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SUMMARIES

INTEGRATED RURAL DEVELOPMENT: THE NEW STRATEGY EXAMINED

S. C. Jain*

The paper seeks to examine the strategy of Integrated Rural Development as approved by the outgoing Parliament of India. The elements of the new strategy, its accent on activation of 100-120 million jobs in rural India, legislation for enforcing minimum standards of production, guaranteed standards of performance by public sector, and organization of consortium to carry out resources surveys and implement development projects have been outlined. The programme aspects are already part of the literature of various area development agencies like IADP, DPAP, MFAL, SFDA, etc. The programme emphasis on reorientation of the system of higher education to meet rural needs has also been referred to. The strategy's strength lies in mobilizing the resources of the scientific community, utilizing educational manpower, and promoting concepts of production norms and performance guarantees. However, the problem areas are several and need recognition. The task of discovering a focus and new horizons for scientific community is not just one of building up a new semantics but of remoulding motivations, building up organizations and initiating a search for revelance and policy feasibility while making scientific enquiries. Without a selective approach the premature acceleration of rural oriented R & D programme attached to various national and regional institutions may prove inflationary.

The structural implications of integrating technological inputs of a high order have been inadequately recognized. Unless the developmental scientists are placed in a position from where they can intervene policy decisions, they may be driven to a peripheral role in the recommended model of programme administration where the sinews of decision-making power are still reserved for the traditional administrative and political elites. The concept of a viable management unit from the standpoint of biological imperatives is far-reaching and could run counter to the existing political climate. Premature legislative activity and enforcement could breed a swarm of corrupt and oppressive officials. It is also feared that in the absence of proper project planning and implementation employment guarantees may result in colossal wastes of public money and enthusiasm. Administrative fragmentation and laxity in service-delivery are likely to remain a problem, despite guarantees under the new approach because it has its roots in the political schism and soft political will. Linking of work-experience programme with rural reconstruction is a laudable educational measure but to expect radical transformation of rural society out of it is hoping for too much. Lastly, the new approach has not been able to counter the drift towards developmental centralism of the earlier decade. It may result in the loading of government system with unbearable performance expectations, excessive dependency attitudes and the sapping of initiative and rejuvenating vigour of the citizens.

RURAL DEVELOPMENT IN INDIA—PAST EXPERIENCE AND TASKS AHEAD

D. S. Thakur†

The village has always been a focus of attention in India and various programmes aimed at rural development have been designed and implemented since Independence. This paper reviews the past approaches adopted for rural development in India and analyses the extent to which rural people have been benefited during the past quarter century of rural development. It also points out the shortcomings of the model adopted for development in the past and further outlines the major issues involved in implementing the appropriate Integrated Rural Development (IRD) Strategy on the basis of the past experience. The paper indicates that the traditional approach to rural development consisting mainly of the reformist measures in the past has not yielded the desired results. The benefits of this strategy have been largely appropriated by the vested interest and the ruling elites in the rural areas to their advantage by manipulating and maintaining an iniquitous society. Therefore the paper makes a case that the present approach of the IRD Strategy needs to be explicitly identified with improving the overall quality of lives of the poor masses in the rural areas which would require a radical change in property relations, socio-political power structure, existing values in the rural areas and the very objectives and philosophy of development. This is followed by pointing out the major issues that will have to be resolved to make the present strategy of rural development successful in delivering the goods to the rural poor.

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INTEGRATED RURAL DEVELOPMENT

V. Venkata Ramana*

For a predominantly agricultural economy like ours Integrated Rural Development is the *sine qua non* for a balanced and sustained economic growth. This entails the transformation of the agricultural sector through a reoriented capital-cum-technology strategy—not only for augmenting agricultural production but also for a rural-biased type of industrialisation—the new technology being applied in areas and on people and farms which were hitherto neglected. Sufficient care should be taken to avoid a trade-off between employment and mechanization, population growth and per capita incomes. There is a need to raise the marginal productivity of labour from negative to positive, and promote rural savings potential thereby. Earlier strategies have helped only in increasing rural disparities and rural tensions. But all blame should not be thrown on the beneficiaries. There is a need for small farmers and marginal farmers to organize themselves into co-operative consolidation and joint farming societies so as to eliminate diseconomies and employ modern means and methods of production. There is absolute need for increasing institutional credit facilities for which the co-operative credit societies should be fully equipped. Till 1960s the emphasis was on co-operative farming and co-operative village management. But since 1970s there is a definite shift in policy in the form of land redistribution programmes and individual farming. There can be no tangible and durable progress in agriculture unless co-operative joint farming is made compulsory in the case of all small and uneconomic holdings. Legislative measures are also suggested for efficient land management and empowering government to take over badly managed farms. There should be a common central authority for land utilization and management. The present concept of output maximizing techniques should yield place to surplus maximizing techniques. Investments as are inflation-dampening in nature must receive greater weightage over inflation-augmenting types in accordance with a balanced allocation ratio. The needed savings for the development of agricultural sector should be mobilized within the sector itself. As it is, the burden of taxation on landlord classes is lighter than similarly placed ones in the urban sector. It is necessary to implement the Raj Committee's and Planning Commission's recommendations to make the agricultural sector contribute towards its own development in years to come.

INTEGRATED RURAL DEVELOPMENT—QUEST FOR A METHOD AND CONCEPT

Harpal Singh†

The Community Development was in its essence an integrated rural development programme. The question which has to be posed in the context of the Integrated Rural Development Programme (IRDP) is as to why the Community Development has failed and why should the proposed IRDP succeed? One of the essential causes of the failure of Community Development has been the conflicts and contradictions between the inter-and intra-target groups forming part of the rural community. The bureaucratization, central planning and inflexible concepts and methods of Community Development failed to bring out motivation and mass mobilization for a total and comprehensive rural development. It is necessary that some of these pitfalls are avoided in the IRDP. It is also high time to define what we mean by development. It is not a mere technological transformation of agriculture or introduction of high-yielding varieties which should constitute integrated development. Essentially, the 'development' in the proposed model of IRDP should be defined as the release of the creative initiative of the vast mass of rural poor. In order that this could be achieved, the proposed model of IRDP should imbibe certain essential elements in its strategy and approach. This could be flexibility, comprehensiveness, geographical and sectoral integration, widest possible discussion and debates by the groups and the sub-groups and the complete initiation of a participatory process in development through mass mobilization and participation. The various groups and sub-groups constituting the village community should be given the pride and the dignity that they deserve. As these aspects have not been sufficiently emphasized, much less acted upon in the various approaches to rural development so far, it is necessary that we must build into the proposed model of rural development these elements as its fundamental features.

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THE CENTRAL PROBLEM OF RURAL DEVELOPMENT IN INDIA AND ITS SOLUTION

Kalyan Sankar Mandal†

Our earlier attempts of rural development have (*a*) created a problem of inter-regional and intra-regional inequalities of income and, (*b*) worsened the problem of unemployment and poverty. For correcting this undesirable trend some special programmes for the development of the weaker sections of the population and of backward areas had been introduced. It has been argued that this strategy of rural development aiming at greater equality is the only way for developing rural India. However, it is widely accepted that there is a wide gap between policies and actualities regarding this egalitarian orientation of our rural development strategy. This paper points out that there is a contradiction between the 'structure' of our rural society and 'functions' assigned to the state in accordance with this egalitarian orientation of our rural development programmes. It is argued that this contradiction is the central cause of the existing gap between policies and actualities regarding these rural development programmes. A resalvation of this contradiction by changing the structure of the society through an organized effort has been suggested as a pre-requisite for the successful implementation of these rural development programmes aiming at greater equality.

THE STRATEGY OF INTEGRATED RURAL DEVELOPMENT IN INDIA

Rajendra Kumar*

This paper examines how far has rural development in India been integrated within itself, and with the rest of the economy. It also seeks to examine in the context of the development of the Indian economy in the last 20 years whether its rural sector has developed alongside and further, in the process of development of the rural sector, whether all its parts have also developed. It probes to find out whether the lack of integration in whatever growth that took place in the rural sector is the cause of slow overall development. In order to lend theoretical sanctity to these discussions, it follows the dualistic model of economic development and structural change as enunciated by Kelley, Williamson and Cheetham.† In this model an integrated treatment of the sources and determinants of economic growth has been presented. It describes the salient features of an under-developed low income economy, distinguishing it from an industrialised high income economy. The theoretical discussion brings out two major criteria of integrated economic development. (*a*) Expansion of capitalist agriculture in the rural sector of the economy, with greater opportunities of labour employment and slower migration of labour to the urban areas. This results in increased marketable surplus of all consumer goods. (*b*) Increase in the level of rural wages (real), while the rural-urban wage differential is reduced but not vanished; for, given the real costs of migration, rural labour will not move easily to the urban areas merely for higher money wages.

In the light of the theory, an attempt is made in the paper to review the progress of rural development in India's Five-Year Plans, especially to identify the factors in agricultural development that have retarded the overall rate of growth in the Indian economy and to examine whether the policy of integrated rural development as enunciated in 1976 would put the Indian economy on to the correct path of development. The main conclusions of the study are as follows: The process of economic growth as visualised in theory is based on integrated development of the rural and urban sectors in an interdependent framework so that the progress in one contributes to the progress in the other, and the lack of it in one arrests it in the other. The absence of all-round development in the rural sector under the Five-Year Plans so far has retarded the overall growth of the Indian economy. This is indicated broadly by the growing number of the poor, and the 'unemployeds' especially in the rural sector. The All-India Debt and Investment Survey, 1971-72 conducted by the Reserve Bank of India has referred to the dire penury of a sizeable segment of the rural population. Considering the rural households with asset ownership below Rs. 2,500 as "poor," it is observed that more than one-third of the total rural households were poor. Taking the average of 5.4 persons per household, this would place the total number of rural poor above 14 crores. Another fact that emerges from the survey is that the incidence of poverty is maximum amongst the agricultural labour households. The National Commission on Agriculture has rightly concluded that historical forces have contributed towards the 'growing proletarisation' of the rural sector in India and that in spite of over two decades of planning, the level of living of the bulk of agricultural labourers has undergone little improvement. It is the poverty (under-employment) as well as unemployment in the rural areas which is more oppressive than in the urban areas firstly because the former are usually not connected with the overall economic stream; and secondly, if they are,

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† Allen C. Kelley, Jeffrey G. Williamson, Russell J. Cheetham: Dualistic Economic Development: Theory and History, Chicago University Press, Chicago, U.S.A., 1972.

their migration to towns only swells the number of urban poor. The specific measures recommended for integrated rural development are diversification of economic activity through small agro-based industries, workshops for maintenance of implements and machinery, house-building, road construction, and labour-intensive technology. In other words, the development policies must focus attention on directly raising the productivity of the rural poor, either by increasing their access to productive assets and generation of employment opportunities *in rural areas*, that is through the extension of the capitalist segment of the rural sector. The role of industry in this task is no less, for rural development would provide external economies by way of assured source of input supplies, assured market for output, and above all, environmental balance.

INTEGRATED RURAL AREA DEVELOPMENT AND SYSTEMS APPROACH

V. K. Sharma and Jagdish Kumar‡

"Rural area development" is a phenomenon which cannot be explained by the studies concerned with only a few variables or aspects related to development. Rather, it is a system where several variables or components jointly with their interaction, determine the final outcome in terms of the extent of development. We, therefore, require to identify these components, establish inter-relationships among them, formulate an appropriate model of development process, simulate the model under different conditions by changing the values of major controlling components and test it in real world situation for its validity. An attempt on the above lines was made under the "Rural Area Planning Research and Action Project" undertaken by G. B. Pant University of Agriculture and Technology, Pantnagar during 1975-76. A sub-command of Dhora reservoir falling in Baheri block of district Bareilly in Uttar Pradesh was selected as the area of operation. The variables which were identified as major components of the system of rural area development were willingness among individuals to improve, availability of inputs, subsidiary occupations, supply of requirements of subsidiary occupations, market facilities, training, banks, seed and fertilizer stores, C D block, population, research institutes, *Panchayats*, community works and opportunities of employment. Besides these internal components, three factors influencing the system from outside were also identified. These were Government policy and job opportunities and development of market outside the selected area. The inter-relationships among the above components were established and some guidelines were found to formulate an appropriate strategy for the development of the selected rural area. The methodology included a survey of the area with respect to soils, livestock and socio-economic conditions, and an operational programme to study and test the alternatives. The study suggested that the following points should be considered while formulating a workable strategy for rural area development.

(1) The qualifications, financial status and the area of operation of the village level workers should be reconsidered so that they are able to make regular individual contact with all the farmers and are able to provide latest information in the field of farming. (2) The team of ADOs headed by BDO and higher officials at district, region, State and all-India level must make efforts to solve the real problems faced by rural people rather than suppress them imposing undesirable orders and policies. (3) Extra duties should not be assigned to the workers particularly to the field workers at the cost of their main duties. (4) The evaluation of the work of blocks and other rural institutions should be done through a survey of sample individuals and not through the achievements reported by officials. (5) In order to simplify the procedure of getting loan, various institutions concerned with credit in a locality must exchange the lists of farmers who have dues outstanding against them so that no institution requires farmers to collect "No dues" certificates from several places. (6) The commercial banks should not be forced to give loans to the small farmers unless they are convinced to do so by deciding some appropriate criterion for lending money to them. Otherwise, it remains only paper publicity. (7) Since in the study area, irrigation is uncertain and inadequate, there is not much sense to provide loan on the basis of costs involved in package of practices of various crops. More emphasis should be given to provide loan for subsidiary occupations like purchase of buffaloes, starting poultry, etc. But while doing so, the requirements for these occupations in terms of feed, medical facilities, etc., must be arranged simultaneously. (8) Since the availability of irrigation water in the reservoir is not as uncertain in *rabi* as in *kharif*, proper scheduling of irrigation for *rabi* crops must be determined. (9) Regarding inputs supply, the actual demand and money should be collected from the farmers and the inputs may be arranged from a proper source and distributed to the farmers. (10) Appropriate number of depots should be opened in the locality for collecting the marketable output and distributing inputs. These depots may be linked to main markets or processing plants. (11) Individual farm planning should be recognized as the core of the development strategy, but these plans must be prepared by trained personnel. These farm planners should also not be expected to prepare a number of plans beyond their capacity.

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COMMODITY MONEY PRODUCTION FOR INTEGRATED RURAL DEVELOPMENT: A REGIONAL CASE OF NORTH-WEST BIHAR

Harihar Bhakta*

In the process of planning during the last two decades the overlooking of basic constraint has retarded the rapid and integrated rural development. This constraint has been identified in the author's study of "Agrarian Relations in North-West Bihar: A Regional Study of Three Districts" on the basis of primary data collected from all households of nine villages selected at random during July, 1974 and June, 1975. In the surveyed area middle peasants constituted the highest percentages of households followed by poor peasants and landless labourers. Landlords and cultivators owned highest percentage of land and major portion of modern machines which are insufficient. Land leases and land transactions are dominant. Family labour is the main mode of utilization of labour power. (See Table I). The system of production is for use value in which production and consumption decisions, on the one hand, and consumption and investment decisions, on the other, are interdependent. In the former case, subsistence requirements modify cropping pattern, prevent specialisation, retard utilization of high-yielding variety seeds and affect the amount and composition of the marketable surplus. In the latter case, consumption affects cash flows and determines investment.

TABLE I—MAIN ECONOMIC FEATURES IN NORTH-WEST BIHAR

Features / Classes	Land-lords and culti-vators	Middle pea-sants	Poor pea-sants and landless labourers	Others	Total
1. Per cent of households	12.76	37.41	30.50	19.33	100.00
2. Per cent of ownership of land	55.50	36.07	6.85	1.58	100.00
3. Average size of operated holding (acres)	9.78	2.73	0.85	—	3.56
4. Land area per tractor (acres)	357.56	—	—	—	650.00
5. Land area per pumpset (acres)	100.05	293.60	—	—	150.00
6. Kg./per acre					
(*i*) Utilization of fertilizer	29.68	26.11	13.94	—	21.59
(*ii*) Output					
(*a*) Wheat	319.24	348.67	285.99	—	328.06
(*b*) Paddy	301.89	303.40	274.58	—	293.98
7. Per cent of total produce marketed					
(*a*) Wheat	21.46	10.75	—	—	8.62
(*b*) Paddy	19.40	9.79	—	—	9.52
8. Per cent of households who sell their produce in regulated markets	5.30	2.12	—	—	1.18
9. Per cent of households having members engaged in non-agricultural sector	95.80	86.89	25.45	100.00	61.35
10. Per cent of non-agricultural members who live with their dependents outside the village	15.00	3.00	—	15.00	13.59
11. Per cent of households involved in land transactions					
(*a*) Sale/mortgage out	11.00	27.00	65.00	—	45.00
(*b*) Purchase/mortgage in	74.00	46.00	10.00	—	53.00
12. Per cent of households involved in land lease					
(*a*) Lessor	55.23	13.21	—	—	35.51
(*b*) Lessee	—	11.25	69.35	—	48.67
13. Forms of utilization of labour (per cent of total labour used)					
(*i*) Attached bonded (permanent)	12.87	—	—	—	4.87
(*ii*) Attached casual	29.13	10.00	—	—	6.83
(*iii*) Bonded casual	15.00	1.11	—	—	4.05
(*iv*) Farm servant	5.00	1.00	—	—	1.44
(*v*) Free casual	38.00	19.45	—	—	18.55
(*vi*) Family labour	—	68.44	100.00	—	64.26
Total	100.00	100.00	100.00		100.00

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Most of the operated size holdings are too small to produce grains for the market. Land transactions and land leases are done to meet the needs of use-oriented economy. Family labour, attached and bonded hired labour—major forms of utilization of labour power of land—are also suited to use-oriented system. Dependent members of non-agricultural workers also utilize the yield. And cash requirements of households and even investment needs are met out of their savings. So production fails to get money-and market-oriented. Further, cropping pattern including mixed cropping has been adopted to suit the food intake requirements of households. Sub-division and fragmentation of holdings also suit their consumption habits. Exchange in kind, settlement of loans in kind and also exchange of human labour, bullock labour, etc., have retarded the full monetization of the agrarian economy. Thus commodity money production is lacking. Trade is there but it nourishes the traders rather than producers. All this has extremely important consequences on development. There is no strong pressure for continual improvements in the production technology. Limited development satisfies the needs of the system. This is supported by one concrete example. One household of village Korea installed a power operated tubewell in 1968 with great enthusiasm. In 1970 it went out of order. Since then he never tried to bring it in order, because the major portion of the enhanced yield went to fill up the bowels of the members of the family. Money income is too meagre to replace or to enhance the capital. On the other hand, moderate investment is sufficient to produce the required grains for food intake. So instead he installed cavity boring with oil operated pumpset in 1973. Indirectly too, the modern techniques, however insufficient, have entered into the production organization of the area only after the severe drought and food famine of 1965-67 during which people faced immense difficulties in getting grains for food intake and this gave them impetus to utilize modern techniques to increase yield. And lack of market orientation might have also retarded the integration of various processes of agricultural production like primary production, storage and marketing, and has been responsible for poor development of allied sectors of agrarian economy like horticulture, dairy, poultry, piggery, goat keeping, etc. Therefore, for rapid and integrated rural development our strategies must aim at full monetization of agrarian economy and strengthening of the commodity money production.

INTEGRATED RURAL DEVELOPMENT WITH REFERENCE TO COMMAND AREA PLANNING

Shantilal Sarupria*

The paper argues that Command Area Development (CAD) programme in India is still largely rooted in the *project approach*, a strategy that has, in the past, failed to achieve the goals of rural development. The situation, therefore, calls for a viable regional plan-frame for the irrigation command areas. The paper is an attempt to evolve a policy design for such regional development planning. Command Area Development may be considered a 'special case' of Integrated Area Development Planning because of the *distinct* features of the command regions. Integrated area development planning for CAD involves three important elements: (*i*) spatial design for development activities aimed at maximizing/optimizing resource development mainly through 'policy investment' by the government; (*ii*) planning inter-sectoral and inter-area linkages both within and outside the command region, wherein non-policy functions and market considerations would play a vital role; and (*iii*) delineating development sequence for the future, particularly since irrigation water brings in swift dynamic changes. This would require an efficient organizational and monitoring system. It is also argued out that such a plan-frame cannot be fully effective without its proper integration with regional planning at the State or/and national level. However, in the first instance, it may be easier to co-ordinate CAD planning with other variants of area planning such as drought-prone area schemes, rural industrialisation scheme, etc.

INTER-REGIONAL RESOURCE IMBALANCES AND THEIR REALLOCATION IN THE PUNJAB AGRICULTURE

Joginder Singh, K. C. Dhawan and Nirmal Singh†

The problem of resource optimization between different regions is very important for increasing production in the farm sector. Therefore, it is necessary to work out the marginal productivities of resources in different regions so that the possible changes in this regard may be brought about.

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For this purpose, five zones of the Punjab State (*i.e.*, Anandpur Sahib, Amritsar, Dasuya, Mukatsar and Mansa) based on the cropping pattern were formulated. Regression functions (with regressand as gross farm income and regressors as farm size, family labour, hired labour, variable expenses and fixed cost) were fitted to work out the marginal productivities of different factor inputs. The result showed that the productivity of an acre of land was as high as 2023.72 in Amritsar region because of high cropping intensity and suitability of land to the most paying enterprises like wheat and paddy. In all the zones except for Mukatsar, the MVP of land was higher than the per acre rent, suggesting that renting in of land was a profitable proposition in these zones. The MVP of family labour was positive and high in all the zones. However, the MVP of hired labour in all the zones was lower than the wage rate which indicated that the hired labour was employed in excess of the requirements. The MVP of variable expenses was very high in all the regions which showed that there was need for laying more emphasis on extension of short-term credit. The MVP of fixed capital was very low in most of the cases probably due to the lumpy nature of the fixed capital and comparatively small-scale nature of business. Further, there was much variation in the MVPs of these factors between different regions under study. Therefore, steps need to be taken to rectify these imbalances by motivating their inter-regional shifts.

INTEGRATED RURAL DEVELOPMENT AND REALLOCATION OF RESOURCES

K. Sain and B. Bagchi*

Elasticities of production as well as marginal productivities of principal inputs used in farms are examined on an intra-farm, inter-farm and inter-regional basis with a view to finding out the impact of proper allocation of limited resources for accelerated progress and implementation of an integrated rural development programme comprising production, storage, manufacturing, credit, transport, marketing and other different aspects of rural development. Data contained in Farm Management Reports, other published literature on the subject as well as those collected through primary investigation are analysed for purposes of generalisation. It is observed that a significant scope exists for accelerating the progress of an integrated rural development programme through reallocation of resources after due introspection and experiment.

STRATEGIES FOR INTEGRATED DAIRY DEVELOPMENT FOR UPLIFT OF RURAL POOR

R. N. Pandey and T. S. Bhogal†

The new approach to integrated rural development is based on the availability and development of human, animal, land and water resources in the area. The land is the most limiting factor of production for the majorty of farmers in the country. Also, on the majority of small and marginal farms there is surplus labour force. The livestock enterprises fit in very well to solve the twin problems of less land and more manpower on the typical farms in the country. In this paper at attempt is made to highlight the major achievements of the Integrated Dairy Development project, Aligarh (Uttar Pradesh), which is a joint venture of the Pantnagar University, the Glaxo Laboratories Ltd., Aligarh and the Aligarh and the Dugdh Utpadak Sahakari Sangh Ltd., Aligarh. The main objective for the initiation of project was to step up the milk production in the selected villages in the milkshed area of the Glaxo Factory, Aligarh. To estimate the impact of the project activities on production and breeding behaviour of the milch animals, three comparable villages each from project and non-project areas were selected. From the list of farmers having at least one milch animal, 75 farmers each from the project and non-project villages were selected and interviewed to record the detailed farm business data for 1974-75. To estimate the potentialities of increasing farm income and employment on individual representative farms as well as the aggregate in the entire project area under the Narona Centre, the farm business data collected for 124 farmers by cost accounting method for a research project of Pantnagar University entitled "Comparative Economics of Milk Production in Dairy Development Project Area in Aligarh District" for the years 1973-74 and 1974-75 were used. Linear programming models of profit maximization type were used to derive the optimum crop and milk production plans.

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It is evident from the results of the study that the average lactation yield of the buffaloes in the project villages is significantly higher than that in the non-project villages. The average length of lactation period of buffaloes was longer in the project villages while the length of inter-calving period was the same in both the areas. The cost of milk production from buffaloes in the project villages was lower by about 10 per cent and the average milk production per farm per day in the project villages was highest by 47 per cent. Further, the mortality rate of calves and other animals has substantially reduced in the project villages. These achievements are due to better feeding, breeding and disease control facilities in the project villages. From the optimum production plans for the representative farms of 0.6 hectare, it is found that the farm income and employment would decline by 24 and 30 per cent respectively from their actual level in 1974-75 if the milch animals are not maintained on the farms. And on 2-hectare farms farm income and employment would decline by 4 per cent and 20 per cent respectively, if the milch animals are not maintained. From the optimum production plans with improved technology along with three high yielder buffaloes, the farm income and employment would increase by 168 and 79 per cent respectively on 0.6-hectare farms. On 2-hectare farms the farm income would increase by 126 per cent and employment would increase by 107 per cent from the optimum production plan with improved production technology and six high yielder buffaloes. From the aggregate optimum production plan for the Narona Centre as a whole, it is revealed that the aggregate farm income and employment of human labour could easily be doubled over time with the adoption of improved crop technology and high yielder milch animals. Thus, dairying shows a great scope for increasing the income and employment in the rural areas of the country. However, an integrated effort by different related agencies to educate the farmers about the new production processes of the crop and livestock enterprises and satisfactory arrangements for the supply of the crucial production inputs and for the marketing of the farmers' output at reasonable price becomes very essential.

INTEGRATED RURAL DEVELOPMENT: THE CASE OF MARGINAL FARMERS OF GOA

A. R. Padoshi*

Economic development of the rural areas appears to be the logical solution to the problem of poverty in India. The term "Integrated Rural Development" defies precise definition. It seeks to achieve a co-ordinated development of the rural economy and scientific and optimum use of existing resources with a view to improving the standard of living of the economically weaker sections of the rural community. Agricultural development is the main component of any IRD strategy. This paper makes an attempt to understand the problem of development of marginal farmers of Goa. In Goa, marginal farms and marginal farmers numerically dominate the agricultural economy. Most of the marginal farmers are tenants. The Marginal Farmers and Agricultural Labourers' Development Agency in Goa has been doing quite useful work to develop the marginal farmers in the region. But despite its efforts, the problem of marginal farmers is far from being completely solved. More efforts appear essential. In order to develop the marginal farmers of Goa, two suggestions are made, *viz.*, (*i*) urgent attention needs to be paid to the problem of land reforms. Cadastral survey and records of rights should be completed. Redistribution of land should be taken up without delay. (*ii*) Efforts may be made to develop an efficient marketing infrastructure through co-operatives. Possibility of water transport may be explored.

INDO-GERMAN AGRICULTURAL PROJECT MANDI—AN INTEGRATED APPROACH TO RURAL DEVELOPMENT IN HIMACHAL PRADESH

Arun Kansal and D. S. Dogra†

This paper reviews the progress of integrated rural development initiated under the Indo-German Agricultural Project (IGAP) in Mandi district in Himachal Pradesh in 1962 and suggests measures to overcome the bottlenecks encountered in the implementation of the project. Though the IGAP has completed more than 12 years of its operation in Mandi district, the production of principal crops has not increased substantially when compared with the non-project area. Since the gains from the increased use of inputs ought to result in better yield per hectare of land, still it recorded lower yield because of following reasons: (*a*) non-reliability of data supplied by the IGAP, (*b*) diversion of resources of IGAP to neighbouring districts/villages outside the Mandi district or to non-IGAP

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purposes, (*c*) existence of malpractices in the distribution of improved inputs to farmers, *i.e.*, big farmers getting more inputs due to their personal influence to the detriment of smaller farmers, (*d*) lack of full backing by a suitable extension programme in the application of these inputs and (*e*) failure to develop a suitable irrigation system in Mandi district which might be an inhibiting factor in optimum realisation. Another important contribution of the IGAP has been the role which it has played in improving the cattle wealth of the district Mandi. Breeding programmes which were initiated by the project authorities have yielded encouraging results. Not only it has increased milk production, but also the income of the farmers. Similarly, the development of poultry has not been less spectacular than dairying. However, concerted efforts should be made to manufacture milk products to give more returns to the rural masses. Although some work has been done under horticulture, yet it could not be regarded as a remarkable one. The horticultural loans provided by the authorities are not adequate and the marketing and processing field needs more attention at the hands of policy-makers/administrators. The discussion revealed certain missing links between the various processes of integrated rural development. In this context the following suggestions may be considered: (*a*) Development of mixed farming should be encouraged; the emphasis should be on the balanced development of animal husbandry, horticulture and crop production. (*b*) Extension workers should gear up their activities. They should try to connect various missing links of integrated rural development. (*c*) There are ample opportunities for starting lift irrigation schemes, particularly in the valley area. Considerable effects are necessary to intensify this aspect of the programme through digging wells and tubewells, land levelling, proper bunding, improvements in drainage system, etc. (*d*) There should be some sort of integration between the agricultural universities, extension workers and cultivators to introduce new technology/innovation to enable the rural economy to the "take-off" stage.

UTILIZATION OF WATER RESOURCES AND RURAL DEVELOPMENT IN AMRAVATI DISTRICT

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The paper makes an attempt to find out the impact of utilization of water resources, the factors restricting the expansion of irrigation and to suggest measures for better utilization of water resources in the integrated scheme of rural development. For this purpose two villages—Manjarkhed and Basalpur—were chosen from Chandur Rly. tahsil in Amravati district of Maharashtra, wherein canal irrigation exists. Borgaon and Wadgaon from Amravati tahsil where well irrigation is developed, were chosen. For the purpose of the study about 10 per cent of such farm households, mainly those using irrigation, were covered in the sample. The period of study is 1973-74 to 1976-77. It is observed that the area under well irrigation has increased during the last four years by 15.4, 25 and 42 per cent in Wadgaon, Manjarkhed and Borgaon, respectively. There was a decrease in the area under canal irrigation, because of inadequate storage of water in Malkhed irrigation tank. It is disheartening to note that canal irrigation scheme, which is introduced to protect crops against the vagaries of nature, is itself being influenced by the climatic conditions. Only 10 .8 per cent of the total area under cultivation in the four villages and 21.3 per cent of the land holdings of the sample cultivators were under irrigation. Obviously, this figure is higher in comparison with the meagre area under irrigation in Amravati district as a whole, namely, 2 per cent. Along with the use of irrigation it is found that there is an increased use of modern technology. However, the use of modern technology was adopted partially by about 50 per cent of the sample cultivators. Hence, there is a greater scope for the use of modern technology in all the four sample villages. It was obvious from the analysis that there was a clear trend of using high-yielding varieties of jowar, cotton and wheat in the place of local varieties of these crops. In the two villages with canal irrigation, *rabi* crop of wheat was introduced since the *rabi* season of 1973-74, prior to which this pattern of cropping was totally absent. With the impact of better irrigation, the average yield of jowar (C.H.S.), cotton (1007 and H4), wheat (Kalyan) and onions increased by about 50 per cent per acre during the period 1973-74 to 1976-77. On the basis of changes in the production and cost of cultivation, it was observed that the income of farmers in all these four selected villages increased moderately—as a result of higher yields for most of the crops in the *kharif* and *rabi* season. The extent of well irrigation is restricted by a number of factors, *viz.*, rocky sub-soil topography, knowledge regarding the availability of credit, extension of electric lines right upto the farm areas. Similarly, inadequate storage of water in irrigation tanks hinders the extensive use of canal irrigation.

Suggestions for better utilization of irrigation water in the scheme of integrated rural development are follows: (1) A programme of well-digging should be undertaken in suitable areas. 'One farm-One well' campaign should be the basis for the future irrigational development. (2) A policy of constructing small earthen dams may be implemented wherever possible. (3) Information regarding sub-soil water potential and the availability of loans from Land Development Banks

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and such other agencies should be disseminated specially among the small and marginal farmers. (4) A network of rural electrification is an essential pre-condition for well irrigation. (5) The prices of electric pumps and water pipes should be maintained at the lowest possible level. (6) The programme of soil conservation should be extensively undertaken along with the expansion of irrigation. The success of a programme of irrigation depends on governmental and non-governmental agencies like Land Development Bank, co-operative credit societies, *Zilla Parishad*, Block Development Officers, Small Farmers Development Agency (SFDA) which can formulate an integrated scheme of irrigation as a part of the integrated rural development programme. The SFDA, Amravati has undertaken a scheme of working out the water potentials and imparting this knowledge to the farmers of Amravati district.

INSTITUTIONAL APPROACH TO INTEGRATED RURAL DEVELOPMENT— A CASE STUDY OF THE MULKANOOR CO-OPERATIVE RURAL BANK

K. S. Suryanarayana and A. S. Reddy*

In evolving a suitable strategy for integrated rural development, the growth process or change at the grass-root level and the role of institutions involved in it have to be understood properly. The Mulkanoor Co-operative Rural Bank was purposively selected for study to throw light upon the process of growth and its interaction with various variables, the motivating forces and the type of *development effort* initiated at the micro level in the course of working of the Bank for the last 20 years. The Bank is located in a backward area in the Telangana region of Andhra Pradesh. It covered 14 villages with a population of 34,000, with an operational area of 44,606 acres. Nearly 90 per cent of the cultivator families have enrolled in the bank. The progress of the Bank since the day of its registration in 1956 can be analysed into four phases—each with a duration of five years. In the first phase the activities were limited to the provision of supervised credit and supply of physical inputs from its own depots. In the second phase, besides helping the development of irrigation through the supply of pumpsets and oil engines, it launched the programme of popularising HYV seeds cultivation, developing storage and marketing. The third phase witnessed the starting of a rice mill, oil mill and a seed processing unit. In the fourth phase, with institutional support, the Bank has diversified its activities to cover dairy, poultry and sheep rearing with market facilities. The supervised credit system ensured productive use of credit. Linking of marketing with credit facilitated the recovery of loans, which has been 95 per cent on average. The owned funds constituted 50 per cent. Diversification of its activities has also strengthened its financial viability. The main factors accounting for its success are: (1) leadership, (2) better management and (3) its abilty to mobilize resources from various agencies like NCDC, MARKFED, State Government, etc. The motivating forces have been the development of irrigation and increase in agricultural productivity through intensive cultivation. The tabular analysis showed significant association between irrigation and cropping intensity, on the one hand, and well co-ordinated supply of all modern inputs and growth in agricultural production, on the other. The extension of inputs is also associated with changes in the attitudes and skills of the farmers and with the institution supplying them. Out of 3,000 wells, 2,513 were effectively used by the pumpsets supplied by the bank. The *rabi* cultivated area increased from 2,757 acres in 1960-61 to 14,052 acres in 1975-76. The per acre consumption of fertilizer went up from 20 to 50 kg. in the same period. The transformation to HYV cultivation was almost complete with 90 per cent coverage. Productivity of different crops also increased. The money lending system has almost faded away in the region. The recourse to various agencies for purpose of credit has been avoided to a greater extent. The employment potential has also been considerably high.

The implications of the study are that the growth process depends on the strength of the agricultural infrastructure of distribution of inputs, marketing, storage, processing, provision of agricultural and non-agricultural employment opportunities in the rural areas. It also involves the decentralised location of new economic activities at an appropriate place and integration of them. The role of the institution is also vital. The village may not be an effective unit for integration. The integration process at the block level that was sought to be achieved through specialists' staffing pattern is already weak and the process of agricultural development could not be handled properly by the Community Development Programmes. In the light of the experience of the Mulkanoor Co-operative Rural Bank, a single agency approach sounds good for the integrated rural development at the "cluster of villages level." As the development of agriculture depends on self-generating cycles of growth in a small region, the motivating forces have to be taken care of there and the process of change should be ensured through a better micro level plan and implementation at the field level of cluster of villages. This may call for restructuring and revitalising the existing institu-

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tions. Agricultural work has to be taken away from the *Panchayati Raj* institutions and assigned to the co-operatives. The co-operatives have to assume increasing importance in agricultural development; for effective servicing of the institutional scheme of credit, they should evolve a 'development concept.' But the small co-operatives have to be amalgamated into viable and efficient units on the model of this Bank. In the absence of supply institutions in the rural areas and weak entrepreneurial base, the co-operatives can assume a role of the type that is witnessed in the case of Mulkanoor Co-operative Rural Bank.

ROLE OF SMALL FARMERS IN INTEGRATED RURAL DEVELOPMENT—APPROACH AND STRATEGY

K. S. Suryanarayana and T. Goverdhan Reddy†

The concept of integrated rural development has since been reviewed with the introduction of the development programmes like Community Development, IADP, and IAAP, etc. In IADP, package approach involving concentrated effort was adopted in limited areas and diffusion of new knowledge and research findings relating to agricultural technology among farmers. Recent studies reveal that small farmers continue to form the bulk of rural population with little access to technical and essential inputs including credit for effectively reaping the economic benefits of package of improved practices. Our studies in IADP, West Godavari (Adaptive Research) showed positive correlation with farm size and the benefits of green revolution were not accruable to the small farmer. Also type studies in the College Extension Block showed that the farmers were not adopting all the components of the package because of differential costs and returns of the individual practices comprising the package. Studies on evaluation of SFDA in Nalgonda district of Andhra Pradesh during 1977 showed that its programmes have improved the economic conditions of all participants as compared to the non-participants in respect of cropped area, farm asset structure, intensity of cropping, employment and consequently higher income. Future agricultural policy requires overall rural reconstruction involving farm and post-harvest technology, dovetailing non-farm enterprises, rural infrastructural development with emphasis on infrastructure incidental to on-farm development particularly in new irrigation areas and tribal areas for integrated development of agriculture. On the sociological and moral plane as well, there is need to break away from traditional, cultural and religious impediments to socio-economic development of the rural communities. The experience of implementation of development programmes relating to the rural sector has to be kept in view in reformulating our strategy for the techno-economic and socio-economic change through planned development with pre-assigned priorities consistent with the resource availabilities including farm credit within the rural sectors and programmes that best fit the rural communities' capacities and abilities with their full involvement in the very development process. In short, management approach to integrated rural development has much to commend.

A STUDY ON RESTRUCTURING OF LABOUR MARKET AS A STRATEGY FOR INTEGRATED RURAL DEVELOPMENT

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The objectives of the study were to examine the pattern of employment and wage income as well as their seasonal distribution in the market under the prevailing conditions and to suggest a strategy for the restructuring of the labour market as an approach for integrated development so that optimal use of existing working force can be made. The study was conducted in Faridpur block of Bareilly district in Uttar Pradesh, taking it to be a representative block. Multi-staged random sampling technique was adopted for the selection of VLW circles, villages and farmers. For the purpose of this study, two VLW circles, one each in progressive and non-progressive area and out of this, five villages—three from the progressive and two from the non-progressive—and 50 farmers—30 from the progressive and 20 from the non-progressive villages in proportion to their number in each village—were selected. The indicators used for the selection of progressive area were that a minimum of 50 per cent and 40 per cent of

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the cultivated area should be covered under irrigation and high-yielding varieties, respectively, followed by sufficient number of loan beneficiaries. This study relates to the year 1974-75 and 1975-76. The results revealed that the total employment for the male, female and child workers in the progressive and non-progressive areas was 225.34, 71.69 and 41.38 and 181.50, 24.50 and 32.50 days/year, respectively. The employment of all workers was higher in the progressive area. The employment of all workers in all operations was also higher in the progressive area with the exception of child workers in land preparation, irrigation and harvesting as the children were found to be going to the school. It is further revealed that the total agricultural and non-agricultural wage income for the male, female and child workers in a year in the progressive and non-progressive area was Rs. 1,206.45, Rs. 369.73 and Rs. 137.30 and Rs. 887.15, Rs. 124.92 and Rs. 89.64, respectively. The highest wage income was derived from harvesting and lowest from manuring and fertilizing in both the areas due to the prevalence of kind wage in harvesting. The income for the workers in progressive area was more than that in the non-progressive area. The seasonal distribution of employment and income for all workers was reviewed on quarterly basis beginning with June. The result showed that the distribution of employment and income for all workers in the progressive area was fair in comparison to the non-progressive area over different periods with the exception of child workers who went to school. The lean period of employment for all workers in the progressive area is during September, December, January, February and May. A strategy was devised for the restructuring of the labour market on the basis of above results. It reveals that the factors affecting the labour market in the strategy are agricultural development which will lead to increase in demand for labour followed by self-employment in agro-or cottage industries and release of child workers from existing employment to enable them to get the benefits of education leading to a reduction in the supply of labour. The increase in the demand for labour followed by contraction in supply and the implementation of the Minimum Wages Act will raise wages and ultimately the income of labourers. This strategy will also offer a solution to the widespread unemployment and under-employment in the rural areas.

OPTIMAL UTILIZATION OF SOYAM FORESTS AND OTHER COMMUNITY LANDS FOR INTEGRATED RURAL DEVELOPMENT IN THE HILL REGION OF UTTAR PRADESH—CONCEPTS, METHODOLOGY AND PROBLEMS IN PLAN IMPLEMENTATION

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Integrated rural development envisages scientific appraisal of resources of a region and their optimal use for increasing income and employment particularly of the rural poor. In this paper an attempt is made to develop a plan for optimal utilization of the resources available in the hill region of Uttar Pradesh. It is observed that the hills are not much suited for cereal grain production due to the difficult terrain, poor irrigation facilities and the problem of soil erosion. The most important natural resources of the region are forests which account for 64 per cent of the total geographical area. Land capability surveys in the hills suggest that perennial crops like forests, forage and horticultural fruit crops are best suited for the agro-climatic conditions of the hills. Hence more emphasis has to be given to these crops for increasing the income and employment of the local population and to minimize the problem of soil erosion. Assuming that forestry, fodder and horticultural fruit crops can profitably be grown in the privately managed Soyam forests and other community lands owned by local *Panchayats*, an optimization model over time has been developed which can project the position of these forests, fodder and horticultural crops to a future time period, say after ten years. In this model, to the usual linear programming framework the following set of dynamic relationships are added. These inequalities show the relationship of acreages under different crops in different time periods.

$$A_i\ (t) \leqslant (1+\bar{\beta}_i)\ A_i\ (t-1)$$

$$A_i\ (t) \geqslant (1+\bar{\beta}_i)\ A_i\ (t-1),\ (i-1,) \ldots\ldots\ldots\ldots,n)$$

Here, A_i (t) is the acreage under ith activity in time t. The first inequality means that the acreages under ith activity in t will be at most the acreage under that crop in the previous year plus some contant ($\bar{\beta}_i$) times this acreage. This is the upper limit of the acreage for ith activity. Similarly, the lower bound for acreage under the ith activity is given by the second inequality. In this model the optimal acreages of different activities in a particular time period in turn become the constraints for the next period and so on. It is suggested that projects on these lines may be developed for several watersheds in the hills and action plans may be prepared for their implementation. The technology for growing these forest, fodder and horticultural activities is available with government

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forest and horticultural departments and agricultural universities. The village *panchayats* and other community institutions are expected to shoulder the responsibility of plan implementation and management. Implementation of these programmes may be taken up by the government agencies under the technical advice of a multi-disciplinary team in agricultural universities including soil scientists, silviculturists, horticulturists, agricultural economists, rural sociologists, etc.

INTEGRATED AREA DEVELOPMENT IN JAMMU & KASHMIR STATE WITH SPECIAL REFERENCE TO APPLE MARKETING

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In dealing with the integration of apple producers, two spheres of activity should be distinguished, namely, production and marketing. The integration at the level of marketing is more justified because there has been a marked increase in the production of apple in the State. Between 1964-65 and 1971-72 the increase in the area under apple was 134.76 per cent while its production and productivity increased by 390.37 and 109.02 per cent respectively. The present study as such attempts to find out the problems of the apple orchardists at the marketing level and to evolve an integrated approach to increase their net returns. Baramulla district was purposively selected and six villages in all, relatively more important in terms of number of orchards and marketable surplus were selected. Eight per cent of the growers with a minimum of five growers from each village was selected at random. Simple logical analysis was used to interpret the results. The study brought out that the average size of the orchard was 1.23 acres. Of the total number of 625 orchards in the study area, 365, 184 and 76 orchards constituting 58.40, 29.43 and 12.17 per cent of the total belonged to the small, medium and large categories of the size class of 0-1, 1-2 and 2 and above acres respectively. During the course of investigation it was observed that 51.42, 28.57, 5.72 and 14.29 per cent of the apple growers marketed their produce through the pre-harvest contractor, commission agent, wholesalers and co-operative agencies respectively. The empirical analysis of market intelligence revealed that of the total sample growers, 52.86 per cent did not receive market information and sold their produce as such and the remaining growers made use of the market news from one or the other source. It was observed that 15 per cent of the total produce went as waste because of the prefall and attack of insects and diseases. The orchardists were of the opinion that 50 per cent of this waste which they had to sell at throw away prices could be utilized in processing. The net returns per standard box when sold through the pre-harvest contractor, commission agent, wholesaler and co-operative society were Rs. 26.34, Rs. 34.21, Rs. 36.98 and Rs. 37.66 respectively. The apple when marketed through the co-operative society was most profitable but only 14.29 per cent of the apple growers made use of this agency. In view of the problems outlined above, it is advocated that a multi-purpose unit on the pattern of MAFCO may be set up in order to ameliorate the lot of farmers. It is also suggested that the Government should come forward as a purchaser of the pre-fallen apples and culls and also in the event of fall in prices, support price should be given to the apple growers and the Government on its part can utilize the pre-fallen fruit and culls in making juices, jams, etc., by setting up apple processing units in the rural areas, which would generate employment opportunities for the rural masses and through its 'spread effect' would make integrated area development a possibility. The co-operative marketing societies must advance liberal credit to the apple growers on easy terms and the Government must ban the sale of apple through pre-harvest contractors and commission agents by suitable agrarian legislation. This would automatically integrate the apple growers in marketing their produce through the co-operative societies.

PROBLEMS OF INTEGRATION IN HIMACHAL'S APPLE INDUSTRY— A CRITICAL ANALYSIS

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Subsistence farms cover some 40 per cent of the cultivated land of the world and support 50 to 60 per cent of mankind, which also holds true with greater vigour of Himachal Pradesh. The average size of holding in Himachal Pradesh is one hectare per family including pasture land. The State is, however, gifted with a variety of agro-climatic regions suiting best to the growing of various

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kinds of fruits. The State suffers from many limitations which restrict the cultivation of ... Apple occupies a top place among all the fruits due to highest per hectare return and the ... basically horticultural in its economy. As an approach, horticulture in general but apple busine... particular is integrative. Development of apple industry depends upon a system of related fu... tions: production, supply, marketing, governance, research and education/extension. During the last ten years, the number of specialised units carrying on these functions has also increased and the institutions rendering these services have become highly specialised. A road development programme in the intensive apple producing pockets has affected the market component which has also helped in improving the timely supplies of critical inputs to the fruit growers with some exception due to heavy snow-falls or heavy rains dislocating the traffic in winters/rainy season, However, terminal markets are found flooded due to inadequate linkage between various components of the systems which sometimes resulted in spoilage and failure to take advantage of market demand when prices ruled high. Sometimes improved production and market technologies have not been effective due to inadequate development of an efficient supply component to provide the necessary inputs such as fertilizers, pesticides, improved equipment, packages and packing material, skilled graders and packers, credit, necessary marketing component—cold storage, processing, transport and adequate purchasing power. However, in years of bumper apple crops, the development of marketing strategy requires integration of apple product, price, distribution and promotion decision variables. Apple industry which is market-oriented is mainly vertically structured and in this structure the areas of consideration are production, orchard supplies, marketing (trading), cold storage, processing, research and extension, and government policies/programmes. However, the important integration problems of various activities faced in apple industry are price, quantity and quality uncertainties, variability, market requirements and potentials, quality standards, control over business, distribution, market power, institutional constraints, etc. However, integration has benefited the fruit growers and consumers as well even under a situation when the majority of apple growers are too small to integrate with marketing. Fruit growers owned the Himachal Fruit Growers Co-operative Marketing and Processing Society Ltd. This organization in the co-operative sector and the Horticultural Produce Marketing and Processing Corporation Ltd. (a Government Undertaking) have been notably successful in integrating many activities such as production, marketing (trading), cold storage, processing, manufacturing, etc., leading to a lowering of distribution cost as a result of delivery of fresh apples to terminal markets along with other perishable fruits and processed products.

FRUIT INDUSTRY AS A 'LEADING SECTOR' IN THE ECONOMIC DEVELOPMENT OF HIMACHAL PRADESH

L. R. Sharma*

Himachal Pradesh is frequently referred to as an "orchard land." The hypothesis that fruit industry has played a pervasive role or that it has been a 'leading sector' in the economic development of Himachal Pradesh might be tested. W. W. Rostow's analytical framework of a 'leading sector' is adopted for the purpose here. Rostow defines leading sectors as those "whose possibilities for innovation or for the exploitation of newly profitable or hitherto unexplored resources yield a growth rate markedly higher than the average for the economy." These sectors are also important in that they "might drag along important supplementary sectors" and thereby affect the overall growth rate of the economy. The recognized criteria of a 'leading sector' are as follows: (*i*) Their growth rate is substantially higher than that of the total product. (*ii*) The net output of the sector has more than a negligible specific weight in the total value added. (*iii*) The sector has significant linkage effects on the economy. These criteria are too imprecise and ambiguous to enable one to clearly identify the 'leading sectors' in an economy. Notwithstanding this drawback, these criteria are applied to the fruit industry of Himachal Pradesh in order to test whether it has been a 'leading sector' in the economic development of this State or not. The analysis reveals that during the Second, Third, and the Fourth Plan periods, while the (gross) output of the fruit industry grew at the rate of 171 per cent, 95 per cent and 196 per cent, the net domestic product of the State rose at 24, 14 and 13 per cent, respectively, thus the former showing consistently a substantially higher growth rate than the latter. The relative weight of the (gross) value of fruits produced in the (net) domestic product of the State was low, at 2 per cent, even in 1968-69, but by 1973-74, it had risen to 6 per cent, which was by no means negligible. The test of the foregoing two hypotheses is based upon direct contribution of this sector. How about the wider linkage effects of the fruit industry? When these are analysed, they turn out to be rather weak. Most of the inputs used in the sector are imported from outside the regional economy. Only packing boxes, and some spray oil are locally produced. Thus, despite the potential for it, the backward linkage effects of the sector have

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negligible. The analysis of forward linkages shows that the industry did stimulate some ..g activity. By 1975-76, ten fruit processing firms had sprung up in the State, but these ..d merely 0.61 per cent of the locally produced fruits. Thus, the fruit industry in Himachal ..desh seems to have exerted very weak linkage effects on the rest of the economy, despite the potentialities being there. This discussion leads one to conclude that the fruit industry in the State does satisfy the first two criteria of a leading sector, but the test of the third criterion yields rather poor results. Hence, the sector turns out, at best, to be a potentially emerging leading sector.

ROLE OF VEGETABLE ECONOMY ON SMALL FARMS IN INTEGRATED RURAL DEVELOPMENT

G. S. Lavania, G. C. Srivastava, R. S. Dixit and R. Prasad†

An attempt is made in this paper to examine the potentiality of vegetable farming as the main source of income and livelihood for the small farmers in the context of integrated rural development. Precisely, the study is confined to answer two specific questions: (*i*) Does the adoption of vegetable farming offer economic possibilities to the cultivators? (*ii*) Are the various factors of production efficiently used in vegetable production? The basic data were collected for the year 1975-76 from 60 farmers, 20 each from three villages around Bhagalpur town in Bihar. The operational holding of the farmers was so small and unevenly distributed that studies according to size-group could not be conducted. The special characteristic of this region is the existence of a larger number of small and marginal farmers. The soil, climate and other agro-economic conditions, on the one hand, and changes in the consumption habits, demand, prices, etc., on the other hand, have made farmers keen on growing vegetables on commercial lines. The findings of the study showed that in all the three villages the area under commercial crops which included vegetables, potato and maize was more than 80 per cent. The percentage of irrigated area to net cultivated area ranged between 70 and 80 and the intensity of cropping varied from 184.44 to as high as 276.76 per cent. The net income received per acre varied between Rs. 3,200 and Rs. 4,300 which was almost four times as compared to food crops. The percentage return on working capital was 301.71, 295.65 and 267.65 for the three villages under study. The relationship between production resource (x) and output (y) was determined by the Cobb-Douglas form of production function. The functional analysis included manures and fertilizers, irrigation, human labour, bullock labour, plant protection and marketing. R values indicated a very significant effect of the selected variables on output. R^2 value indicated a large amount of variation, that is, 85.37 per cent, 70.09 per cent and 62.35 per cent for the three villages, explaining a large proportion of variance in the output caused by the variables included in the function. The sum of elasticities of production of the inputs used in the production were 0.6742, 0.6075 and 0.4026 for the three villages, showing decreasing returns to scale. The MVP for manures and fertilizers was highest (2.36, 2.03 and 1.59) for the three villages followed by human labour and plant protection. The MVP for irrigation in two villages was negative, suggesting the need for proper training in water management technology. The MVP for bullock labour was also negative in all the three villages suggesting gradual withdrawal of this input factor. The logical conclusion drawn from this study is that vegetable farming in this area represents a favourable agro-economic environment. The potential for more intensive use of production factors exists with the provision of liberal financial assistance and introduction of proper technical expertise through various schemes of integrated rural development. This would pave the way for higher income, saving and reinvestment and opportunities for more gainful employment on farms, thus raising the level of living and economic well-being of the rural people.

NEED FOR REGULATION OF BOMBAY VEGETABLE MARKETS—A STRATEGY FOR DEVELOPMENT OF KHED REGION OF PUNE DISTRICT

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In this paper an attempt has been made to assess the efficiency of a system of marketing of vegetables existing in Khed region of Pune district with reference to Bombay markets with the help of two marketing measures: (*i*) per unit cost of marketing incurred by the producers and (*ii*) the price spreads in marketing of green chillies, *kharif* potato, *rabi* potato and onion. The sample for this study consisted of 95 cultivators from 14 villages both selected randomly. Data on the econo-

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mics of production and marketing of selected vegetables pertain to the year 1971-72. The study of cost of marketing incurred by the producers indicated that for all the four vegetables the proportion of marketing costs incurred by the producers was higher. The charges like commission and postage are out of proportion while the charges like *vatav* (rebate), *dharmadaya* (charity) and association fees are unwanted and illegal as no sound justification was given for levying them. The study of price spread indicated that in the marketing of selected vegetables the wholesaler and retailer together appropriated about 40 per cent, the producer received about 40 per cent and the marketing cost covered the remaining 20 per cent of the consumer's rupee. As the producers have not received the lion's share in the consumer's rupee, the vegetable marketing system in Bombay city is defective and needs a change. A co-ordinated strategy of regulation of Bombay vegetable markets under the Regulated Markets Act, providing facilities for cold storage, grading and standardization in the Bombay markets as well as in Khed region and quick and cheap means of transportation on co-operative basis would generate more incomes to the producers and accelerate the agro-economic development of the Khed region.

STRATEGIES FOR INTEGRATED RURAL DEVELOPMENT

P. J. Georget†

The concept of integrated rural development is not new to Indian Planning. In order to develop rural India, efforts have been made to bring functional integration of staff and administrative apparatus through community development programme and *Panchayati Raj* systems. Intensive agricultural development programmes through hybridization techniques and provision of a package of inputs including marketing could so far succeed in harnessing the production of certain crops like wheat. Introduction of Growth Centres is another attempt to promote integrated growth in the rural areas by locating and identifying growth potential. Adoption of the concept of whole village approach is once again in the same direction to develop the entire area through consolidation of holdings, soil and moisture conservation of dry land and adoption of suitable cropping pattern. Strategies for integrated rural development in its fullest sense means development of agriculture, cottage and small-scale industries as well as social and developmental infrastructure. When various sectors are involved and participants who are not evenly placed in integrated rural development programmes, it should be manned by an agency with the statutory powers for not only to promote the rate of growth but also to maintain equal distribution of benefits resulting from those programmes. Agriculture is the core sector and therefore the strategy should be such that an efficient water management including conjunctive use of water and adoption of proper crop calendars must lead to demand for industrial activities. While planning the industrial activities, care should be taken to include such schemes which will benefit the weaker section and absorb all the labour. It will be a futile effort if massive investment is undertaken to reach optimum rate of growth within a short period. Instead, the initial investment should be an attempt to reach the level of growth prevailing in the neighbouring areas. In this direction, the concept of Comprehensive Area Development Programmes adopted by West Bengal Government is an example and an attempt is made in this paper to highlight some of its activities, to show that similar type of attempts may be made while planning the strategies for intensive rural development.

STRATEGY FOR INTEGRATED RURAL DEVELOPMENT: AN IN-DEPTH STUDY OF TIRUCHIRAPALLI DISTRICT OF TAMIL NADU

K. Thiruvenkatachari*

Significant changes have taken place in the thinking about and attitude towards agricultural and rural development in all countries, and more especially in under-developed countries. The emphasis has now shifted from efforts aimed at promoting simple growth to attempts to improve the output of the small farmer, principally by increasing those investments that would benefit lower income groups in the rural areas. The major problem of rural development is poverty and rural development should focus on rural poverty. For this it is now proposed to increase productivity, increase incomes and to aim at multi-sectoral development. Keeping these in view, in this paper an attempt is made to enter into an in-depth study of Tiruchirapalli district and suggest a scheme of Integrated Rural Development. The theoretical discussion attempted in the first section of the paper shows that multi-dimensional development is a difficult task to accomplish. Therefore our aim at improving the incomes of the villagers must concentrate on the dominant sector. Detailed considerations are given in the second section regarding the land use, cropping and irrigation pattern

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in the district. On the basis of these considerations, several new industrial activities with agro-based raw materials have been suggested. It is also pointed out that there should be improvements in health, sanitation, education and housing in the rural areas of the district. The role of credit agencies in development have also been established. The conclusions of the enquiry are presented in the third section. It is pointed out that there is scope for improvement in the area under cultivation in the district. It is also established that the irrigation facilities can be improved by encouraging minor irrigation. More land can be put under double and multiple cropping. A number of agro-based industries are to be encouraged. Special agencies armed with personnel for supervision of the use of credit should be established in the case of co-operative and commercial bank credit. Suitable technology should be developed for encouraging the new industries. Housing, sanitation, health, education and other facilities could be improved in the villages of the district. The establishment of the Rural Development Corporation is proposed. The village *panchayats* must be given more powers regarding development activities. The existing *Panchayati Raj* institutions can supply the necessary framework for organizing the scheme of integrated development. Proper incentives are to be supplied by the Government for setting up the new industries in the rural areas. Finally, it is concluded that a "well-designed rural development project should reach large number of low income producers; should be financially viable and able to raise the incomes of this group; and should be replicable especially with regard to the costs involved. It should be comprehensive in scope where it is clear that the non-agricultural components are consistent with national, regional and sectoral guidelines."

INTEGRATED AREA DEVELOPMENT THROUGH STRATEGY OF GROWTH CENTRES—A CASE STUDY OF CHAMPARAN AND MUZAFFARPUR DISTRICTS IN NORTH BIHAR

S. P. Sinha and B. N. Verma†

Among the new strategies and techniques developed for an integrated area development at the micro level, the technique of locating growth centres is an important one. In fact an appropriate location of centres and services with an understanding of functional relationship among different services and sectors may help in generating the growth impulses through the located centres to the under-developed rural periphery around them. Thus the integrated area development approach rests on the appropriate location of centres of social and economic activities over a physical space for the balanced regional development. Growth centres play a focal role in the integrated area development programme. In the present study an attempt has been made to use the technique of growth centres as a strategy for integrated area development of the rural areas in the two backward districts of Champaran and Muzaffarpur in North Bihar. These two districts cover a considerable part of Gandak Valley Region and their rural areas are characterized by agricultural backwardness. Altogether there are 65 blocks in these two districts out of which those blocks (headquarters) and villages have been tried to be located as growth centres which may generate growth impulses in the rural areas of the two districts. In order to locate these growth centres on the basis of scoring, a ranking of the blocks has been prepared. In the ranking of the blocks first two blocks according to the magnitude of their scores have been declared as growth centres, one belongs to the eastern region and another to the western region in both the districts. The scoring and ranking of the blocks have been prepared on the basis of the scale of functional hierarchy and order of respective weightages (the details of weightages and criteria of scoring mentioned in Appendix I and II) allotted to them.

In Muzaffarpur district, Musahari (1535 points) has been located as a growth centre for Eastern Muzaffarpur while Lalganj (1510 points) has been located as a growth centre for Western Muzaffarpur. Similarly in the case of Champaran, Chakia has emerged as a growth centre in Eastern Champaran region, while Bagaha I has been located as a growth centre for Western Champaran area. Only that block has been selected as a growth centre which has secured 1000 points approximated. From this criterion one more block in Western Muzaffarpur may be located as growth centre, namely, Paru, whereas in Champaran, Bagaha, the second growth centre in the western region has hardly 1000 scores. The score and ranking of centrality have been computed for villages only in the blocks which have been declared as growth centres. In Muzaffarpur, Gannipur which has an urban complex (being situated just by the side of Muzaffarpur's township) has got maximum score (58) and has been declared as a growth centre at the village level. In Lalganj block of Muzaffarpur district also, village Parbodhi Narendra has been given 70 points and deserves to be declared as a growth centre at the village level. The maximum score of centrality has occurred in the case of this village also, because of its urban complex due to nearness to the Hajipur township. In Champaran district, village Ramkaran Pakari has got maximum score of centrality (26) in Chakia block.

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The main cause of its being declared as a growth centre at the village level is that it is situated by the side of lateral road and possesses greater transport as well as marketing facility as compared to other villages. In Bagaha block, Baswaria has emerged as a growth centre having maximum score of centrality (48) at the village level. This village is also situated by the side of lateral road and is having the same facility which Ramkaran Pakari in Chakia block possesses.

After locating the growth centres what is important is to formulate master plans (district level sectoral plans) for an integrated development of the rural areas in the two districts. The master plan of these two districts may consist of four integrated sectoral plans, namely, sectoral plan for the development of transportation, agriculture, industries and health and education. In the sectoral plan for agriculture, proposals may be made for upgradation of market, opening new fertilizer depots, developing irrigational resources, installing rice hullers and agricultural implements repairs shop, agro-processing units, etc., in the growth centres both at block and village levels; in the sectoral plan for industries some rural industries, *e.g.*, rice bran oil mill, bone digester, leather tanning, wooden, electric accessories, fertilizer mixture, readymade garments and wooden furniture industries may be proposed to be developed for creating employment opportunities in the area under study. Under the sectoral plan for health and education, proposals may be made to develop health centres, general and basic type schools at different levels both in the growth centres at block and village levels. The above sectoral plans may be formulated and executed in an integrated way so that an integrated development of the rural area of these two districts under study is achieved.

HEALTH CARE: AN INTEGRAL PART OF RURAL DEVELOPMENT

Surendra P. Singh and Rajendra Prasad*

The results of almost all development efforts have benefited only certain pockets or areas. Even the basic needs of the vast majority of the rural people for food, health, housing and education are not being met today in the rural areas fully or adequately. This is because most of the popular development efforts were concentrated in improving agriculture. Increased productivity in agriculture is a necessary condition for development but not a sufficient condition. Because improved agriculture, by providing more and better food, decreases mortality and malnutrition but may not necessarily increase per capita income and human efficiency. Poverty creates a vicious cycle of poor health, lower productivity, absence of ambition and high birth rates. The poorest will not be better off unless the problems of nutrition, health and population are tackled simultaneously. Therefore, improvement in agriculture alone will not improve the quality of life and therefore, not a sufficient condition for development. Health of rural poor is what really needs attention along with other developmental programmes. The development of health programmes must be intricately interwoven with the total social and economic development. Improved health of the people promotes social and economic development as the healthy worker produces more for society. Conversely, socio-economic development promotes health by providing more food and income and better health, welfare and educational services to the people. The purpose of this paper is twofold: (1) to discuss the relationships between health, poverty, and rural development, and (2) to suggest measures for improving health care programmes in the rural areas. Rural development represents an expanded approach to rural community problems. It embraces a wide range and mixture of activities like projects to raise agricultural output, improving health and education, create new employment and improve housing and living conditions. The focus is not on aid to individuals but on group decisions and group actions. Better health is both an objective of and an instrument for development. Increasing evidence shows that improvements in health promote economic development by increasing the ratio of the effective labour force to the population and directly stimulate the demand for and practice of family planning. Health programmes must be an integral part of develoment programmes in the rural areas. The health problems in the rural areas must be identified at the community level and services be provided at the community level. Health programmes should be genuinely tailored to meet the needs of the rural people and be highly educative in nature. Several suggestions are made for developing health care programmes in the rural areas.

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STRATEGY FOR RURAL DEVELOPMENT (A THEORETICAL APPROACH)

R. P. Singh†

A number of programmes such as community development, Intensive Area Development Programme, etc., initiated since Independence could not improve the lot of the rural people. Unemployment and inequalities in wealth and income have continuously increased despite some phenomenal increase in agricultural production. The idea of rural development includes the complete transformation of rural areas visualising changes not only in the methods of production and of economic institutions but of social and political infrastructure as well and transformation of human relationships and opportunities. The present spirit of the people of dependence and opportunism must give way to self-reliance, initiative, resourcefulness and sense of community. The integrated approach to rural development refers to the method of strategy for achieving rural development based on the said assumption, supported by field experiences. Integration must form an important and integral part of the overall national development plan and take into account all the inter-related socio-political, economic and technical factors in an integrated manner. Before initiating the rural development programme it should be kept in mind that the bulk of the rural population is poor and is spread over the entire rural sector. The programme should be designed in such a way that it should become a continuous dynamic process, rather than as an extensive vs. an "intensive" or maximum vs. 'minimum' effort. In the first stage, the productivity in the agricultural sector must be increased, which will provide sufficient raw materials and by-products for increasing the opportunities for further expansion of small and cottage industries and agro-based industries in the rural areas. In initiating the rural development programme, care should be taken that rural people themselves should take keen interest and active participation in the activities for development. Mere distribution of large funds and initial concentration of resources in a few regions may create regional imbalances. Thus, the personnel involved in the rural development programme should have rural bias and should make attempts to develop the rural areas based on the experience of the rural people with slight improvement in the techniques used by the people. Instead of introducing the borrowed technology in the rural areas, it is better to develop their own traditional skill and techniques. Active participation of the rural people and Government officials aided by voluntary organizations involved in social work and co-ordination of their activities are essential for the success of rural development programmes. The basic institutions, particularly the co-operatives and *Panchayats* should be strengthened economically and technically to enable them to actively participate in rural development work.

INTEGRATED RURAL DEVELOPMENT IN WEST BENGAL— PERSPECTIVE AND PRACTICE

P. K. Chatterjee and Shibdas Banerjee*

Micro level planning is the primary instrument of realizing macro level objectives. For rural development, a well-defined area has to be taken as the unit of area planning. Rural development requires three main types of integration: (*i*) integration of agricultural development with the development of the other sectors of the rural economy through the exploitation of the linkages, existing and potential, (*ii*) integration of the different aspects of agricultural development; and (*iii*) integration of the interest of different sections of the rural population. Integrated rural development should emphasize both growth and distributive justice. Not only the two objectives but also the appropriate administrative agencies have to be integrated. The integration between the two objectives has to be attained mainly through channelling the contributions of agriculture in proper direction. Irrigation, availability of farm supplies, local verification trials, extension services, marketing facilities and credit facilities constitute the essential elements of any sound programme of agricultural and rural development. All enterprises in complementary and supplementary relationship with agriculture, all enterprises having forward and backward linkages with agriculture, and all enterprises whose products may be in demand by the rural consumers should be developed and integrated into a well-knit pattern of rural development. We have examined in this connection an

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experiment being made in West Bengal for integrated rural development. The programme seeks to develop agriculture by providing necessary inputs and finance. It proposes to develop some allied activities with a view to creating income, employment and output outside traditional agriculture. It has several schemes suited to the endowments and inclinations of the weaker section of the population. The project authority thinks that the big landlords who are also moneylenders and waterlords work against the successful development of projects like this. The project should aim at (*a*) building up rural infrastructure, and (b) equipping the farmers with necessary knowledge and resources. It should try to attain its objectives not through directives but through creation of appropriate motivations. Compulsion breeds inefficiency, apathy and hostility. History has taught us at least this lesson.

STRATEGY FOR INTEGRATED RURAL DEVELOPMENT (A CASE STUDY)

J. S. Garg, G. N. Singh and V. Prasad†

The present paper attempts to develop an integrated rural development plan of three villages, namely, Bojha, Basen and Daleepnagar adjacent to newly acquired *usar* land, by C. S. Azad University of Agriculture and Technology, Kanpur. Before developing such a plan, a socio-economic and inventory resource survey of the villages was made. The main problems as emerged out from the study consisted of low level of agricultural productivity, low levels of income and employment of the farmers and agricultural labourers, poor development of subsidiary occupation, absence of assured means of irrigation, poor technical know-how of agricultural production, absence of institutional credit agency, poor development of infrastructure and poor sanitation. The strategy for integrated development of these villages included the introduction of modern technology of agriculture; timely and adequate supply of production inputs; land reforms and use, irrigation and water management; pest control; post-harvest technology; provision for institutional credit; extension of subsidiary and cottage industries; development of infrastructure; development of health, sanitation and education; establishment of Research Unit and Evaluation Cell and establishment of Rural Development Organisation. Demonstration of modern technology on farmers' fields, designing of crop sequences and introduction of new crops, based on soil fertility and economic gains should be provided. Timely and adequate supply of production inputs would go a long way in the adoption of modern technology by the farmers of the locality. Total requirements of nucleus and foundation seeds should be met centrally, under expert supervision. For assured irrigation the installation of tubewell should receive first priority. The bank should be asked to finance this project on the basis of collective security and proportionate requirement of credit on the basis of area cultivated by them. The bank in the area should arrange for the purchase of seeds, fertilizers, pesticides, irrigation, implements and machinery and milch animals.

In order to augment income and employment of the majority of small farmers and agricultural labourers, milk and egg production programme should be introduced. There is also a good scope for the introduction of agro-based rural industries like flour mill, oil *ghanis* and paddy pounding. A drive for the development of new linking roads, remodelling and repairing of old roads needs special attention, which may be undertaken on voluntary participation of the village people. For the constant monitoring of on-going programmes of action and progress thereof, there should be an evaluation cell under the charge of an Agricultural Economist. For the proper implementation of the programme, there should be two committees, one at the university level named as 'Rural Development Expert Committee' consisting of university experts and another at the village level named as 'Rural Development Committee,' comprising university experts, local leaders, BDO, Bankmen and others. The committee at the university level should decide the programme consistent with the local needs and resources. The programme, before it is finalized, should be thoroughly discussed in the Rural Development Committee. For the successful implementation of the plan, the university, farmers and Banks will have to work wholeheartedly as one unit.

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ROLE OF FARM FINANCING INSTITUTIONS IN INTEGRATED RURAL DEVELOPMENT PROGRAMME (A CASE STUDY)

J. P. Misra, Ram Iqbal Singh, G. N. Singh and K. N. Pandey*

Keeping in view the important role being played by the institutional credit agencies in financing the farmers under the integrated rural development programme in recent years, an attempt has been made in this paper to study the comparative role of different financing institutions engaged in supplying farm credit to the farmers in Basti district of Uttar Pradesh. The main objectives of the study were (1) to study the availability of the institutional finance for agricultural purposes through different financing institutions, (2) to study the pattern of utilization of available farm credit, and (3) to suggest suitable measures for strengthening the distribution channel of credit for its effective contribution under integrated rural development. The study is based on an intensive enquiry of 100 beneficiary cultivators who were actual borrowers of different financing institutions, selected randomly from three size-groups, *i.e.*, 0-2 hectares 2-4 hectares and 4 and above hectares, from five villages of Sadar block, Basti district (U.P.). Three-stage stratified random sampling technique was used to select the block, villages and the cultivators. The number of cultivators under different size-groups was kept in proportion to their number in the universe of five villages. The study was conducted by survey method during the agricultual year 1970-71 and 1971-72.

The four main financing institutions engaged in the distribution of credit to the cultivators for agricultural purposes in the study area are: (1) Government, (2) Co-operative, (3) Land Development Banks (LDBs) and (4) Commercial Banks. On the whole, about 34 per cent of the farmers took loan from Government, 28 per cent from co-operatives, 24 per cent from LDBs and only 14 per cent from commercial banks during the reference period. It was observed that small farmers were neglected by the commercial banks in the provision of finance, and only a small proportion, *i.e.*, 8 per cent of the medium size-group farmers (2-4 ha.) could get loan from them. Larger farmers were the actual beneficiaries of commercial banks (20 per cent) because they offered better security for getting loan. The total requirement of credit by the sample farmers, on an average, amounted to Rs. 1,660.92 per farm family, which was worked out by the budgeting technique. As against this, the total availability of credit was Rs. 1,417.05 per farm family out of which Rs 262.72 was available from Government, Rs 316.53 from co-operatives, Rs. 295.46 from commercial banks, Rs. 242.40 from LDBs and Rs. 99.95 from moneylenders. On an overall basis, it was estimated that 65.28 per cent of the total government loan was given for purchase of pumping sets, 18.00 per cent for fertilizers, 7.08 per cent for digging well, 5.98 per cent for tubewells and 2.89 per cent for seed purposes. In the case of co-operatives, a reverse trend was observed. About 53.34 per cent of the total co-operative advance was given in cash for meeting the requirements of agricultural operations, 26.84 per cent for fertilizers, 17.72 per cent for purchase of bullocks and 2.16 per cent for seed. The Land Development Bank gave loan mainly for minor irrigation purposes of which 18.99 per cent was for pumpsets, 18.82 per cent for Persian wheel and 10.43 per cent for wells. About 90 per cent of the total commercial bank finance was given for construction of tubewells and boring and for installation of pumpsets during the study period. Only 10 per cent loan was given to the farmers for crop loans. In regard to the utilization of agricultual finance, it was observed that on an average, 96 per cent of Government loan was spent on production purpose, 5.48 per cent on consumption and 2.56 per cent for other purposes. In the case of co-operatives, about 24 per cent of the total loan advance was spent on consumption while in the case of commercial banks only 1.84 per cent was spent on consumption and other purposes. The loan given by the LDB was almost utilized for production purposes; only 5 per cent was spent on other activities.

Credit being one of India's most scarce resources, needs to be managed wisely; credit for agricultural production should receive more attention through a sound agricultural credit policy. A good credit policy should not only help in increasing production but it should also help in providing other facilities to the farmes for their all-round development such as marketing and processing of their produce. If the full benefit of modern farm technology is to be assimilated by the cultivators, an all out effort should be made to fully meet the credit requirements, particularly of small farmers who constitute the main bulk of the population. The present credit policy of most of the lending institutions is to advance production loans but not for consumption needs. This has led to the problem of credit diversion. Therefore, the credit policy should be revised to include provision of loan to the farmers for consumption purposes to minimize the diversion of credit. Thus for the successful implementation of the integrated rural development programme, timely and adequate supply of credit through farm financing institutions is imperative and should receive top priority under such programme.

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FARMERS' SERVICE SOCIETY AND ITS PARTICIPATION IN INTEGRATED RURAL DEVELOPMENT

P. C. Shukla†

The farmers' service societies (FSS) are established at *Nyaya Panchayat* level for integrated rural development. They are supposed to attend to the needs of the village economy covering all aspects of the agricultural and non-agricultural sectors, *viz.*, economic, financial, social and technical. The FSS can acquire capital by any one of the five means or by all the five means, *viz.*, share capital of members, loan and deposits, grant-in-aid and subsidy, security bonds and profits and admission fee. It is also supposed that the FSS must be self-dependent within three years of its establishment. One of the interesting facts emerging from two case studies of FSS in Deomai in Fatehpur district and Saidabad in Allahabad district of Uttar Pradesh is that the FSS must not be only a loan distributing agency of one type or the other. The creation of new developmental institutions with changed name but without changing the outmoded practices and procedural working system will not have any impact on development in the real sense. The pattern of loan distribution also have to be reorganized according to the individual need of the farmer, on the one hand, and general need of the villages, on the other. It is also found in the course of the interview that lack of finance was not an important problem. What is needed at the village level is provision of managerial efficiency and entrepreneurial ability. For the integrated rural development village farmers indeed need technical assistance in terms of knowledge from farm management to occupational management level covering two separate aspects of rural economy, *viz.*, village economic problem and farmers' economic problems which have their own socio-political bearing.

PLANNING FOR INTEGRATED RURAL DEVELOPMENT— AN ANALYSIS OF GAPS AND CONSTRAINTS

V. K. Dubey and S. B. Singh*

Planning has been identified as a core element of all development projects, particularly in the context of Integrated Rural Development. The success of any programme planning effort depends largely on how the gaps between what is being practised and what ought to be are identified. It is equally important to identify the factors/constraints which work as impediments in the way of goal realization. This paper is an attempt in the direction of gaps and constraints analysis. The content of the paper is based on the data of a Bench Mark Survey conducted by the Division of Dairy Extension, National Dairy Research Institute, Karnal in the village Phusgarh, situated at a distance of 4 kilometers from the town Karnal. All the 69 farming families in the village were included in the sample of the study. The farmers were grouped into four categories on the basis of land holding: large farmers having 10 acres or more land, medium 5.1-10 acres, small 2.6 to 5.00 acres and marginal 0.1 to 2.5 acres. Regarding the gaps in wheat technology, it was found that farmers ploughed their fields more number of times than recommended; applied more seed rate, used less than the recommended dose of nitrogen/phosphorus and potash, applied more number of irrigation with no benefit and average yield obtained was less to the extent of 21 to 25 quintals per hectare No plant protection measures were adopted by treating the seed or applying insecticides. Sowing by broadcasting (a primitive method) was practised by all the farmers. The gaps in paddy cultivation were identified as using less seed rate (5-8 kg.) to grow nursery for one hectare; planting one or two seedlings per hole instead of two to three, applying less quantity of nitrogenous fertiliers than the recommended dose by all the farmers, not applying phosphatic and potassic fertilizers by the small and marginal farmers, and also not using any plant protection measure to control pests and weeds, and lower yield of paddy per hectare than expected. The constraints responsible for the gap as identified were (1) lack of knowledge in the application of irrigation, treatment of the seed, use of pesticides and weedicides, use of balanced fertilizers, testing the soil and use of improved method of sowing; (2) poor source of information having no linkage with IADP or Haryana Agricultural University experts; (3) input supply like seed, fertilizer, etc., was found inadequate by all the farmers. Credit problem existed in the village. (4) Marketing of produce was not found up to the mark. Farmers had to sell their produce at a lower rate than the rate fixed by the Government.

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MANAGEMENT APPROACH TOWARDS INTEGRATED FARM DEVELOPMENT

K. S. Suryanarayana†

The paper highlights the role of the management approach in the context of increasing need of the vital resources like manpower, finance and materials. These require proper allocation and efficient use and assume considerable importance in view of the application of new knowledge and technology package in agriculture.

It is necessary to ensure that the quality of the managerial inputs is secured through adequate skills and effectively utilized in the organization and operation of farms. It is because the quality of the management input is crucial in realising the gains of the new technology, particularly in closing the research-cum-extension gap that was found to exist in the reality of farming situations obtaining throughout our country. In other words, it is more a question of input-output management and upgrading the quality of management on farms. The twin problems of concern in farm business management are: (*a*) the farmer's resource-mix and the levels of use in farming operations; and (*b*) what doses of resources the farmer needs for optimal farm operations under actual farmer's field conditions.

The paper suggests adapting the case method widely used in business organization for appreciable impact of the technology change in agriculture. We need to appraise the problem situation and focus attention on the objective and analyse the areas as diagrammatically illustrated in the paper. Integrated farm development requires diagnostic study of the case farm and the case farmer as per proforma for farm diagnostic case history presented in the paper. The key to success lies in providing constant technical supervision and on-the-farm counselling, and follow-up action by the subject matter specialists at various levels during the different phases of production of crop and animal growth periods and processes. The paper illustrates a few experimental cases. as examples from researches of the author and his associates. To conclude, recalling the message of the President of the All-India National Science Congress held at Waltair (1976), it is our role and function to hasten the development process of the agricultural sector so as to help farmers realise the benefits of the potential of new technology package through effective problem perception/identification based on diagnostic case histories and case studies of typical farm situations duly supported by continuing evaluation and follow-up for the furthering of on-farm development towards integrated development of agriculture. That implies continuing search to spotlight the strong and weak points of farm business management, and concurrent research and development towards this end, as also dissemination of new knowledge at the grass-root level.

APPLICATION OF AVAILABLE TECHNOLOGY IN AGRICULTURE— CASE STUDIES IN RECLAMATION OF SALINE ALKALI AND ALKALI LANDS AND CSH-5 HYBRID JOWAR SEED PRODUCTION

K. S. Suryanarayana and Syed Mahmood Ali*

In imparting training and education to farmers, case approach for problem formulation has been widely used. Farm planning and budgeting is being followed as an extension device, apart from its role as a research tool. As such it is of paramount importance that the missing link of extension economics is identified as a bridge between research and extension activity for the quick spread of yield increasing technology. Therefore, there is a need to collect case histories involving stories of successes and failures highlighting the problem for finding a solution. The paper incorporates two case studies of the farms situated in Panyam village of Nandyal taluk in Kurnool district of Andhra Pradesh, adopting the available service and technology methods to highlight the realisable potentials of reclamation of marginal lands and new HYV technology management in commercial seed production under typical farm situations. The first case study is concerned with the reclamation of saline alkali and alkali affected lands. The operational holding of the case farm with saline alkali and alkali lands constituted a typical problem situation not only in Kurnool district

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but also in large areas of the entire State. Cultivators of such lands are unable to reap economic harvest due to inherent mechanical and chemical faults in soil structure. Such alkali and saline alkali lands could be reclaimed through the application of available technology in agriculture under constant guidance and technical supervision so as to serve as result demonstration. This case farm was chosen in order to educate the farmer to apply the available technology for realising optimal returns. The main goal of the case farmer is to develop his farm as irrigated dry or garden land. In this connection he was advised to dig a well at an estimated cost of Rs. 30,000 and to provide for necessary accessories, so as to cultivate the farm land under conditions of irrigated dry land farming. In the first phase the farmer fixed up the oil engine and irrigated the land for cultivating crops like jowar, chillies and paddy. It resulted in poor germination and high seedling mortality and finally in heavy loss, not even recovering the seed cost. These farm production situations continue to prevail and the experience repeated in the successful years. This problem situation was located and identified during the year 1973 and the farmer was properly educated in solving the problem confronting his farm and was advised to adopt improved management practices for converting his sub-marginal farm lands into good cultivable land which could yield good profits at an estimated cost of Rs. 10,000 for reclamation purpose alone, and an equal amount for crop husbandry. The farmer followed the technical advice and adopted the technology with full confidence in the yield-increasing potential of the technology made available to him. As a result of the technology adopted by the case farmer, he was able to realise a net margin of Rs. 4,000 in the first year itself. In the subsequent years, the farmer followed the fertilizer practices only with good drainage condition for leaching of dissolved salts and cultivated remunerative commercial crops like cotton, wheat, tobacco, chillies, groundnut, etc. The yield potential of this case farm was found to be far higher during 1976-77, compared to the year of reclamation, resulting in an upward trend of the gross returns from this holding (from Rs. 835 per unit area during 1973-74 to Rs. 2,190 in 1976-77). In conclusion this case farm serves as an illustration of new technology management in an integrated manner through constant guidance and follow-up action both in the field and at the laboratories of the university.

The second case study dealt with CSH-5 hybrid jowar seed production by a small farm tenant cultivated holding. The case is of a progressive tenant farmer who has an urge for improving his economic status. He was motivated to take up hybrid seed production on a small-scale, and the requisite technical skills were provided. With the encouragement of another progressive farmer this case farmer took up multiple cropping during the year 1973-74. The gross margin obtained over cost by adopting the crop sequence was of the order of Rs. 7,100. During the second phase (1976-77), he was advised to replace wheat by taking up seed production of CSH-5 hybrid jowar. Accordingly, the tenant cultivator adopted the new technology and could reap an income of Rs. 8,810. Thus the extension service unit was among the first to successfully guide and educate the case farmer in the application of new technology in agriculture.

UTTAR PRADESH'S RURAL DEVELOPMENT IN 1980s

Abinash Chandra Chaturvedi†

We are passing through a challenging period in all-round development of our country where rural development has a crucial role. Water for irrigation, drinking, land improvement, modern tools in agricultural farming, preservation and storage of grain and fruits and cheaper forms of energy have to be provided. The paper examines the dimensions of the challenge and identifies alternative courses of action for orientation. Different methodologies are discussed with analysis and a number of recommendations made. The paper discusses some of the methods for improvement in the exploitation of technology, technology for effecting improvements in recovery and use and conservation. Larger scale surveys are recommended for marking the areas needing accelerated growth. That most technocrats do not succeed in making their expertise effective in command areas within the administrative set-up is undeniable. That such a situation provides a strong *prima facie* case for thorough going administrative reform is equally evident. Suggestions are made in this regard.

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STRATEGIES FOR INTEGRATED RURAL DEVELOPMENT—INVOLVEMENT OF INDUSTRIAL AND COMMERCIAL HOUSES: A PIONEERING ATTEMPT

A. Raghunandan*

The new accent on integrated rural development is an attempt at elevating the millions of rural poor from the milieu in which they toil to survive. Such an integrated programme not only aims at improving productivity but also at transforming the traditional village life through a scheme of activities fitting the rural life. The parameters of such a development strategy include resource planning, development of organizational infrastructure to implement the programmes, provision of training to develop skills and local leadership as also strengthening the financial base through tie-ups with banks to ensure the working capital and term loan requirements. The Agricultural Finance Corporation has been making concerted efforts to involve the industrial and commercial houses in this national effort of rural and agricultural development. Such a process calls for a change in the institutional set-up and social values and activities, which cannot be looked upon as the prerogative only of the Government. Various other agencies acting in combination with the active support of the Government could secure better results. Realising that the industries have a much wider role to play than that permitted by their business considerations, the Agricultural Finance Corporation initiated steps to bring together M/S. Murugappa and Sons, the Lead Bank of the district, the State Government and the local polytechnic to undertake an integrated rural development work in the Pallathur and Kothadi villages of Ramanathapuram district of Tamil Nadu. The Government of Tamil Nadu has assigned 218 acres of land to about 205 hitherto landless families. The area being primarily drought-prone, a suitable scheme to exploit the potential of the area had to be envisaged. The schemes to be implemented in the first phase include only those directly concerned with agricultural development. However, a comprehensive scheme has been suggested for implementation in the second phase so as to realise the goals of integrated development. The schemes, when implemented, would increase annual production to the tune of Rs. 14,52,160 benefiting 433 families with an annual net income of Rs. 5,82,000. Moreover, 85 new jobs would also be created. The Indian Overseas Bank would participate in this project by providing financial support of the order of Rs. 17 lakhs. The schemes cover a substantial number of families and reach out to the poorest among them although it is too early to say that the full potential for development has been reached. There are various difficulties in this direction but still greater scope for development exists.

STRATEGIES FOR INTEGRATED RURAL DEVELOPMENT IN ASSAM: PROBLEMS AND PROSPECTS

A. K. Neog and M. Barkataky†

The paper presents the crippling problems in Assam's rural economy and suggests various measures. The rural economy of Assam covering 91 per cent of its total population is stagnant even after 30 years of planning. The economy is agrarian, agriculture contributing 55 per cent of the State's income. The per capita income from the agricultural sector though increasing at current prices is falling at constant prices. While the rural per capita monthly income was Rs. 23.71 in 1970-71, the expenditure was Rs. 40.44. Poverty is widespread and about 78 per cent of the rural population is below the poverty line due to under-employment and unemployment which is estimated to be more than 11 lakhs and 15 lakhs respectively in 1971. Occupational distribution shows that the primary sector has increased over the decades, engaging 76.68 per cent of the total workers while the secondary sector has declined employing only 5.46 per cent. Though the tertiary sector is increasing mainly in the urban areas it is below the desired extent. Pressure on land has increased, land-man ratio being lower than the total average. The pattern of land holding is highly skewed, the top 20 per cent covering about 60 per cent of the total land. The problems of various rural classes are dissimilar. Employment prospects are decreasing in view of over-saturation of agriculture and stagnancy in secondary and tertiary sectors. Agricultural labourers form about 33 per cent of the total households, of which about four-fifths are casual agricultural labourers whose employment prospects are less than the attached labourers. They are employed mainly during the agricultural season and remain unemployed or under-employed during the slack season. The marginal and small farmers who constitute about 47 per cent of the total have similar problems. Their

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arm sizes are not viable and they are more under-employed than unemployed. Both depend heavily on leased-in land. Some studies show that the marginal farmers are more productive due to better supervision, management and fertilizer use. But all these classes are below the poverty line.

The paper suggests that rural agricultural and non-agricultural works should be reserved for rural labourers which should be so arranged and distributed that they provide continuous dependable employment over the year. The traditional artisans and craftsmen should be restored and rehabilitated. Assam has got tremendous employment potentiality in road construction, irrigation works, forestry, etc. Marginal and small farmers should be made viable through better land and labour technology producing more commercial and cash crops. They should supplement their income through earnings from animal husbandry, dairy, poultry, fishery, etc. The educated rural unemployed should open resource-based and demand-based industries with Government assistance. Big farmers should produce more marketable surplus by using intermediate technology and act as growth farms. They should generate externalities for the growth of agro-based industries to absorb some surplus manpower. It is suggested that the implementation of the rural programme should be through a Rural Guidance Centre by reorganizing the present community development blocks, which will integrate and co-ordinate institutions, farmers and land and monitor and evaluate their performances.

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