: Issues and Strategies

V. Puhazhendhi and V. Mohandoss[†]

This paper attempts to critically evaluate the performance of the institutional credit structure and its impact on agricultural development. Estimated values of credit demand through different approaches were compared with the resource position and the emerging issues and strategies relevant for the 21st century are enumerated. Co-operatives, commercial banks (CBs) and Regional Rural Banks (RRBs) are the three entities in the institutional credit structure. The growth performance of institutional credit structure in terms of grassroot level outlets and volume of credit delivery during the last two decades have registered a spectacular growth. Credit acts as a facilitator and it performs the important function of providing the farmers with the requisite control over resources affecting production. It is difficult to establish a direct relationship between credit and output as the former acts as a facilitator for adoption of commercial practices which directly influence the production performance. Hence, fitting a regression on value of output with reference to inputs and on value of inputs to credit, the results revealed that one percentage point increase in agriculture inputs contributed to 0.50 per cent growth in gross value output and one percentage point increase in short-term credit flow contributed to 0.76 per cent growth in agriculture input. The increased flow of term credit significantly contributes to the growth of private capital formation. The attempt to establish the relationship between capital formation and credit flow revealed that one per cent increase in credit flow contributes to 0.34 per cent in private sector capital formation during the period 1970-95.

The demand for credit in Indian agriculture is showing an increasing trend due to commercialisation and diversification that has taken place in the sector over time. As against the estimated credit demand for agricultural development placed at Rs. 46,000 crores during 1997-98 and Rs. 54,300 crores during 2002-03, the estimated credit flow in the terminal year of Eighth Plan was of the order of Rs. 26,000 crores. Hence, the additional resource gap will be Rs. 20,000 crores in 1997-98 and Rs. 28,300 crores in 2002-03. Under this situation of wide gap between demand and supply of agricultural credit, the future strategies must focus mainly on the resource mobilisation to meet the growing demand of credit.

Poor health of the financial institutions mainly due to inadequate volume of business and low profitability, mounting overdue, high transaction costs of lending, unhealthy competition among different entities of the institutional credit structure are some of the major issues which are being faced by it and need to be tackled during the coming century. If the

[†] Deputy General Managers, National Bank for Agriculture and Rural Development, Mumbai-400 054.
The views expressed in the paper are those of the authors and do not represent the Institution to which they belong.

recommendations of the recent committees on financial sector reforms and restructuring of the credit structure are considered seriously, commercial banks may opt for thinking in the line of viability, thereby withdrawing from agricultural lending especially in the rural areas and focus on urban areas. Therefore, the co-operatives and RRBs have to play a major role in enhancing the credit flow in rural areas. The efforts being taken by RBI for establishing district level banks will be a viable proposition which can help in mobilising resources available in the rural areas and deploy them for agriculture. In view of enormous untapped potential both in demand and supply side of agricultural credit, establishing district level institutions will only be supplementary in nature. The innovative experience of introducing informal nature of lending through the inclusion of NGOs and SHGs should be adopted on a wider scale to improve the access of credit to agriculture.

Reforming Institutions for Sustainable Agricultural Development

Amalesh Banerjee*

Agricultural organisations and institutions necessary for sustainable development require complete overhauling and reform. The techno-mechanical approach to agricultural development adopted in the sixties has failed to meet the necessary conditions of sustainable development. It requires radical action to reform tenancy, inheritance, marketing and financial institutions. Along with the reform of existing institutions, new institutions and organisations like water management, flood and drought control, panchayat system have to be developed.

Two major contentious issues against sustainable development are the land holding and ecological balance. Absence of effective implementation of land reform has given rise to brutal feud between the landlords' army and the landless people. In hill areas ecological balance are distorted by shifting cultivation and commercial exploitation of natural resources. Community institution of participatory management co-operatives for forest and water resources can be an effective deterrent to these destructive forces.

While the existing institutions like panchayats and co-operatives have to be reformed and made efficient, new institutions have to be evolved for sustaining agricultural price, for food security of the people and ecofriendly inputs. A contingent approach to agricultural production in the hills and plain areas is very effective for sustainability of forest, water and other common community resources. A contingent approach is the co-operative and consensus approach evolved in the village body or council of people which, in different forms, persists in our traditional society. Technocratic approach to agriculture has to be changed and institutional and behavioural approach has to be applied for sustainable agricultural development. Dynamics of technology, production and social change should go together.

* Professor, Rabindra Bharati University, Regent Park, Calcutta-700 040.

Induced Institutional Change in Land Market: A Study in West Bengal

Ashok Kundu[†]

In the induced innovation literature in agriculture, institution is treated as endogenous and is assumed to be induced by technology, resource endowment and cultural attributes of an economy. A successful state induced change in institution may trigger further changes in its wake and the process may be sustainable if the institutional innovations are consistent with the basic resource endowment of the economy. This paper examines the induced institutional innovation hypothesis in the context of West Bengal agriculture. The study is based on data from household surveys conducted in 1991 covering 2,200 families selected from 40 villages in six districts representing the dominant agro-climatic characteristics of the state. During the late 1970s significant changes were introduced into the land tenure system of West Bengal through enforcement of tenants' right and redistribution of ceiling surplus land. This state policy was followed by several changes in the agrarian institutions in the state. A notable change in the land market was the gradual replacement of share-cropping by fixed rent tenancy. This change in land market institution has been induced and supported by the technology, resource endowment and cultural factors. The new institution of fixed rent tenancy has augmented yield and farmers' income. This has also promoted the share of labour compared to that of land and capital. It may be concluded that the institutional change in the land market of West Bengal has been, by and large, consistent with the requirements of higher growth and redistribution of output (income) in favour of labour.

Management of Common Pool Natural Resources through Watershed Approach: A Case Study

A.K. Gauraha and S.K. Sharma*

The Sargipal watershed in Bakawand block of tribal Bastar district of Madhya Pradesh was purposively selected for the study to understand the role of organisations/institutions, constraints and approach for all round development of watershed area. For the purpose of the study, data were collected from primary and secondary sources. For the collection of primary data a random sample of 60 farmers was selected within the watershed. Besides, information was collected from officials, local leaders and non-governmental organisations (NGOs). The principal objective of the project, initiated in 1991-92, was to improve and stabilise the productivity of both the arable and non-arable lands. Of the total geographical area in the watershed, about 83 per cent was arable and the remaining 17 per cent was non-arable land. Most of the non-arable land was a common pool resource and was highly

* Institute for Studies in Population, Agriculture and Rural Change, University of Kalyani, Kalyani-741 235 (West Bengal).

* Assistant Professor and Associate Professor, respectively, Department of Agricultural and Natural Resource Economics, Indira Gandhi Agricultural University, Raipur-492 012 (M.P.).

degraded. Out of the total expenditure on the project, about 25 per cent and 37 per cent were spent on basic activities and arable land treatment respectively. About 36.50 per cent and only 1.83 per cent amount were spent on non-arable land treatment and livestock management respectively.

The opinion survey and participation study of farmers revealed that all sample farmers were not fully aware of the project and their participation was very poor in overall project activities. Many farmers were indifferent about the work taken up on soil conservation work as they were not sure about the benefit of the programme. There was lack of co-ordination among departments and supervising authority. It was also pointed out that monitoring and evaluation of the project was essential for the future development in the project. There was a lack of effective management of the common resources. Most of the common pool resources in the project area has degraded.

In designing improved system of common property resource (CPR) management, a need based technology should be developed for the area. At the state level to adopt the watershed approach, creation of an effective organisational structure is necessary to facilitate its implementation and co-ordination with other programmes and reorientation of the existing staff. The case study showed that the impact of the project on crop yields and net benefits was not significant. Social forestry and other activities had also not shown any significant results due to lack of well defined management system. Farmer's participation in the project was low. Organising farmers/CPR users into some form of formal association, preferably a co-operative society, with few economic activities seems to be one of the practicable approaches for enlisting their participation. The NGOs can play a useful role in education, motivation and organising CPR users. The government should confine its role to the provision of technical and financial support and to create an environment within which farmers/CPR users' organisation can work effectively and manage their resources efficiently.

Economics of Well Irrigation: A Case Study of Kalamb Village (Pune District)

R.D. Khodaskar[†]

An attempt has been made in the paper to assess the impact of well irrigation on changes in crop pattern, cropping intensity, and yield and production of various crops. The study is based on data collected from 15 farmers selected randomly from Kalamb village of Ambegaon taluka in Pune district of Maharashtra. The reference period of the study was 1997-98. The sampled farmers cultivated sugarcane perennial crop and vegetable crops in both the seasons. Bajra and groundnut are cultivated in the *kharif* and wheat in the *rabi* season. The study revealed that irrigation influenced various agricultural practices and

[†] Gokhale Institute of Politics and Economics (Deemed University), Pune-411 004 (Maharashtra).

cropping pattern. Well irrigation, as is evident from the present study, appears to have changed the cropping pattern. This change has actually two aspects: one is the impact on the number of crops cultivated and the other is the change in the proportion of the area under each crop.

It is observed that a larger proportion of the gross cultivated area is devoted to the cultivation of more profitable crops such as sugarcane and vegetables as compared to cereals. It is suggested that the farmers should put more area under vegetable crops and satisfy their foodgrain needs by purchasing them from the open market. Such policy will maximise their total farm profit per year. Similarly, constraints like shortage of funds and shortage of labour can be solved by following scientific credit management practices, i.e., mainly spending the borrowed amount for productive purposes and repaying the loan in time. Similarly, the landless labourers from dryland agricultural areas could be induced to migrate temporarily to this area if remunerative wages are paid to them. It is observed that the productivity of principal crops, income and employment have increased reducing out-migration and preventing the disintegration of the family, with access to better infrastructural facilities.

The Agricultural Credit System in India: A Brief Review

D.L. Sale, H.R. Shinde and N.M. Inamke*

An attempt has been made in the paper to review the agricultural credit system in India with respect to its structure, progress and constraints and interest rates, costs and margins of institutional credit. Information from secondary sources was used for the purpose. The investigation reveals that the significance of private agencies in rural finance has come down due to effective working of the institutional agencies. Government started various schemes and modified the credit structure for strengthening the rural credit system and making it more development oriented. There has not only been an increase in the number of primary agricultural credit societies and commercial banks but also a significant increase in agricultural credit advanced by them in the last four decades. Higher cost of loan, high level of overdues, lack of trained staff, absence of effective credit planning, problems in security for loan and imbalanced dispersion of branches have acted as constraints in the institutional credit system. The estimate of demand for short-term credit for crop production would be Rs. 23,888 crores in 2000 A.D. The total agricultural credit requirement to be financed by commercial banks by 1999-2000 would be Rs. 64,037 crores and the resources available will be only Rs. 57,035 crores. The implications of the study are that promotion of nationally integrated formal rural financial market with sustained government support is essential for the transfer of new technology for agricultural development. Improvements in vertical organisations, density, proportion of rural clients reached, and the financial structure of rural institution are central to their clients' well being and their own. These improvements, together with maintenance of conducive interest rates, are far more important in achieving the objectives of term financial liberalisation alone.

* Department of Agricultural Economics, Mahatma Phule Krishi Vidyapeeth, Rahuri-413 722, Dist. Ahmednagar (Maharashtra).

An Economic Appraisal of Lending Programme Organised by NGOs

A. Malaisamy, R. Rajesh and S. Kombairaju[†]

The paper highlights the impact of Self Help Groups (SHGs) on the assets, income and employment of the beneficiaries and studies the performance of loan repayment. It attempts a comparative study of the SHGs and co-operatives to find out the relative advantages between the two. The study evaluates the functioning of two non-governmental organisations, namely, Professional Assistance for Development Action (PRADAN) and Association for Sarva Seva Farms (ASSEFA) which have organised SHGs in villages for availing credit. For the purpose of study a sample of 120 beneficiaries including 45 beneficiaries from SHGs organised by PRADAN, 45 beneficiaries from SHGs organised by ASSEFA and 30 beneficiaries from co-operatives was selected from three villages covered by each of these NGOs and co-operatives in Madurai district of Tamil Nadu. The data pertained to the year 1994-95.

The study reveals that the SHGs have helped the beneficiaries to increase their asset, income and employment position. The results showed that the asset value and income of the SHG beneficiaries increased by about six times and eight times respectively after loan assistance as compared to the pre-loan period. The level of employment of the SHGs beneficiaries has also increased by more than two times in crop activity, by four times in milk enterprises and by about three times in petty shop business. The repayment performance of the beneficiaries of the SHGs is better than those of the co-operatives. Income and employment of the beneficiaries of the SHGs had shown significant increase as compared to the beneficiaries of the co-operatives. The recovery of loans by the SHGs was good without much default. It was found that about 87 per cent of the SHG beneficiaries made regular repayment of loan amount as compared to only 40 per cent in the case of co-operative beneficiaries. Thus the SHGs are seen to be successful in assisting the weaker sections and the members also find the SHGs most convenient in access as they did not face any problem in obtaining credit. Policy measure should be initiated for promoting the SHGs to help the weaker sections.

[†] Former Post-Graduate Student, Assistant Professor and Professor and Head, respectively, Department of Agricultural Economics, Agricultural College and Research Institute, Tamil Nadu Agricultural University, Madurai-624 104.

Requirement, Availability and Gap in Agriculture Credit for Selected Crops in Western Vidarbha

V.N. Autkar, S.S. Marawar, C.K. Joshi and S.S. Shitole*

The paper makes an attempt to estimate the credit requirements, to study the sourcewise availability of credit and to work out the credit gap at existing and recommended levels of technology in Akola and Amravati districts of Vidarbha region in Maharashtra. Both primary and secondary data were used for the study. The primary data were collected from a sample of 130 cultivators from the region, classified into small, medium and large size-groups. The data pertained to the year 1996-97.

The selected farmers adopted a diversified cropping pattern. The foodgrain crop accounted for about 67 per cent of the cropped area and soybean and groundnut crop accounted for the remaining area. The main agencies which supply credit to the farmers are co-operative societies, moneylenders, friends and relatives. The proportion of borrowers depending on institutional agency worked out to 70.8 per cent of the total, while 22.3 per cent of them depended on moneylenders and about 6.9 per cent on friends and relatives. Thus the non-institutional private creditors still dominate the rural credit scene. With the progressive increase in the diversification of sources of credit, moneylenders have also become increasingly an important source of credit. Among the different agencies supplying agricultural credit the share of co-operative society was as high as 53 per cent, followed by moneylenders with a share of 42 per cent.

The analysis of credit gap indicates that there exists a credit gap both at existing and recommended levels of technology. The need for borrowed capital increased as the farmers shifted from existing cultivation practices to recommended cultivation practices. The adoption of recommended technology could not be possible without the availability of proper credit facilities. The study therefore suggests that efforts should be made by the lending agencies to extend credit facilities to the farmers based on their requirements so that the rate of adoption of recommended technology is not impeded.

Farmers' Legal Problems and the Impact of Their Involvement on Crop Production and Farm Income

A. Nageswara Rao and R. Vijaya Kumar[†]

Use of yield increasing inputs like improved seed, fertilisers, irrigation, credit, and technology is essential for higher yields but their sustainability also depends on other important social factors like property rights, health, lack of social tensions, etc. Involvement of farmers in various local disputes and legal cases have both direct and indirect influence on crop productivity and farm income. This paper has made an attempt to bring out the

* Department of Agricultural Economics and Statistics, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola-444 104 (Maharashtra).

† Professor of Agricultural Economics, S.V. Agricultural College, Tirupati-517 502 and Research Assistant, National Academy of Agricultural Research Management, Rajendranagar, Hyderabad-500 030, respectively.

impact of farmers' involvement in legal disputes and its impact on crop production and farm income in Chittoor district of Andhra Pradesh. The study is based on 196 cases registered with the police in the district, of which 50 cases belonged to partition disputes and 146 related to land disputes as well as 288 legal and 45 legal and non-legal cases.

Partition cases and land disputes among seven types of legal cases formed the major legal cases among the farming community. Deaths were more in partition cases compared to land disputes which were more among neighbours involving groups of people. Involvement of farmers in legal cases caused delay in important crop operations like transplanting, weeding, irrigation and harvesting by 10 to 20 days. Human labour utilisation for paddy, groundnut, and sugarcane was less on legal farms by 17, 10 and 14 man-days respectively compared to non-legal farms. Use of productive inputs like manures, fertilisers and pesticides were also low on legal farms. Similarly, production (variable) costs of paddy, groundnut and sugarcane were lower on legal farms than on non-legal farms. Under-use of productive resources and delays in completing timely crop operations resulted in lower yields and net returns of these three crops on legal farms. Involvement of farmers in legal cases led to substantial reductions in crop yields and incomes of the farmers.

Adat Farmer's Service Co-operative Bank: The Case of a Successful FSS

A.M. Jose*

The paper evaluates the performance of Adat Farmer's Service Co-operative Bank (AFSCB) in Kerala and identifies the factors that contributed for its success as a co-operative organisation. The study gains its importance from the backdrop of the decline of co-operatives as an organisation in India. The framework of analysis of the present study owes to the model propounded by Tushaar Shah in which the co-operative is conceptualised as a social system and explored the factors that affected the performance. Naturally the sub-system like the governance structure, critical linkages, patronage system, micro environment and operating system have been analysed to draw inference on the working of the co-operative. The efficiency of the operating system is understood by using financial ratios on the secondary data collected for a period of 12 years, 1985-86 to 1996-97. For understanding the other sub-systems of AFSCB, primary as well as secondary data were used. The primary data were collected from 60 members, managing committee members and from office staff.

The results of the analysis revealed that the AFSCB has done well in mobilisation, deployment and recovery of funds and in other various operations of the co-operatives. Further, it is observed that the AFSCB's managing committee was keen in promoting

* Assistant Professor, Department of Co-operative Management, Kerala Agricultural University, Vellanikara-680 654 (Kerala).

member interest, which is evident from the diversified activities and the quality in which it reaches to the members. The AFSCB could manage critical linkages with external organisations which have positive impact on its working. The AFSCB has built, through its operating efficiency, as well as the access it has with federal system, an unique capability to serve its members better than its competitors. Naturally, the AFSCB has got high domain centrality. The AFSCB's very large reach of its clientele suggest that the bank may enjoy scale and scope of economies in its various costs. On the whole, the better performance of AFSCB in all spheres of activity explains the fact that co-operatives have to respond effectively to the needs and aspirators of their owner-members.

Agricultural Credit in India - An Overall View

Kanti Patel[†]

The aim of this paper is to examine the need for agricultural credit in rural area, the sources which provide the credit and their performance and drawbacks. As the agriculture sector is the predominant sector in the Indian economy, the farmers need credit for short-term, medium-term and long-term and for productive, unproductive and consumption purposes. They need credit for seeds, fertilisers, new inputs, digging wells, tubewells, marketing, land improvement, etc. The share of non-institutional agencies in agricultural credit provided to the farmers has declined from about 93 per cent to 36.8 per cent between 1951 and 1981 while the share of institutional agencies has increased from 7 per cent to 63 per cent during the same period. The co-operatives, commercial banks and the government contributed about 30 per cent, 29 per cent and 4 per cent of total agricultural credit respectively.

The major defect in financing by private sources is that they provide credit at high rate of interest for unproductive and consumption purposes which is unsuitable in the context of planning for larger production. In 1995-96 there were 88,000 primary agricultural credit societies (PACS) which provided short-term loans to the extent of Rs. 9,970 crores. But most of the PACS are dependent on DCCBs and they could not mobilise rural savings. They had high level of overdues.

The commercial banks which provide the credit to the agricultural sector are saddled with the problems of staff in rural areas and the recovery. The Regional Rural Banks set up to provide credit to small and the marginal farmers also do not fulfill the aim because of lack of support of State Governments and lack of proper monitoring by sponsor banks. The National Bank for Agriculture and Rural Development (NABARD) was set up in July 1981 with the aim to solve the credit needs of the rural sector. It also faces the problem of shortage of resources, affecting its proper functioning. It is suggested that the Government has to evolve a proper structure to provide credit to the agricultural sector to promote rural development.

[†] Head, Department of Economics, St. Xavier's College, Ahmedabad-380 009 (Gujarat).

Marketing and Processing Co-operatives in India: A Pre-requisite for Sustainable Agricultural Development

Brahm Prakash, I.P.S. Yadav and Sushila Srivastava*

The paper examines the role of co-operatives in marketing and processing, reviews the progress of co-operative marketing societies in India, identifies the constraints for their slow progress and suggests measures to remove the constraints for the economic development of the country. The paper is based on the secondary data collected from different sources. The study revealed that there were 2,636 primary co-operative marketing societies at the mandi level, covering all the major wholesale marketing in the country and 3,290 specialised primary marketing societies. Besides, there were 157 district/central societies in some of the states. All the states and union territories are covered with general purpose apex level marketing federations with NAFED at the national level. The value of agricultural commodities marketed by the co-operatives increased to Rs. 6,800 crores in 1992-93 from Rs. 179 crores during 1960-61. All the major commodities like foodgrains, oilseeds, sugarcane, cotton, fruits, vegetables and plantations crops are marketed by the co-operatives. Eight states, viz., Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu and Uttar Pradesh, accounted for nearly 92 per cent of the agricultural produce marketed by the co-operatives.

Although the co-operatives have made significant contribution to the Indian economy, their achievements are not fully satisfactory. Confining to a few agricultural commodities only, regional disparities, lack of financial resources, processing and storage facilities, inefficient management, indebtedness of farmers to local traders, predominance of vested interest in the society, lack of loyalty among the members, establishment of non-genuine societies, organised opposition by the private sector are some of the bottlenecks responsible for the slow growth of the co-operatives. The growth of co-operatives can get momentum by strengthening the existing societies by increasing the share capital and reducing the dependence on credit, diversifying their activities, developing multi-purpose societies, harmonising between different types of co-operative societies, restricting unnecessary government interference, employing qualified and committed professionals, etc. In view of preponderance of small farmers in the country and the existing defects in the marketing and processing system of agricultural produce, co-operation appears to be the only and right solution to the problems of marketing.

* Indian Institute of Pulses Research, Kanpur-208 024 (U.P.).

Performance of Different Credit Agencies for Tubewell Financing

Bhag Chandra Jain and Dinesh Mishra[†]

The paper attempts to study the performance of different credit agencies for tubewell financing in Raipur district of Madhya Pradesh. The data used were obtained from the Dena Bank, Bank of India, Punjab National Bank, Land Development Bank, Central Co-operative Bank and Regional Rural Bank (RRBs) for studying the tubewell financing. The study is based on analysis of data collected from a sample of 28 tubewell farmers from two different situations in the selected district, pertaining to the agricultural year 1995-96.

The results of the study indicated that the rate of interest is relatively low in nationalised banks as compared to the District Co-operative Land Development Bank (DCLDB) in financing tubewell. However, the period of repayment of the loan is scheduled more in nationalised bank as compared to DCLDB. The RRB charges higher rate of interest as compared to other financial institutions.

The analysis of economic feasibility of tubewell financing revealed that the additional cost over unirrigated crops is more by 51 per cent in borrowed-cum-self-finance category. It implies that the repaying capacity of borrowed-cum-self-finance category is more satisfactory due to higher added cost associated to higher added net return. The study suggests that the State Government should reduce the rate of interest by subsidising the component of tubewell in accordance with the size of holding as well as caste of the farmer. The Government should frame a time bound schedule in co-ordination with agriculture department, hydrogeological department, financing institution and Madhya Pradesh Electricity Board to process the application of the farmer to install a tubewell.

Performance of Primary Agricultural Credit Co-operative Societies in Orissa - A Critical Study for Future Action

R.K. Panda*

The major objective of the study is to examine the performance of the primary agricultural credit co-operative societies (PACSs) in the state of Orissa and suggest measures for future action. The study is based on secondary data obtained from various publications of Government of Orissa. The period of study is from 1970-71 to 1994-95, the post-green revolution scenario in the state. The study reveals that though there has been appreciable growth in the working of the PACSs in the state over the years, yet measuring on the basis of various criteria of performance, the PACSs in the state remain behind the national average. Besides, there is wide regional disparity in the performance of PACSs in the state. The PACSs in the

[†] Assistant Professor (Senior Scale) and Ex-Post-Graduate Student, respectively, Department of Agricultural and Natural Resource Economics, Indira Gandhi Agricultural University, Raipur-492 012 (M.P.).

* Reader in Economics, P.G. Department of Analytical and Applied Economics, Utkal University, Bhubaneswar-751 004 (Orissa).

agriculturally better-off regions display relatively poor performance as compared to backward regions. To improve the performance of the PACSs in the state and to ensure their future sustainability, it is suggested that these agencies should be more people-oriented than they are at present. For doing away with regional disparity and improving the performance of the PACSs in the agriculturally better-off regions, action programme under a specified time frame should be carried out to identify the problems for remedial measures.

SWOT Analysis on Agricultural Inputs Supply System in Kerala

K.P. Mani,[†] P. Chacko Jose^{**} and Vrinda Sreenivasan[†]

Private traders, co-operative societies, government departments, commercial and regional rural banks, parastatals and non-formal agencies like friends, relatives, etc., constitute the input supplying agencies for the farmers in Kerala State. There is an *a priori* feeling that the input supply system is neither scientific nor effective in meeting the requirements of the farmers at the right time and place. This hypothesis receives added attention in the present context of liberalisation where the agricultural sector is heading for a take off with increased yield, better processing and global marketing. With these in mind, a SWOT analysis on the agricultural inputs supply system in Kerala with reference to their adequacy, institutional co-ordination, types of services offered and the constraints experienced was taken up covering 50 farmers each belonging to three villages, namely, Adat (V1), Cherayi (VS) and Meenachil (V3). The responses of farmers were collected and proportional weighted scores were computed.

The analysis reveals that private traders and co-operatives performed behind other agencies with respect to the distribution of certified seeds and planting materials, which is the outcome of the government policy to reach quality seeds and planting materials through Agriculture Department (Krishi Bhavans) and parastatals. It may be inferred that even though other agencies are provided with the task of distributing seeds and planting materials the advantages enjoyed by the farmers are limited primarily due to operational constraints. Regarding credit, the analysis underlined the role played by the co-operatives and highlighted the present limited dependence on institutional credit by the farmers (18 per cent). Fertiliser as an input was primarily distributed through co-operatives, the private traders attaining only a low score (0.44). Moreover, higher doses of fertilisers than scientifically recommended were used which may be partially due to availability of subsidy and lack of awareness. The farmers expressed their reluctance towards investment in irrigation fearing the lack of infrastructure investment from the part of the government. Extension and training need for feasible agricultural operation seem conspicuous by its absence.

[†] Associate Professor, Department of Development Economics, College of Co-operative Banking and Management and Research Associate, ICAR Sponsored Research Project, respectively, Kerala Agricultural University, Vellanikkara, Thrissur-680 654 (Kerala) and ^{**} Lecturer, Department of Economics, S.H. College, Chalakkudy (Kerala).

The study generalises that none of the agencies is capable of providing the services with equal strength to the farmers, which in turn compels the farmers to depend on alternative agencies for different inputs. The built-in constraints refrain co-operatives and government departments from extending effective and timely services to the farmers. These findings emphasise the need for revamping the input distribution system, which may be effected by reducing the number of agencies supplying inputs or amalgamating the different agencies since they all tend to focus on the same target group.

Utilisation of Common Property Resources in Bhaisadani Micro Watershed in Nuapada District, Orissa (A Case Study)

H.N. Atibudhi*

The paper presents the results of a case study on Bhaisadani micro watershed project situated in Patdara plateau on the foot hill of 'Guru Dangar' hill of Nuapada district of Orissa. The project work was implemented by 'Lokdrusti', a non-governmental organisation. For this case study the data were collected from all the 65 households in the micro watershed area, grouped into four size-classes, viz., the landless, marginal, small and large. The land use pattern before and after watershed project indicated that an additional land area of 37.88 hectares of culturable waste and village pastures mostly from common property resources (CPRs) had been brought under cultivation. Out of the total land area of 282.62 hectares in the watershed, 51 per cent was under the control of forest department and village panchayat. This land is commonly owned and mostly non-arable land and comes under CPRs. The annual auction of the common land yielded very low income compared to private lands. The low productivity coupled with mismanagement and encroachment of CPRs caused rapid degradation of CPRs. As regards the utilisation of CPRs, all the households heavily depended upon the CPRs for their fuel and fodder requirement and grazing of animals. Amongst the households, the marginal and small farm households used 88 per cent of their biomass requirements from CPRs, followed by the landless with 83 per cent and large farm households with 70 per cent. The extent of dependence of households on CPRs is confirmed by the evidence that 34 per cent of gross income of households was contributed by CPRs. In this remote part of erstwhile Kalahandi district of Orissa State, where unemployment among the landless and marginal farm households is rampant, the CPRs supplement the income and provide resources for employment during the distress period. In spite of the shrinkage and degradation of the CPRs, their contribution to household economy in the watershed continues to be significant. Therefore, for their sustainable development, the misuse/degradation of these resources need to be checked and properly managed for the benefit of all the households in the watershed.

* Department of Agricultural Economics, College of Agriculture, Orissa University of Agriculture and Technology, Bhubaneswar-751 003 (Orissa).

Growth, Performance and Loaning Pattern of Regional Rural Banks in Haryana

S.K. Goyal, S.D. Chamola and Parveen Kumar[†]

The paper studies the growth, performance and loaning pattern of regional rural banks (RRBs) in Haryana. The data were collected from published sources. From Haryana State, one bank, i.e., Hisar-Sirsia Kshetriya Gramin Bank (HSKGB) was selected for the purpose of the study. It was found that at the all-India level, the number of RRBs increased ten-fold from 19 to 198 between 1976 and 1995. The deposits and advances have also increased considerably during this period. About 50 per cent of the total loan outstanding was on account of agricultural and allied activities. In the case of HSKGB about 72 per cent of the total loan outstanding was accounted by agriculture and allied activities during 1997-98. The total deposits of the Gramin Bank increased to Rs. 6,250 crores in 1997-98 from a mere Rs. 2.8 lakhs in 1984. Nearly two-thirds of the total deposits consisted of term deposits which have been disadvantageous to the bank. There has been a steady rise in advances per branch and per borrower, advances as a percentage of total working funds and number of advance accounts per office and per staff over the years. It was further found that before 1993-94 almost all the branches of the Gramin Bank at Hisar incurred losses, but since then several measures were initiated by the NABARD for strengthening the RRBs. The major measures include lending to non-target groups and lending for non-productive purpose. The other measures include customer services such as safe deposit, lockers, travellers' cheques etc. These measures have resulted in making the RRBs a viable unit. At present 36 out of 44 branches of HSKG Bank have earned profit. Still a lot needs to be done for making it a sound financial institution.

Trends in Progress of Institutional Lending to Agriculture in India

V.P. Tyagi,* Sānt Kumar[†] and Amit Kar[†]

The paper makes an attempt to review the performance of rural credit agencies in India over the period 1980-95 and suggest policy measures for meeting the credit requirements of small and marginal farmers. The progress of financing institutions like commercial banks, RRBs and co-operative banks during 1980-95 with regard to credit supply, recovery performance and advances on farm size basis, etc., has been analysed. The study reveals that

[†] Assistant Professor, Professor and Head and Research Associate, respectively, Department of Business Management, CCS Haryana Agricultural University, Hisar-125 004.

* Senior Scientist, Division of Agricultural Economics, Indian Agricultural Research Institute and [‡] Scientists, National Centre for Agricultural Economics and Policy Research, Pusa, New Delhi-110 012.

the share of co-operative banks in total farm credit increased from 52 to 58 per cent between 1991 and 1997, while that of commercial banks has gone down to 42 from 48 per cent during the same period. With regard to provision of short-term credit, the co-operatives still dominate, while for term credit the commercial banks are leading. The percentage share of commercial banks in term loan has increased from 30.73 to 70.32 during 1975-85. Both direct and indirect credit to agriculture advanced by commercial banks showed ups and downs in the amount disbursed during the period.

As on March 1996, out of 45 RRBs earning profit, 22 could be considered to have attained sustainable variability having wiped off their cumulated losses, whereas 23 RRBs which made operational profit during 1995-96 carried accumulated losses. The recovery performance of co-operatives at the level of State Co-operative Banks reached 90 per cent of demand in 1995 from 84 per cent in 1991, while at the DCCBs level recovery improved to 70 per cent of demand from 56 per cent during the same period. The recovery in long-term credit structure was also above 60 per cent of demand in 1995. The RRBs had also showed steady progress in their recovery performance during the last three years. The recovery to demand in 1996 was 56 per cent as against 51 per cent and 46 per cent during the preceding two years. The recovery performance of commercial banks was not very encouraging, as recovery to demand marginally improved from 54 per cent in 1991 to 57 per cent in 1994.

It is concluded that the performance of institutional lending is satisfactory with regard to supply of credit and recovery aspect, but it needs further improvement. The future credit needs in the rural sector have to be viewed in terms of strengthening this sector as an engine of growth of the entire economy. Working capital loans must be provided to meet the expenses on labour (including family labour) and intermediate inputs on a continuous basis to the farmers just as in the case of industries.

Groundwater Irrigation and Poor Farmers of Western U.P.: An Evaluation

S.K. Srivastava and B.V. Singh[†]

The paper evaluates the 'Free Boring Scheme' in Western Uttar Pradesh (1988-89) for small and marginal farmers and examines the changes in their cropping pattern, input use levels, cultural practices and income which have occurred as a result of above scheme. The study covered a sample of 30 beneficiaries selected from four villages in Deoband block of Saharanpur district and 20 beneficiaries from four villages in Thakurdwara block of Moradabad district of Western Uttar Pradesh. A 'before' and 'after' study was done to evaluate the performance of 'Free Boring Scheme', at constant prices (1988-89).

The 'Free Boring Scheme' in the sample blocks did not bring any significant unirrigated land under irrigation as most of the area was irrigated by various hired sources before boring. The scheme led to increase in sugarcane area in both the blocks at the cost of wheat and paddy area. After boring, fertiliser use, number of irrigations, productivity of and net returns from all the crops have increased in both the blocks. Under the 'Free Boring Scheme'

[†] Department of Agricultural Economics, G.B. Pant University of Agriculture and Technology, Pantnagar (Udham Singh Nagar)-263 145 (U.P.).

although an amount of Rs. 3,000 is given to the beneficiaries for the boring of 100' borewell and 25-35 per cent subsidy on the cost of pumpsets, the benefit-cost ratio was less than one in Deoband block, making the scheme economically non-viable. In the second selected block it was found to be economically viable.

Institutional Framework and Agricultural Development in the Eastern Region

Binoy N. Verma*

An attempt has been made in this paper to answer basic research questions related to the role of institutions constraining/stimulating the process of agricultural development in eastern India. The impact of institutions on technological change or growth process has been examined with the help of primary data collected in a field survey conducted in sample districts of the four constituent states of the eastern region. The data related to various institutions as well as level of technology prevailing in the sample villages consisting of two sets of sample households, i.e., low yield and high yield households reveal two types of scenario corresponding to two growth paths - the growth path and the stagnation path.

In the case of high yield sample households the average size of holding was found to be 15.5 acres with average three parcels only per holding. Further, about one-fourth of these households were involved in commercial tenancy, i.e., leasing in land for large scale operation. Ninety per cent of them were under canal irrigation system, located at head reaches. The rest of the 10 per cent of such households outside the canal system used private tubewell water. Further, all these households have an environment absolutely free from floods. Sixty per cent of the high yield sample households availed of institutional credit facilities purely for productive purposes. Regulated markets and active as well as efficient co-operatives (credit and marketing co-operatives) were found operating in a radius of 2 to 3 km around the villages of these high yield households. Sixty per cent of them had the benefit of regular visit system of agricultural scientists under the agricultural university system. Over 50 per cent of them practised capitalist farming system with 75 per cent of the total labour employed as hired wage labour.

The scenario of low yield households presents institutional framework and levels of technology which are quite appropriate to that of stagnation path. Stagnation path shows a rather gloomy picture projected by low yield households having local banias operating and village moneylenders-based non-institutional credit system still persisting with involvement of consumption loan. Further, 50 per cent of these households were severely affected by recurring floods, reporting availability of private tubewell water in the emerging water market in the villages of the region at exorbitant prices and some of them complaining

* University Professor and Chairman, Department of Agricultural Economics, Rajendra Agricultural University, Pusa-848 125 (Samastipur) (Bihar).

against the canal irrigation system of their area as being tail endears. A large majority of these households suffered basically from structural problems owning very little land and reported subsistence tenancy with unfavourable terms and conditions.

Adoption levels of technologies with relation to the existing institutional arrangements also varied in the two categories of sample households. Being directly affected and constrained by traditional and outmoded institutions in the case of stagnation path, the level of technological adoption was quite low in that hardly 20 to 40 per cent of the low yield households adopted modern cultivation. In contrast to this, 60 to 85 per cent of high yield households having appropriate institutional framework with growth stimulating implications witnessed adoption of modern technologies.

Role of Indo-Canadian Agricultural Extension Project in Boosting the Production of Staple Food Crops in Potential Areas of Eastern U.P.

Rajendra Singh and Pramod Kumar Singh[†]

The paper attempts to study the impact of the Indo-Canadian Agricultural Extension Project in eastern Uttar Pradesh implemented by the Indian Potash Ltd. in joint collaboration with the Canadian International Development Agency on the yields of paddy and wheat and on the incomes of the beneficiary and non-beneficiary farmers in the command area of the project. The study is based on a sample of 120 farmers belonging to marginal and small size-groups, with equal number of beneficiaries and non-beneficiaries, selected from 18 villages in two development blocks of Sultanpur district. The primary data relating to inputs, output and net income pertained to the agricultural year 1994-95.

The study reveals that the yields of staple food crops had increased significantly after the implementation of the Indo-Canadian Agricultural Extension Project in Eastern Uttar Pradesh. The input-output ratio on the beneficiary farms was much higher in the case of paddy but in the case of wheat it was slightly less, which showed that wheat was comparatively a more expensive food crop. The net output and per hectare yield from both the staple food crops were much higher on the farms of the beneficiaries. Thus it is concluded that providing subsidies or any aid under the Indo-Canadian Agricultural Extension Project is more beneficial to the beneficiaries of the command area of the project.

[†] Senior Research Officer, Agro-Economic Research Centre, University of Allahabad and Research Scholar, Department of Agricultural Economics, KAPG College, Allahabad-211 002, respectively.

Appraisal of Successful International Agency for Agricultural Development: A Study in Himachal Pradesh

M.L. Sharma, N.K. Sharma and K.R. Sharma*

In this study an attempt has been made to find out the determinants of success of United States Agency for International Development (USAID) in the development of hill agriculture in Himachal Pradesh. Development means social and cultural change plus economic growth and hence symbolises the institutionalism of growth process itself. Due to poor production base in terms of mountainous topography followed by rainfed agriculture, the cultivation of crops is practised with the help of lift irrigation.

The Himachal Pradesh Government assisted by USAID launched the 'Hill Area Land and Water Development' (HALWD) project in 1984. The study is based on Kanda-Panesh lift irrigation scheme, a model scheme installed at the height of 1600 metres above mean sea level. For assessing the impact of HALWD project, the data were collected from a sample of 50 beneficiaries and 50 non-beneficiaries scattered in five villages in the command area of the scheme.

One of the main findings of the study is that the selected lift irrigation scheme has shown excellent durability of its structure for distributing irrigation water to the farmers. Availability of irrigation facilities ultimately led the farm families to switch over to cultivation of off-season vegetables like tomato, cabbage, cauliflower, capsicum and brinjal which brought higher net returns to the beneficiaries as compared to the non-beneficiaries. The lift irrigation scheme resulted in generating more employment on the beneficiary farms as compared to the non-beneficiary farms. It can be concluded that the suitability of farm technology in hill agriculture, sustained developmental approach and environmental change remained the main determinants of success of USAID. Therefore, it is suggested that mid hill zone of Himachal Pradesh has great potential for growing vegetable crops, and hence, minor lift irrigation scheme should be based on the lines of Kanda-Panesh lift irrigation scheme.

* Agro-Economic Research Centre, Himachal Pradesh University, Shimla-171 005 (H.P.).