Vol XXX
No. 3

ISSN 0019-5014

CONFERENCE
NUMBER

JULY-
SEPTEMBER
1975

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS

INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

ROLE OF AGRICULTURAL SURPLUS IN FARM DEVELOPMENT

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SUMMARY

Agricultural surplus plays a crucial role in farm development in the developing countries. The present paper is based on a study undertaken in the Chingleput district of Tamil Nadu. Agricultural surplus is defined as the amount by which total agricultural output, valued at current prices exceeds the current consumption of agricultural population. The average area of the sample farms is 2.260 hectares and 4.085 hectares, respectively, for the irrigated, and irrigated and dry land farms. Out of the gross income of Rs. 8,071.88 and Rs. 11,769.80, a sum of Rs. 1,346.30 and Rs. 1,335.64 was spent to meet the consumption requirements of the agricultural workers of the family in the irrigated, and irrigated and dry land farms, respectively. The amount of agricultural surplus estimated is of the order of Rs. 6,725.58 per farm in the case of irrigated and Rs. 10,434.16 in the case of irrigated and dry land farms. Out of this surplus, more than 20 per cent is spent for meeting the consumption expendi' ire of the dependent members of the family. Twenty-eight farms out of the one hundred sample farms have reported agricultural surplus and the rest have deficit.

Functional analysis was carried out to find the relationship between the amount of agricultural surplus and the total agricultural output, consumption expenditures and investment expenditures. Another model was specified to explain the investment behaviour with reference to the agricultural surplus and total agricultural output. The analysis revealed that most of the farms need additional investment to augment their resource base and to improve the techniques of production, to increase the size of agricultural surplus. From the foregoing study, the following policy measures emerge : (*i*) need for national investment on research and development in agriculture, (*ii*) investment in human capital to build professional skills and labour productivity, and (*iii*) development of strategies to minimize the impact of risks and uncertainties.

MOBILIZATION OF RURAL SURPLUSES FOR DEVELOPMENT : PRODUCTION (OR TECHNOLOGICAL) SURPLUS AND SIZE OF FARMING

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SUMMARY

This paper makes an attempt to identify and measure production (or technological) surplus in agriculture in a dry farming zone which is particularly relevant in the context of increasing awareness of the available new technology particularly in the dry farming zones. The analysis is based on the data collected from a sample of 20 farmers in Hadagali taluka of Bellary district in Karnataka and relates to the 1971-72 crop year. As regards the background of the farmers, it may be mentioned that the percentage of literacy was quite high and all of them showed an increasing awareness of the new technology for dry farming zones. The gross cropped area of the selected farmers was 501.73 acres and the net area sown was 467.20 acres. The overall intensity of land use as reflected in the intensity of cropping was very low chiefly because of very low annual precipitation and lack of irrigation. However, the intensity of cropping in different size-groups differed considerably, the relatively smaller holdings showing a higher intensity. In regard to the cropping pattern it may be mentioned that *kharif* was the predominant agricultural season, the major *kharif* crops being jowar, groundnut and cotton. These three crops accounted for about 83 per cent of the gross cropped area. Further, cotton and groundnut are the only cash crops cultivated by the sample farms, the two claiming a little over 43 per cent of the gross cropped area. Further, nearly 70 per cent of the gross cropped area was under improved or hybrid varieties of crops. Coming to the input structure and cost of cultivation it was observed that for all farms together the largest single item of cost was human labour followed by bullock labour. It was interesting to find that nearly one-third of the cost of cultivation per acre was on fertilizers, manures and plant protection chemicals, which appears to be on the higher side for a dry farming region. As regards the structure of costs as between farms in different size-groups the cost incurred on manures, fertilizers, and plant protection chemicals showed an unmistakable tendency to decline, both in absolute and percentage terms, with an increase in acreage. The cost incurred on these

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factors declined from about 63 per cent in the holding group of below 5 acres to 30 per cent in the holding group of 35 acres and above. Further, the total cost per acre also showed a decline with an increase in acreage.

The gross value of output declined with an increase in the size of holding. While the overall value of gross output per acre was Rs. 209 over the size groups, it ranged from Rs. 717 in the size-group of below 5 acres to Rs. 137 in the size group of 10 to 20 acres. The net return per acre also showed a decline as farm size increased. While the overall cost-yield ratio was 1: 1.76, it was maximum in the size-group of below 5 acres giving Rs. 2.39 in terms of yield per rupee of cost incurred. Further, while the farmers had a favourable cost-yield ratio and net positive returns, this advantage seemed to decline with an increase in the farm size. Thus, it appeared from the analysis, though elementary at that level, that even in dry farming zones the adoption of new technology would result in production surpluses. This was more so in the case of the smaller holdings, where the adoption of the new technology is rather slow because of the uncertainties and risks involved. Proper orientation of the farmers in dry land farming coupled with adequate and timely supply of inputs appear to be the major factors leading to production surplus.

SURPLUSES PERTAINING SINCE THE GREEN REVOLUTION AND THEIR CONTRIBUTION TO INDUSTRIALISATION—A STUDY OF PUNJAB

M. L. Jhingan*

SUMMARY

This paper analyses (*i*) the extent to which surpluses accrued to the farmers of the Punjab by the adoption of the new agricultural strategy, and (*ii*) the extent to which these surpluses were mobilized and used for the industrialisation of the State. The agricultural surpluses were divided into real surpluses and financial surpluses. The former are expressed in physical terms and have two components, food and raw materials which are important as the industry's working capital. The latter are expressed in money terms and represent a command over resources which can be transferred to the industrial sector. The real surpluses were measured as a relation between production and marketed surplus in the case of wheat, maize, bajra, rice, cotton (*desi*) and cotton (American). The simple linear regression equation was fitted to the given data. The results obtained in the case of each crop were as follows: wheat,—9.2724+0.7422; maize, 2.6238+0.0204; bajra, —0.4398+0.7599; rice, —1.5051+1.1333; cotton (*desi*), 1.0693+0.0508 and cotton (American), —3.8635+0.6833. By applying the 't' test it was found that the increase in the marketed surplus of wheat, bajra and rice was significant, and for the other crops insignificant. The values of R^2 explained 63 to 1.07 per cent of the variations in the marketed surpluses of the crops which were statistically significant. The increases in labour use on the farm, in the real and money wages of agricultural workers and shifts in farm family incomes revealed that financial surpluses increased over the period 1967-68 to 1972-73.

To assess the extent to which these surpluses were used for the industrialisation of Punjab, five different criteria were used. (1) The demand for various farm inputs was measured in terms of their number/value, and it was found to have increased manifold. (2) The rural-urban commodity terms of trade were calculated which showed that relative prices tended to shift the income toward the agriculturists though in a declining trend from 1970 onwards. (3) The index numbers of parity between prices paid and prices received by the farmers showed unfavourable terms of trade for the farmers of the State from 1970-71 onwards. (4) The sectoral growth rates did not support these trends. The sectoral net State domestic income and the average annual growth rates at constant prices revealed a definite shift in favour of the primary and against the secondary sector. (5) Our hypothesis was tested in terms of the net flow of funds through the Government to agriculture and industry calculated from the State Budgets which reaffirmed our above findings that agriculture failed to become a net lender to industry in the Punjab. Thus the industrial sector could not take advantage of the rural surpluses generated by the green revolution in the State because of the lack of medium/large-scale industries manufacturing farm inputs and the inability of the Government to mobilize them through increased farm taxation. The obvious conclusion is that the rural surpluses being generated since 1967-68 have neither been mobilized nor utilized directly or indirectly to feed the Punjab's industrialisation.

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FARMERS' SAVINGS RESPONSE IN COASTAL ANDHRA REGION

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SUMMARY

The objective of this paper is to bring to light the type of investment in which the farmers of Coastal Andhra region (Andhra Pradesh) are interested and the motive behind their investment. In this region a fertilizer factory has been proposed to be started at Kakinada in East Godavari district to meet the heavy demand for fertilizers in this delta region. Prof. N. S. Iyengar has conducted a survey in the districts of East Godavari, West Godavari, Krishna and Visakhapatnam of Andhra Pradesh to study the farmers' savings potentiality in this region and their willingness to invest in the proposed fertilizer factory and motivation behind this investment. The two hypotheses which are of direct interest are (*a*) whether there is any association between the level of income of the farmer and his desire to invest his savings if there is going to be a big fertilizer factory in his region and (*b*) whether there is any positive association between the level of income and the motive behind his investment, *i.e.*, to earn a higher dividend and or to get more fertilizer at reduced rates as a share holder. It is observed that on an average 75.9 per cent of the sample farmers showed preference to invest if a fertilizer factory is established in their region. At low level of income, 72 per cent of the cultivators revealed their preference while about 90 per cent of the cultivators in the higher income group showed preference to invest their farm savings in the proposed fertilizer factory. Using the Chi-square criterion, it is found that there is no significant positive association between the level of income and investment preference for the proposed fertilizer factory. That is to say that the farmer would be willing to invest his savings if there will be a fertilizer factory irrespective of his income. This shows that the nature of demand for fertilizers is such that most of the farmers would like to become share holders in the fertilizer factory for one reason or the other irrespective of his income.

Thirty-one per cent of the sample farmers reported that their motive behind the investment was to get fertilizer more cheaply as subscribers, 6.2 per cent stated the motive as to get dividend and the remaining 62.8 per cent farmers have expressed both—to get a dividend and more fertilizer at low rate. In the lower income group, 75 per cent of the farmers expressed the motive of their investment in terms of getting more fertilizer at reduced rates as a share holder, and in the very high income group 88.9 per cent of the sample farmers expressed the view as not only to get fertilizer more cheaply but also to get dividend. And in any income group there were not more than 11 per cent of the sample cultivators who expressed the only motive as to get dividend. Chi-square test showed that there is significant association between the income of the farmer and motive behind the investment. That is the low income farmers prefer to invest their savings in the fertilizer factory for obtaining the fertilizer more cheaply and the rich cultivators not only want to get fertilizers more cheaply but also to earn a dividend. The above analysis indicates that in case a fertilizer factory is established either in the public or private sector, there will be a huge supply of investment from the agricultural surplus in the coastal Andhra districts. The cultivators of coastal Andhra in all the income groups appear to have realised the need for more fertilizer to increase farm incomes and showed preparedness to invest their surplus to further augment the fertilizer supply.

TECHNOLOGICAL AND INVESTIBLE SURPLUSES ON TENDUKHEDA FARMS, MADHYA PRADESH

B. L. Mishra, V. P. Shukla and D. K. Marothia†

SUMMARY

In a planned economy agriculture is expected to make a vital contribution to the growth of the economy by providing resources required for consumption outside agriculture. The contribution of the farm sector to the other sectors of the economy is in the form of farm surpluses. Two types of farm surpluses were identified and measured on Tendukheda farms of Damoh district, Madhya Pradesh. One, the technological surplus (or production) being the difference between total output and total input, and two, the investible surplus, being the difference between income and expenditure at the

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family level. These surpluses were identified in relation to the size of farms and level of farm technology. Tendukheda block was the most advanced block with respect to farm technology. Five most progressive villages and 96 farmers representing advanced and traditional technologies, subdivided into upper (above 10 acres) and lower size-(below 10 acres) groups were randomly selected in proportion to the number of farms falling in each category of farms. Survey method was used for collecting the data during the year 1973-74. Advanced farmers were defined as those having at least 25 per cent of the cultivated area under irrigation and were growing High-Yielding Varieties. Traditional farms were those which followed traditional ways and means of farming without irrigation.

The analysis of the data revealed that advanced farm technology was closely associated with the availability of irrigation. Advanced technology was both labour and capital intensive and resulted in higher yield rates. As regards the technological or production surplus on Tendukheda farms (from crops only), it ranged from Rs. 3,667 to Rs. 8,640 in the lower size farms having traditional and advanced technology respectively. Similarly, it varied from Rs. 9,098 to Rs. 26,344 on the upper size-group of farms depending upon the level of farm technology. On per acre basis, the production surplus on advanced farms was higher by 165 per cent and 107 per cent than those of the traditional farms in the lower and upper size-groups respectively. The investible surplus was negative by Rs. 448 in the case of traditional farms of lower size-groups, while it was Rs. 3,120 on advanced farms. The upper size-group of farms showed an investible surplus ranging from Rs. 2,545 to Rs. 19,458 on the traditional and advanced farms respectively. Assuming the present level of advanced technology for traditional farms of this area, the potential of raising production surpluses was 135 per cent and 189 per cent on the lower and upper size-groups respectively. These surpluses can be syphoned into the public sector through various saving devices and taxation measures.

TECHNOLOGICAL IMPACT AND SAVING POTENTIAL OF FARM FAMILIES (A STUDY OF RAI BARELI DISTRICT)

P. C. Shukla and B. K. Mishra*

SUMMARY

Agriculture is undergoing a process of technological transformation at least in relation to certain inputs and crops. But the factors like availability of irrigation, size of farm, financial position and tenurial and social status of farmers vary considerably within the economy. The new strategy in agriculture seems to have varying impact on income, production, and savings. Since capital and land are relatively scarce in relation to new technology any deliberate policy action may only increase the saving potential of the farmers. In the present paper, irrigated as well as unirrigated farms presented the problems of mobilization of saving but there are difficulties of developing suitable technique for augmenting saving or preventing unproductive use of saving. The real question is of mobilization of actual saving which is disguised in nature into effective saving. The direct method of mobilizing actual saving into effective saving from the majority of farmers by selective indirect taxes or by deficit financing may not be successful because their consumption being limited to home grown produce generally escapes from such measures. In the present agricultural situation when technological effect is visible on the farms, the scope for exploiting saving potential relating to a large number of small and medium farms is very limited.

INCOME DISTRIBUTION AND ITS DISPOSAL IN AGRICULTURE†

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SUMMARY

The present study embodies the results of an intensive enquiry conducted during 1966-67—1970-71 covering 140 farmers selected randomly according to the size-groups of 0-0, 1.5, 1.5-3.00, 3.00-4.5, 4.5-6 and 6 hectares and above from 5 villages of Dhanipur block in Aligarh district of Uttar Pradesh. The income and expenditure at the family level were analysed to work out the investible surplus and the pattern of investment in agriculture and net saving as available for mobilization. The analysis revealed that on an average crop production constituted 79.09 per cent of the total farm family income followed by income from wages and salaries (9.23 per cent), income from

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milk production and sale of livestock (5.12 per cent), income from hiring out implements and machinery, etc. (3.14 per cent) and income from land leased out (1.58 per cent). The annual income per farm family in the sample area from various components of income mentioned above on an average came to Rs. 7,252.49 which ranged from Rs. 1,492.66 on the smallest size-group of farms to Rs. 22,135.69 on the largest size-group, indicating a wide income gap between the small and large farmers. In the pattern of consumption expenditure, it was found that, on an average, the per family annual consumption expenditure on all goods and services amounted to Rs. 5,445.27 on the sample holdings. The consumption expenditure showed an increasing trend with the increase in the size of holdings and rose from Rs. 1,495.46 on the smallest size-group (0.0—1.5 hectare) to Rs. 13,526.48 on the largest size-group of farms (6.00 and above hectares). The percentage expenditure on food showed a decreasing trend with the increase in the size of farm while that of clothing, housing, fuel and light, health and education and miscellaneous showed a reverse trend. In the case of expenditure on food, it was seen that the consumption of cereals and pulses was relatively more on the smaller holdings while the consumption of protective foods like milk, ghee, fruits and vegetables, etc., was higher on the larger farms.

There was no saving or investible surplus on the lowest size-group of farms (0.0—1.5 hectare) as the consumption exceeded the income. On the other four size-groups, it was observed that the saving tended to rise with the increase in the farm size. It rose from Rs. 474.69 on the small size-group (1.5—3.00 hectares) to Rs. 8,609.21 on the largest size-group (6 hectares and above). Out of this saving or investible surplus, Rs. 524.06 (29 per cent) was ploughed back in agriculture and the rest Rs. 283 (71 per cent) remained as net saving or surplus from agriculture which can be mobilized on overall basis. Thus it can be concluded that the rate of saving or investible surplus is quite satisfactory but the absorption capacity of agriculture is limited. But however the same is not true in the case of very small and small size-groups (0.0—1.5 and 1.5—3.00 hectares). In the case of very small size-group there remained nothing after meeting the consumption requirement of the farmers (too at a very low level) for further investment in agriculture, although they invested about Rs. 97.53 through borrowed funds. In the case of the small size-group (1.5—3.00 hectares) the investible surplus was only 11.30 per cent of the total family earnings of Rs. 4,195.27 per annum. However, they ploughed back a major part of their investible surplus in agriculture, *i.e.*, 71.30 per cent of the total investible surplus. The investment capacity of this size-group was highest in comparison to their counterparts in the upper size-groups. The two middle size-groups (3.00—4.5 and 4.5—6.00 hectares) had an investible surplus of Rs. 627.48 and Rs. 894.01 which was 26.80 and 25.01 per cent of their total family income respectively. Out of this investible surplus the farmers in these two size-groups invested in agriculture about 25.33 per cent and 24.38 per cent respectively. In the highest size-group (6 hectares and above), the investible surplus constituted 38.84 per cent of the total earnings but the farmers in this size-group ploughed back in agriculture only 20.72 per cent of their investible surplus. What emerges from the above findings is that, leaving aside the two lowest size-group of farms whose income and consumption is at subsistence level, the investible surplus increases with the increase in the size of holdings but the plough back in agriculture decreases with the increase in the size of holdings. Thus there seems to exist a limit beyond which further investment in agriculture does not correspond with the increase in the availability of investible surplus. The policy implication is that a substantial amount of surplus is available with the upper strata of the farmers which can be mobilized for general economic development and, in return, it may possibly break the existing barrier and push further the process of development in agriculture.

STUDY OF LABOUR SURPLUS IN WEST GODAVARI DISTRICT

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SUMMARY

In Indian agriculture employment of farm labour is mostly seasonal and varies from region to region. Since the introduction of the concept of 'disguised unemployment,' various attempts have been made to measure the extent of surplus labour. One possible way of ascertaining the existence of surplus labour in the rural areas is to find out whether there are unemployed workers in the peak seasons of agriculture. In this paper an attempt is made to examine the labour surplus in West Godavari district in Andhra Pradesh. The data were collected from a random sample of 160 agricultural labourers of West Godavari district which was classified into delta and dry regions. Information about the days of employment was collected by personal interview in respect of each worker for peak periods of *kharif* and *rabi* seasons of the agricultural year 1970-71 for both the regions. Based on empirical evidence, it is concluded that labour is surplus in dry region and deficit in delta region. This conclusion supports that labour utilization is not uniform for different regions and seasons. In order to reduce the labour

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surplus in dry region, it is suggested that the availability of ground water in this region should be explored which in turn will help in propagating new technology which can absorb the existing surplus labour in the region. In areas faced with deficit labour, it is suggested that the techniques helping the farmers in adjusting their cropping pattern according to the availability of labour without losing any yield should be developed.

RURAL SURPLUS LABOUR : ITS EXTENT AND MOBILIZATION PROSPECTS

P. C. Shukla and R. P. Singh*

SUMMARY

Based on analysis of data collected from a sample of 126 households in Saidpur block in Ghazipur district of East Uttar Pradesh during the agricultural year 1973-74, an attempt is made in this paper to estimate the surplus rural labour and the prospects of its mobilization for rural development. Out of the total of 126 households selected for study, 15 were landless households, 77 were marginal farms, 19 were small farms and 15 were large farms. The total population in the selected households was 859 persons comprising 441 males and 418 females. Actual labour force accounted for about 54 per cent of the total population. The results of the analysis showed that in the absense of gainful employment opportunities outside agriculture an overt situation has emerged in the farm families of sub-marginal and marginal and agriculture labour households. As per our estimates 266 (64.75 per cent) workers out of 412 workers will remain unemployed if they are associated with cultivation only according to the full employment norm of 286 days in a year for all the samples. And if rural non-agricultural employment also is taken into consideration, only 154 (37.38 per cent) workers are found to be unemployed. This leads to the simple reasoning that in the rural sector non-agricultural employment opportunities must be given priority if anything has to be done for mobilizing surplus manpower from the rural sector. One of the very interesting points emerged about the concept of disguised unemployment at the farm level for all the sample households is that the supply (or actual employment) per worker according to full employment norm fell short of the demand for labour, though the magnitude of difference was only of 13 labourers or 12 days per worker. But the analysis according to different size-group of farms showed that the concept of disguised unemployment was more related to sub-marginal and marginal farms, *i.e.*, between 0 to 0.90 acre and 0.91 to 1.80 acres and the extent of disguised unemployment was to the extent of 43 days and 51 days respectively in the agricultural sector. Taking the norm of full employment days, which varied from 305 days to 290 days between the landless labour group and the large farms, the open unemployment was 145 days, 137 days, 119 days, 87 days and 49 days for the landless labour class, sub-marginal farms, marginal farms, small farms and large farms respectively. According to the employment of workers, the disguised unemployed workers were found to be 15 in the case of sub-marginal farms and 23 workers in the case of marginal farms. There was a deficiency of 56 workers in the case of big farms as compared to the demand and supply of workers in this particular group. The equilibrium of demand and supply (actual employment) of workers was reached only in the case small farms (2.51 to 5 acres). Since the problem of surplus labour was found more acute upto the farm size of 2.50 acres than on the small and large farms, a shift in the cropping pattern and crop rotation may create some additional employment in the rural economy in general but due to technological impact on mechanization of agricultural sector it may give only a first order approximation of the magnitude of increase in employment and the question of mobilizing surplus labour from the farms below 2.50 acres remains unsolved.

SURPLUS LABOUR IN WEST BENGAL'S AGRICULTURE — A NOTE

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SUMMARY

The paper seeks to measure surplus labour in 96 selected farms in the districts of 24 Parganas and Hooghly in West Bengal. Surplus labour is measured by the difference between labour supply and its utilization on farms. Since the quantum of woman and child labour cannot be readily determined from their number in the family in view of the intervening social, cultural, economic, familial and

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personal factors, the study is limited to the consideration of adult male labour only. The 'surplus' is not necessarily a measure of unemployment. It may be engaged in management jobs on the farms, may be employed outside farming, or may remain unemployed. Surplus may exist because of lack of opportunities on the farm, or, it may be deliberately generated to avail of more remunerative opportunities outside the farm. The supply of labour is calculated on the assumption that on an average a man in a farm family is available for work for 300 days a year. The consideration of relevant data reveals direct and statistically significant relationship between labour surplus and the size of farms. This relationship between the size of farm and the proportion of surplus labour may be explained by several factors : (1) number of adult male members per farm, (2) land available per man in the family, and (3) management earnings per head. The correspondence between surplus manpower and management earnings per head appears to be complete, the rank correlation coefficient between them being 1.

MOBILIZATION OF RURAL SURPLUS THROUGH AGRICULTURAL TAXES

M. C. Purohit†

SUMMARY

Surplus generated in the rural areas can be syphoned off through agricultural taxes. Presently it is being done at an extremely low level. The magnitude of the surplus being taken away by way of these taxes during last few years is the subject-matter which is important to note. This is all the more important if an attempt is made to have a Statewise study. This paper aims at presenting a study of land revenue, agricultural income-tax, surcharge on cash crops, purchase tax on sugarcane and cess on sugarcane for each State. It analyses the growth, composition, buoyancy, income elasticity and additional resource mobilization through all of the above taxes. The growth rate has been calculated through the relationship $Y = a\ b^t$; where $b = (1 + r)$. The buoyancy and income elasticity have been calculated through the relationship $Y = a\ X^b$. For calculating elasticity we have used two methods. The first method is the usual method which eliminates the effects of discretionary changes for one year alone. The second method eliminates cumulative effects for all the years. The reference period of the study is 1957-58 to 1970-71. The additional resource mobilization has however been studied upto 1974-75. The data for the study have been taken from the Budgetary documents of State Governments. This has been necessitated mainly because the Reserve Bank of India data are not comparable over the years.

The results of the study show that land revenue has made an unimportant and declining contribution. It has registered a fall in its share to States' own tax revenue in all the States except Assam. The decline in its share was greater in the case of Orissa and Jammu & Kashmir. Its per annum rate of growth was negative in Orissa, Tamil Nadu and West Bengal and 2 per cent in the case of Karnataka and Maharashtra. Agricultural income-tax is levied by seven States. Only Kerala has important contribution from this tax. The rest of the States have about 1-2 per cent of their States, own tax revenue by way of this tax. Other agricultural taxes, *viz.*, surcharge on cash crops, cess on sugarcane and purchase tax on sugarcane are not very important. Though the revenue has been increasing, its magnitude has not been substantial. Seven States do not impose either of these taxes. Surcharge on cash crops is levied in Haryana alone. Karnataka has abolished such taxes. Among the rest of the States, the yield is substantial in Maharashtra and Uttar Pradesh. In the former State the trend is increasing and in the latter State it is declining.

Buoyancy and income elasticity have been seen by the relationship of the type $Y = a\ X^b$, where X is State income, such relationship does not hold to be statistically significant in most States in the case of land revenue. In those States where it is significant, it turns out to be negative except for Gujarat where the value of the coefficient is 0.50. The results in the case of agricultural income-tax are better. In most cases they are significant at one per cent level. The buoyancy in the case of Karnataka is 1.43 and in the case of West Bengal it is 0.88. In Tamil Nadu it is 0.49. In the rest of the States it is unimportant or negative.

An analysis of additional resource mobilization through agricultural taxes shows that land revenue was being used uptil 1964-65, but has since then lost its importance. This has happened mainly under the political influence of the various vested interests. Similarly, agricultural income-tax has not been mobilized by any State with the sole exception of Kerala. Also, four States have attempted to

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raise resources through surcharge on cash crops. However, during the last three years some attempts have been made to mobilize additional resources through these taxes. Finally, all the existing taxes do not take away the increasing rural surplus. Also, this causes horizontal and vertical inequity in taxation. This must be done away with by way of Agricultural Holdings Tax or any progressive tax on the agricultural sector.

RESOURCE MOBILIZATION IN THE AGRICULTURAL SECTOR: TAX ON AGRICULTURAL INCOME — AN APPRAISAL

J. S. Garg

Assisted by

Usman Ali*

SUMMARY

Taxation on agricultural income is one of the most important measures for mopping up the surplus income in the rural areas, generated due to the agricultural development programmes sponsored by the Government. Information in the present paper is taken from a study entitled "An Appraisal of Modern Technology on Farm Investment, Capital Formation, Farm Productivity, Farm Income and Labour Employment," conducted by the Division of Agricultural Economics and Statistics, C. S. Azad University of Agriculture and Technology, Kanpur. The study covered 100 randomly selected farmers having 30 per cent or more area under the high-yielding varieties (HYV) classified according to different size-groups, *viz.*, 0-1, 1-2, 2-3, 3-4, 4 hectares and above from 10 villages of Kalyanpur block, Kanpur (U.P.) from 1967-68 to 1973-74—the post-period of HYV programme in the country. The presented data relate to an overall average of seven years (*i.e.*, 1967-68 to 1973-74) for the selected farmers. Briefly, the focus of the study is whether or not there is a case for income-tax on agricultural income in the country. If so, what should be the limit of exemption of agricultural income-tax in terms of acreage calculated on the basis of net income at different size of holdings. The findings of the paper relate to a specific situation in which the soil fertility is little above average. On an overall average, the size of holding, intensity of cropping, area under the HYV and area under irrigation were 2.43 hectares, 147 per cent, 46.71 per cent and 98.04 per cent respectively. Out of the total development expenditure, expenditure in the agricultural sector during Third Five-Year Plan was 26.7 per cent. In the first two Five-Year Plans it was 24 per cent and 18 per cent respectively. It resulted in increased production and income to the people, though it was partly due to the personal efforts of the farmers but largely due to the agricultural development programmes introduced by the Government, which generated additional output and additional income. Therefore, in order to justify the expenditure on rural development from the public fund, it is necessary that a portion of the additional income generated in the rural areas on account of agricultural development, must be paid in one form or the other to the Government for socio-economic welfare. The tax on agricultural income is one of the measures suggested for this purpose.

On an average, the yearly net income per farm varied from Rs. 835.99 on the size of holding upto one hectare to Rs. 8,342.25 on the farm size of four hectares and above. The per hectare annual net income on the farm size of 3.46 hectares (3-4 hectares size-group) came to Rs. 1,502.66 and on the size of holding of 4 hectares as a whole, the net income came to Rs. 6,010.64. According to current income-tax policy, in the non-agricultural sector, the exemption limit from income tax is Rs. 6,000 per annum. If the same limit is taken for the agricultural sector as well, the farmers upto the size of holding of 4 hectares should be exempted from agricultural income-tax. This level is justified from social as well as economic point of view. This exemption limit upto 4 hectares has its own limitations. However, this can be adjusted with the situation for this purpose. The exemption limit in the agricultural sector should be fixed on an area which provides an annual net income upto Rs. 6,000. As regards the rate of taxation on the size of farm above 4 hectares, the net income criterion should continue as it is in the case of the non-agricultural income-tax Since about 81.65 per cent of the farmers in the country have land holdings below 4 hectares, the agricultural income-tax should be assessed and levied only on 18.35 per cent of the farmers. Because the income-tax on agriculture, on the basis suggested above, is to be collected from a limited number of farmers, it is easy and simple, in the matter of assessment and has administrative and technical efficiency

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MOBILIZATION OF RURAL SURPLUSES IN A DEFICIT STATE

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SUMMARY

With regard to rural surpluses there is the problem of its location and mechanism for its mobilization. An attempt has been made in this study to estimate the investible and physical surpluses in an agriculturally progressive district of Himachal Pradesh. A sample of 98 farmers was drawn from 10 villages of 2 blocks (Bhawarna and Rait) of Kangra—a progressive district. The data for the year 1973-74 were collected by the survey method. On an average, per household disposable annual income (gross income netted over paid out cost) was estimated to be Rs. 1,620, Rs. 2,985, Rs. 3,342, Rs. 5,013 and Rs. 9,796 for the holding sizes upto 1, 1-2, 2-3, 3-4 and above 4 hectares respectively. On the large size of farms (above 4 hectares) non-agricultural income accounted for about one-half of the total income, while on the smaller size (upto 1 hectare) it has only one-third share in the total income.

The farmers with low holdings (say upto 2 hectares) were in fact on the margin of subsistence, however, a substantial portion of rural income was in the hands of farmers whose holdings were above 3 hectares.

As regards consumption expenditure, foodgrains accounted for more than 50 per cent of the total consumption expenditure; however its share declined with an increase in the size of holdings. On an average, per household total consumption expenditure was computed to be Rs. 2,081, Rs. 2,893, Rs. 3,581, Rs. 5,028 and Rs. 6,493 on the farm sizes upto 1, 1-2, 2-3, 3-4 and above 4 hectares respectively. Thus, savings were observed only on the farms with more than 4 hectares, that too of a substantial magnitude, *i.e.*, Rs. 3,303. The quantum of dis-savings varied from Rs. 462 (on the lowest size-group of farms) to a mere Rs. 15 on the farms between 3-4 hectares. Hence substantial capacity for capital contribution lies with the farmers holding more than 4 hectares in this progressive district of the State.

On the farms upto 1 hectare there was no physical (marketed/marketable) surpluses. The crops marketed in the area under study were paddy, wheat, maize and vegetable. In fact paddy was dominating the flow of goods from the rural to the urban, as the traded amount of other crops was not substantial, the quantum being merely in kilogrammes. Per household marketed quantity of paddy was 3.65, 5.86, 6.80 and 12 quintals on 1-2, 2-3, 3-4 and above 4 hectare size-groups of farms respectively.

Thus, there were practically no savings (investible surplus) on the farms upto 4 hectares even in the agriculturally progressive areas of Himachal Pradesh. Measures suggested to mop up whatever surpluses were existing include (*a*) rural deposit mobilization by financial institutions, (*b*) agricultural income-tax and (*c*) dedicated organizational and administrative efforts. All these will exert a combined pressure on the farmers to augment and part with the surpluses.

EXTENT OF SAVINGS IN PUNJAB WITH SPECIAL REFERENCE TO LUDHIANA DISTRICT

R. K. Sharma and S. C. Tewari†

SUMMARY

The objectives of the present study were (*i*) to determine the extent of savings at the existing and optimum level of technology in different farm situations and (*ii*) to investigate the relative allocation of surplus income within agriculture. The present study was undertaken in Ludhiana block of Ludhiana district. Two villages were randomly selected on the basis of probability proportional to the cultivated area. Twelve farmers from each village were selected randomly and stratified into small, medium and large farmers by cube-root cumulation frequency method. To get more homogeneous synthetic situation, the large farmer's category was further subdivided into two on the basis of use of farm power, *viz.*, (*i*) bullock operated and (*ii*) tractor operated. Four farm situations were

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analysed under two plans : (*i*) existing crop plan with existing level of technology and (*ii*) alternative plan with optimum level of technology. Budgeting technique was used to develop the alternative plan. The farm business analysis of all the farm situations indicated that through shifts in crop combinations and adoption of yield increasing technology, the returns of the fixed farm resources increased by 40.79, 59.58, 54.89 and 42.48 per cent on the small, medium, large bullock operated and large tractor operated farms over the existing plans respectively. The corresponding figures for gross savings were 21.89, 37.01, 21.68 and 16.40 per cent. Thus the study revealed that there was a substantial potential for increasing farm incomes and savings of all the categories of farms through the application of improved method of production, better resource use and better adjustments in the cropping patterns. The study shows that the farmers gave first preference for the purchase of land out of the anticipated additional income followed by the purchase of farm machinery and home consumption. The cultivators were interested in keeping their additional income with the banking institutions.

STUDY INTO THE QUANTIFICATION AND PROBLEMS OF MOBILIZING SURPLUS FARM LABOUR IN KANPUR DISTRICT, UTTAR PRADESH

Ram Iqbal Singh, R. Kunwar and Shri Ram†

SUMMARY

An attempt is made in this paper to quantify and to examine the problems of mobilizing surplus farm labour in Kanpur district. For the study 120 respondents comprising 30 landless labourers and 90 farmers were randomly selected from three types of areas based on level of development of agriculture, industries and means of transport and communication. The study was undertaken during the year 1974-75. From the study it was observed that in the developed area the surplus farm labour per adult worker in the size-group of 0-2, 2-4 and 4-6 and above hectares was worked out as 93.00, 33.6 and 37.00 days per annum* respectively. In this area the surplus for landless labour was 42.5 days/labour per annum. In the under-developed area the surplus family labour per adult worker per annum in the size-group 0-2, 2-4 and 4-6 and above hectares was observed as 138, 45 and 58 days respectively. In this area the surplus for landless labour was 82.80 days/labour per annum.

In the case of undeveloped area the surplus family labour per adult worker per annum in the size-group 0-2, 2-4 and 4-6 and above hectares was of the order of 190, 87 and 91 days respectively. In this area the surplus for landless labour was 97.0 days/labour per annum.

In the case of farmers the most important problem was input supply followed by lack of credit facilities on easy terms while in the case of landless labour the problems in regard to lack of training, lack of credit facilities on easy terms, social security, poor infrastructure and lack of alternative opportunities were important.

The percentage of respondents reporting all these problems excepting lack of training for handling modern farm equipments was lowest in the largest size-group, *i.e.*, 4-6 and above hectares in comparison to its counterparts. On the other hand, the percentage of respondents was highest in the lowest size-groups for all these problems. On the whole, the impact of level of development of agriculture, agro-based enterprises, dairying, alternative employment opportunities and means of transport and communication was inversely related with the quantum and problems of mobilizing surplus farm labour.

AN ENQUIRY INTO THE RELATION BETWEEN RESOURCES MADE AVAILABLE AND SURPLUSES GENERATED THROUGH FINANCING INSTITUTIONS IN SADAR BLOCK, BASTI DISTRICT, UTTAR PRADESH

J. P. Misra, Ram Iqbal Singh and G. N. Singh‡

SUMMARY

The present study is based on analysis of data collected from a sample of 100 cultivators' farms of five villages in block 'Sadar' in Basti district (Uttar Pradesh). All the selected cultivators were classified into three size-groups, *i.e.*, 0-2, 2-4 and 4 hectares and above. Three-stage stratified random sampling technique was used to select the block, villages and the cultivators. The number of cultiva-

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* Working days during the year were supposed to be equivalent to 315 days.

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tors under different size-groups was kept in proportion to their number in the universe of five villages. The study was conducted in the year 1970-71 and 1971-72. The main objectives of this paper were (*i*) to study the availability of farm resources through different financing institutions in relation to credit needs† of the farmers, (*ii*) to estimate the net surplus of the sample farms and the extent of capital formation on these farms, and (*iii*) to suggest the possibilities of mobilization of rural surpluses to the public sector. On an average, the credit needs for the sample borrowers came to Rs. 711.32 as short-term, Rs. 145.82 as medium-term and Rs.104.45 as long-term per farm. The short and medium-term credit needs showed an increasing trend with an increase in the size of farms while in the case of long-term credit, the medium size farms (2-4 hectares) have less need for it compared to the small and large farms. The Government, co-operative, Land Development Bank, commercial banks and money-lenders were the agencies for the supply of the needed credit resources. It was observed that, on an average, 27.85 per cent of the total credit needs were available from Government; 19.05 per cent from co-operatives; 14.59 per cent from the Land Development Bank; 17.87 per cent from the commercial banks and 6.01 per cent from the moneylenders and relatives. 14.72 per cent of the needed resources of the sample farms were not met from any source of financing institutions.

As a result of the availability of needed resources to the sample farmers by the financing institutions, the total income from all resources, on an average, worked out to Rs. 4,739.62 per farm family per annum. It varied from Rs. 1,251.73 on the smallest farm (0-2 hectares) to Rs. 11,595.78 on the largest one (4 and above hectares). The average family expenses on food, clothing, housing, fuel and light, health and education and miscellaneous items per farm family were worked out at Rs. 2,380.28. It varied from Rs. 1,087.43 on the small size farms (0-2 hectares) to Rs. 4,678.48 on the large size farms (4 and above hectares). After repayment of the loan during the study period, the smallest farm (0-2 hectares) was found to be in a deficit of Rs. 92.34 while a net saving of Rs. 1,600 on the medium farm (2-4 hectares) and Rs. 5,394.74 on the large farm (4 and above hectares) per annum was observed with an average of Rs. 1,749.59. The study clearly showed the economic depression of the small farms in the sample area.

Out of the surpluses generated in farming business of the sample farms, a part of the fund was invested in the private sector for capital formation which will help to increase the agricultural production. On an average, the gross capital formation per farm came to Rs. 602.39 which showed an increasing trend with an increase in the size of farms. The highest percentage of gross capital formation was on livestock (33.77 per cent) followed by irrigational structure (24.67 per cent), implements (15.47 per cent) and buildings and machinery (10.52 per cent and 9.06 per cent) respectively. The average net capital formation per farm was worked out at Rs. 523.91 which varied from Rs. 201.96 on the small farm to Rs. 1,085.27 on the large farm. It is suggested that the farmers in the medium size group and large size group should deposit their surplus funds (after deducting investible funds) with the banks which will be utilized in the public sector for development. Secondly, a part of the surplus of the large farmers should be mopped up by means of taxation for the development of the weaker sections and the country.

A STUDY OF DISPOSABLE INCOME AMONG THE FARMERS ADOPTING MODERN TECHNOLOGY IN KALYANPUR BLOCK, KANPUR DISTRICT (A CASE STUDY)

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SUMMARY

This paper is based on a small survey of 80 land holders who had adopted modern technology in agriculture. The study was conducted in 1973-74. The surplus income accrued and the resulting increase in the production of crops were studied in respect of holdings in the size-groups of 0-2, 2-4 and 4 hectares and above. The pattern of investment of the disposable income has been presented in the paper. The disposable income is estimated by taking the difference between gross income and production expenditure. The findings of the study revealed that the value of capital per hectare was Rs. 2,296, Rs. 2,269 and Rs. 2,213 in the holdings of below 2 hectares, between 2 to 4 hectares and 4 hectares and above respectively. The farmers in the size-group below 2 hectares supple-

† The difference between the value of recommended inputs and the value of inputs actually used was credit needs of the sample farms.

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mented their family earnings from the milk business by about 8 per cent. Similar was the case with the farmers in the size-group 4 hectares and above. The average total income per household in the three size-groups of holdings was Rs. 4,201, Rs. 11,095 and Rs. 22,061 respectively.

About 69 per cent, 57 per cent and 53 per cent of the disposable income was spent on family consumption in holdings below 2 hectares, 2-4 hectares and 4 hectares and above respectively. The investment on non-farm capital was about 8 per cent in each of the three size-groups of holdings. The repayment of institutional credit and of old debt was about 7 per cent, 11 per cent and 10 per cent in the holdings of 0-2, 2-4 and 4 hectares and above. Investment in saving, life insurance, gold and ornament, etc., was between 6 and 7 per cent in the three size-groups of holdings.

EXTENT OF CAPITAL FORMATION ON FARMS AS A RESULT OF HIGH-YIELDING VARIETIES PROGRAMME IN CENTRAL UTTAR PRADESH

J. S. Garg and V. Prasad*

SUMMARY

The adoption of modern technology by the farmers has resulted in surplus income on their farms. The surplus income so generated is disposed of partly in meeting the farm and family needs and partly is ploughed back on their farms in the form of capital assets. In order to examine the extent and pattern of capital formation as a result of the High-Yielding Varieties (HYV) programme and to examine the items on which the farmer preferred to invest, the present paper was prepared from the study entitled, "An appraisal of the modern technology on farm investment, capital formation, farm productivity, farm income and labour employment," undertaken in 1966-67, at Kalyanpur Block, Kanpur. The results presented in this paper cover the period of eight years and are the averages of 100 farms having at least 10 per cent area under the high-yielding varieties. The irrigated area, the area under high-yielding varieties and intensity of cropping were observed as the main pre-requisites for increased output and savings which in turn provided incentives for further investment on the farms. In 1966-67, the proportion of irrigated area to the cultivated area was 62.97 per cent, the proportion of area under the HYV to the total cropped area was 10.69 per cent and the intensity of cropping 123.59 per cent. It reached the level of 100 per cent, and the area under the HYV and intensity of cropping to 46 per cent and 152.50 per cent respectively in 1973-74. As a result of the increase in the irrigated area, area under the HYV of crops and intensity of cropping, there was a marked increase in the level of production, income and savings. In 1966-67, the gross capital formation was Rs. 91.50 per hectare which increased to Rs. 211.84 per hectare in 1973-74. Similarly, the net capital formation increased from Rs. 85.42 in 1966-67 to Rs. 193.03 per hectare in 1973-74. Thus the percentage increase in the gross and net capital formation in 1973-74 over 1966-67 worked out to 136.76 and 125.98 respectively. It was observed that the peak years of capital formation in this locality were from 1969-70 to 1972-73. Incidently, it was the same period when the percentage area under the HYV to the cropped area was also at the peak level.

So far as the pattern of capital formation is concerned, the largesti nvestment was on irrigation structure, followed by livestock and implements and machinery. The investment on land improvement and farm building was the lowest and nominal. The investment on irrigation structure showed a constant rising trend from Rs. 55.22 per hectare in 1966-67 to Rs. 116.36 per hectare in 1972-73. It stimulated the use of fertilizers, adoption of HYV and multiple cropping which had a cumulative effect on production. It was noted that the peak years of investment on irrigation corresponded with the peak years of capital formation during 1969-70 to 1972-73. In the case of livestock, the investment varied from Rs. 32.43 per hectare in 1966-67 to Rs. 56.94 per hectare in 1973-74. So far as the investment on implements and machinery is concerned, it abruptly increased from Rs. 1.38 per hectare in 1966-67 to Rs. 33.24 per hectare in 1969-70. It varied between Rs. 33.54 and Rs. 48.26 per hectare in 1970-71 and 1973-74, respectively. The rate of gross capital formation as a percentage of gross income showed an increase from 1969-70. It varied between 6.9 per cent and 7.82 per cent in 1969-70 and 1972-73. The percentage increase in gross capital formation to gross income during these years was associated with the increase in the percentage area under irrigation and the area under the HYV. The percentage of net capital formation to net income varied between 12.51 in 1967-68 and 18.55 in 1973-74.

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MOBILIZATION OF RURAL SURPLUS WITH REFERENCE TO CULTIVATING HOUSEHOLDS

Swarna Sadasivam*

SUMMARY

This paper examines the savings behaviour of small and big cultivators in Kota district of Rajasthan, Surat district of Gujarat and East Godavari district of Andhra Pradesh. The data are taken from the savings and investment reports of the Agro-Economic Research Centres at Vallabh Vidyanagar, Anand and Waltair (Andhra Pradesh) for the years 1969-70 and 1970-71. Except in the group of large farmers, negative savings appeared to be common, irrespective of the size of the operational area. The bulk of the positive savings came from the large farmers, showing a highly unequal distribution of savings. In Kota district, 100 per cent of the savings came from 11 per cent of the households; in East Godavari district, 89.23 per cent of the savings came from 3.3 per cent of the households; and in Surat district, the savings seemed to be more evenly distributed, 50.5 per cent of the households saving 58 per cent of the total positive savings. It is also observed that there is a positive relationship between institutional credit and the investment in physical assets. It appears that provision of institutional credit leads to more investment in physical assets by the big cultivators.

* Madras-8.