



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

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

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

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

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

Vol XLVI
No. 4

ISSN 0019-5014

OCTOBER-
DECEMBER
1991

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

RESEARCH NOTES

Tenancy and Resource Allocation: A Review with Fresh Data

There has been a long-standing debate on the relative advantage or efficacy of various land tenure arrangements. In particular, the debate has centred around the efficacy of the system of crop-sharing tenancy vis-a-vis the system of ownership cultivation and/or fixed rent tenancy. On the theoretical plane, the traditional (Marshallian) view postulated crop-sharing tenancy as inefficient owing to the share tenant's application of less variable inputs on his tenanted land, which results in lower output per unit of land. The opposite (modern or Cheungian) view is that under a situation where the landlord can stipulate the tenant's effort on rented land, productive efficiency prevails so that marginal products of factors of production are equated across lands that are owned or rented, whether on crop-sharing or fixed rent basis. The debate is, however, inconclusive as yet.¹ Even the empirical studies conducted to test the pattern of resource allocation and productivity level under crop-sharing tenancy do not help much to form a generalised opinion on the subject.² As a matter of fact, most of the empirical studies suffer from inadequate data base and/or adopt improper methodology and hence cannot be relied upon. The present paper while delineating some major methodological drawbacks which plague the past studies on the subject, looks afresh on the patterns of resource allocation under alternative tenancy arrangements (*e.g.*, share-cropping and fixed rent contracts). The relevant data have been collected through a field survey conducted among 224 tenant households in 12 villages in the district of Midnapore in West Bengal during the agricultural year July 1986 to June 1987.³

The paper is arranged as follows: in Section I some methodological deficiencies of past empirical studies have been identified. The analytical framework followed in the present study is discussed in Section II while Section III presents test results concerning resource allocation patterns and productivity level under alternative tenurial system in the survey region. The final section provides the conclusion of the study.

I

THE METHODOLOGICAL DRAWBACKS

A close look into the arguments of Marshall and Cheung concerning resource use efficiency under crop-sharing tenancy reflects that one of the fundamental ways in which the latter differs from the former is that Cheung clearly recognises the role of landlord's monitoring/supervision as a corrective towards tenancy inefficiency (see Cheung, 1969, Chapter II). The main spirit of Cheung's argument has been that with the landlord showing active interest not only in stipulating and enforcing the required level of effort but also actively participating in decision-making as also in cost-sharing, agricultural operations become a joint venture between him and the tenant. It is this kind of arrangement which might lead to the removal of inefficiency under tenant cultivation, if any. Unfortunately, most of the empirical studies supporting Cheung's equal-efficiency argument while being preoccupied with the comparison of per acre inputs use and productivity level under alternative cultivation forms, do not spell out clearly the mechanism which makes the establishment of equal-efficiency in actual situation: is it because of contract enforcement of the landlord or landlord's committed supervision or cost-sharing? One way of ascertaining

the contributory roles, if any, of these factors in removing the inefficiency of tenant cultivation is to compare the cases where the landlord monitors the process of cultivation (through input stipulation, supervision, cost-sharing and such like instruments) with the non-monitoring cases. To the extent that most of the researchers do not separate out between these varying cases, their studies do not strictly provide appropriate framework for testing of Cheung's hypothesis.⁴

Further, one encounters some ambiguity in the definition of categories such as 'owners' and 'tenants'. While some scholars include in the category of tenants all those who are leasing in land irrespective of whether they also possess some land of their own (see, *e.g.*, Rao, 1971, p. 588), others construct an index representing the proportion of leased-in area to the total cultivated area so as to determine the status of the households in the rural economy (see Chakravarty and Rudra, 1973). This latter procedure actually ends with groupings of the class of mixed tenants (*i.e.*, owner-cum-tenants) into 'owners' and 'sharecroppers'. Consequently, the studies based on such a procedure cannot be relied upon as true testing of the inefficiency of tenant cultivation.⁵

Another important drawback with many empirical studies is that they are content with comparison of resource use of the pure owners and the tenants.⁶ The fact remains that the category of tenants does not constitute a homogeneous class and there could be differences even among themselves depending upon the form of tenancy (such as sharecropping tenant, fixed rent tenant and so on). Although some of these studies relate to the regions dominated by crop-sharing tenancy, their analyses are nonetheless inadequate if one is interested in looking into the comparative behaviour of alternative tenancy arrangements (Shaban, 1987, p. 913).

There is also the problem associated with aggregation of various crops cultivated on a given plot of land. While examining differences in inputs use and productivity level between owner operated and tenant operated farms, most of the studies remain confined to comparison of their performances in crop production (*i.e.*, considering all crops cultivated on a given plot together). This is inappropriate in so far as it fails to explain whether observed differences in resource use and productivity between owned and tenanted lands are owing to differences in cropping pattern or due to disincentive effect of tenant cultivation. In the general case, owned land being available for cultivation round the year might induce cultivation of high value commercial crops (which also require higher doses of labour and non-labour inputs) in a greater scale as compared to tenanted lands cultivated on seasonal basis or confined to traditional cropping system. Under these circumstances, a comparison of performances of owners and tenants in crop production would almost invariably depict the former as more efficient.

The other problem relates to the selection of an appropriate statistical procedure for testing the significance of differences in performance under alternative cultivation forms. A large number of studies employed Fisher's t-test to examine the significance of difference in input utilisation and productivity level between the owners and the tenants. As is well-known, this test is fairly robust for comparison of mean values for two samples if the underlying distribution in two samples are normal and there is common within-sample variance. Even with population distributions not being too close to normal, the test could still work satisfactorily, provided the sample sizes are large (about 20 or more) (Manly, 1986, p. 27). The problem of unequal within-sample variance is also not too serious, provided

the ratio of true variances is within the limits of 0.4 and 2.5.⁷ However, the greatest problem with most of the empirical studies using this test procedure is that they suffer from inadequate sample size.⁸

There have also been some attempts to test the differences in performance of the same household on its owned and tenanted portions of land (see, *e.g.*, Bell, 1977; Nabi, 1986). Testing the performance of the same individual across his owned and tenanted plots provides powerful testing of tenancy inefficiency, if any. However, even the studies relying on this procedure very often suffer from data limitations.⁹

II

THE ANALYTICAL FRAMEWORK

Having noted the main problems associated with past empirical studies on the issue of efficiency of tenant cultivation, we can now set out our own framework for testing the same in our study region. It needs to be underlined here that our sample actually consisted of two categories of tenant households - recorded and unrecorded. The recorded tenants are the participants in the programme of 'Operation Barga' as has been launched in recent years in West Bengal.¹⁰ These tenants enjoy legal protection against enhancement of rent and illegal eviction by their landlords and also obtain precedence in the distribution of institutional finance. No such facilities are available to the unrecorded tenants and they, therefore, resemble more the 'traditional' system of tenancy. One common feature of both the categories of tenants in our survey region, however, is that they constitute a fairly broad mixture of owner-cum-tenants (*i.e.*, the incidence of pure tenants has been very low).¹¹ Thus, in order to avoid confusion arising out of definition of tenants as also to provide robustness to the test of efficiency under tenant cultivation, we have straightaway compared the performance of the owner-cum-tenant households between their owned and tenanted portions of land. The discussion is carried out separately for the two groups of tenants - recorded and unrecorded.

The other distinguishing feature of our survey region has been that the incidence of sharing in the cost of cultivation has not been very high among the landlords of all categories of tenants and all decisions concerning production are taken by the tenants themselves (for details, see Bhaumik, 1989, Chapter VII). Further, there is no evidence of landlords making stipulations of inputs for the rented lands. In other words, the situation resembles one of ineffective monitoring. Under this situation, any evidence of inefficiency of tenant cultivation could be related to 'pure disincentive effect' on the tenant households emanating from lack of their ownership rights.

Thirdly, thanks to a fairly wide number of situations available in our sample data, we make a distinction between crop-sharing and fixed rent contracts in order to bring into focus the performances of households under alternative tenancy arrangements. Further, although *aman* (*kharif*) paddy and the newly emerging *boro* (summer) paddy crops dominate the cropping pattern in our study region, the analysis is carried out at the disaggregated level for individual crops as well as for all crops taken together.¹²

Since our data set allows us to test the differences in resource allocation and productivity level by the same households among their various plots of land (owned, share-cropped and so on), we can do the same by using Paired-t test. To the extent that the performance of an owner-cum-tenant on his sharecropped/fixed rented plot is not independent of that on his

owned plot (in other words, two samples representing performances on owned plots and sharecropped/ fixed rented plots are not completely independent), Paired-t offers a suitable procedure for testing if the households actually discriminate between various plots under their cultivation.¹³ This test has an added advantage that with the number of observations between two samples being equal, it becomes more robust as a procedure for testing the differences in means between two samples.

The differences in the performance of the households across various plots of land are examined by considering data on four important variables: (i) material inputs per acre (Rs.); (ii) bullock labour per acre (pair-days); (iii) human labour per acre (man-days); and (iv) output per acre (Rs.). The main objective is to see whether the performance of the households (as represented by these four variables) differs between their owned and sharecropped/fixed rented plots.¹⁴

III

THE RESULTS

Owned versus Sharecropped Plots

We first examine the differences in economic performance between owned and sharecropped plots of the owner-cum-tenant households in our study region. This would enable us to form an idea about the difference that crop-sharing tenancy makes on resource use and productivity levels. The analysis is carried out chronologically for the traditional crop *aman* paddy, newly emerging crop *boro* paddy, cash crops (comprising jute, potato and sugarcane) and finally for all crops taken together.

It is observed from Table I that in respect of the traditional crop *aman* paddy, the unrecorded tenants use more of material inputs and human labour on their owned plots compared with what they do on the sharecropped plots. They also come up with higher per acre output on the former plots of land. All these differences are found to be statistically significant. The situation for the recorded tenants is somewhat similar to what is observed for the unrecorded tenants. It clearly emerges from Table I that the recorded tenants use greater amount of all inputs and obtain higher productivity level for *aman* paddy on owned plots compared with their sharecropped plots. The differences in resource use and productivity level are all statistically significant.

What appears to be true is that both the categories of tenants tend to use higher doses of inputs and are benefited by higher productivity level from their owned plots compared with the sharecropped plots in the case of traditional crop *aman* paddy. To the extent that the differences in input utilisation and productivity level between these plots of land turn out to be significant in most of the cases, the system of ownership cultivation may be viewed more efficient in terms of resource allocation vis-a-vis the system of crop-sharing for the traditional crop *aman* paddy.

Let us now turn to the newly emerging crop *boro* paddy. It appears that the unrecorded tenants maintain a superior performance on their owned plots even for this newly emerging crop. As is clear from Table I, utilisation of all inputs and productivity level are significantly higher on owned plots of the unrecorded tenants compared with their sharecropped plots.

The situation is, however, a bit different for the recorded tenants. Table I shows that there exists no significant difference in respect of utilisation of inputs and productivity level between their owned and sharecropped plots for *boro* paddy.

TABLE I. COMPARISON OF ECONOMIC PERFORMANCE ON OWNED PLOTS (x_1) VERSUS SHARECROPPED PLOTS (x_2)

Crop (1)	Performance criterion (2)	Unrecorded tenants			Recorded tenants		
		\bar{x}_1 (3)	\bar{x}_2 (4)	t-value (5)	\bar{x}_1 (6)	\bar{x}_2 (7)	t-value (8)
<i>Aman</i> paddy ($n_1=60$ $n_2=65$)	M	449.18	240.62	2.23**	337.19	267.00	4.05*
	B	12.20	12.30	-0.14	14.35	13.53	1.68**
	H	83.49	62.14	2.42*	71.85	66.90	1.56***
	O	2,449.10	1,864.27	1.89**	2,074.54	1,934.98	1.30***
<i>Boro</i> paddy ($n_1=58$ $n_2=27$)	M	764.93	742.84	1.58***	729.87	699.79	1.04
	B	10.90	10.00	1.75**	13.57	14.43	-0.83
	H	119.76	114.57	1.96**	109.04	111.82	-0.88
	O	3,407.87	3,092.64	3.65*	3,365.94	3,324.83	0.24
Jute ($n_1=16$ $n_2=10$)	M	176.88	158.48	0.72	203.28	270.28	-1.41***
	B	10.81	10.58	0.54	14.17	13.63	0.40
	H	105.86	105.91	-0.01	110.12	100.76	1.25
	O	1,944.78	2,002.81	-0.37	1,369.68	1,449.00	-0.47
Potato ($n_1=9$ $n_2=2$)	M	3,505.46	3,514.40	-0.27	2,958.75	2,910.00	1.35
	B	16.23	18.36	-1.49***	15.00	12.92	1.41
	H	84.77	80.46	1.85**	83.75	80.42	5.66***
	O	8,148.15	7,535.56	1.08	7,600.00	8,012.50	-1.41
Sugarcane ($n_1=7$ $n_2=4$)	M	961.13	922.33	0.53	438.16	350.74	-1.17
	B	13.95	12.81	0.51	7.19	10.53	-2.05***
	H	238.29	252.20	-0.38	244.36	239.56	0.09
	O	5,255.62	6,952.26	-1.41	4,020.15	4,072.19	-0.11
All crops ($n_1=112$ $n_2=83$)	M	688.02	579.68	1.99**	566.63	453.56	3.85*
	B	11.83	11.29	1.33***	13.74	13.31	1.04
	H	109.16	100.44	2.06**	101.12	85.80	1.80**
	O	3,209.87	2,853.97	1.79**	2,657.23	2,438.74	2.16**

Notes:- M = Material inputs per acre (Rs.); B= Bullock labour per acre (in pair-days); H = Human labour per acre (in man-days); O= Output per acre (Rs.).

n_1 and n_2 denote number of pairs for unrecorded and recorded tenants respectively.

*, ** and *** imply significance at 1, 5 and 10 per cent level respectively.

Comparison of the two groups of tenants reveals that even for the newly emerging crop *boro* paddy, while the unrecorded tenants continue to depict a superior performance (measured through resource use pattern and productivity level) on their owned plots vis-a-vis sharecropped plots, the recorded tenants do not discriminate much between these alternative plots under cultivation.

The pattern of resource allocation and productivity level under these alternative plots of land for some cash crops of our study region are also shown in Table I. Here, we consider three major commercial crops, viz., jute, potato and sugarcane. The main point that emerges from the table is that there is no systematic and significant difference as regards utilisation

of inputs and productivity level between the owned and sharecropped plots of the tenant households (both unrecorded and recorded) for such crops. It is, however, to be admitted that the testing of difference in performance between these alternative plots of land is carried out with fewer observations and need not be considered as definitive as in the case of *aman* and *boro* paddy.¹⁵

We are now ready to look into the economic performance of the two groups of tenants on their owned and sharecropped lands considering all crops together. Table I shows that the unrecorded tenants report significantly higher utilisation of all inputs as well as productivity level on their owned plots compared with the sharecropped plots. The situation is somewhat similar with the recorded tenants so that per acre utilisation of all inputs (except bullock labour) as well as productivity level turn out to be significantly higher on their owned plots in respect of the total for all crops.¹⁶

Owned versus Fixed Rented Plots

We now compare the performance of tenant households over their owned and fixed rented plots. We adopt similar procedure and consider the same set of performance variables as were done earlier for comparing the relative efficiency of cultivating owned versus sharecropped plots. Since fixed rent tenancy is confined largely to the cultivation of *boro* paddy, for crop-level analysis, we concentrate our attention on this crop only. Of course, the comparison is extended at the level of total crop output also.

Table II presents test results concerning the differences in the performance on owned plots and fixed rented plots for the two categories of tenants. It clearly emerges from the table that, contrary to the case with crop-sharing contracts, the performance of the households under fixed rented plots does not differ significantly from that on their owned plots. This is true of both categories of tenants (unrecorded and recorded) cultivating *boro* paddy under fixed rent contracts. Even for all crops (under fixed rent tenancy) taken together, there is no clear evidence of households discriminating between their owned and fixed rented lands. The intensity of resource use as well as productivity level appears to be invariant between owned and fixed rented plots.

TABLE II. COMPARISON OF ECONOMIC PERFORMANCE ON OWNED PLOTS (x_1) VERSUS FIXED PLOTS (x_2)

Crop	Performance criterion	Unrecorded tenants			Recorded tenants		
		\bar{x}_1	\bar{x}_2	t-value	\bar{x}_1	\bar{x}_2	t-value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Boro</i>	M	825.72	804.56	1.25	674.10	630.93	0.58
<i>Paddy</i>	B	8.92	9.48	-0.67	11.86	10.85	1.83***
($n_1 = 22$)	H	98.43	96.13	0.94	96.93	102.01	-2.34**
($n_2 = 5$)	O	3,816.77	3,619.07	1.25	3,110.18	3,119.94	-0.18
All crops	M	1,155.78	1,090.15	0.41	513.62	683.62	-0.83
	B	11.15	9.30	1.19	12.96	11.80	0.80
($n_1 = 34$)	H	125.08	141.52	-0.80	99.57	103.49	-0.21
($n_2 = 11$)	O	5,155.31	4,970.50	0.31	2,944.05	3,123.71	-0.29

Notes:- As in Table I.

IV

CONCLUSION

On the whole, there seems to be a tendency on the part of the tenant households to apply greater quantum of inputs per acre and gain better productivity level on the owned land compared with sharecropped portions of land. This signifies misallocative behaviour of crop-sharing tenancy vis-a-vis the system of ownership cultivation. Such a situation emerges, in our survey region, under the presence of ineffective monitoring of tenants' activities by the landlords (the Marshallian regime). No significant difference in economic performance, however, exists between owned and fixed rented plots of the tenant households.

Sankar Kumar Bhaumik*

Received November 1990. Revision accepted July 1991.

NOTES

1. For reviews of the debate on the theoretical plane, see Johnson (1950), Cheung (1969), Quibria and Rashid (1984) and Jaynes (1984).

2. It may be noted that while the studies such as Bell (1977), Chattopadhyay (1979), Bagi (1981) and Shaban (1987) provide empirical support to Marshallian inefficiency argument, the same has been contradicted by Vyas (1970), Rao (1971), Chakravarty and Rudra (1973), Dwivedi and Rudra (1973), Bliss and Stern (1982) and Nabi (1986).

3. For details about sample design and the villages surveyed, see Bhaumik (1989, Chapter V).

4. One recent exception in this context is the study conducted by Nabi in ten villages in Khanewal sub-division of Pakistan's Punjab. He shows how cost-sharing and direct supervision of landlords ensure efficiency in resource allocation under sharecropping. However, to put the record straight, even his study does not satisfactorily provide for direct comparison between cost-sharing and non-cost-sharing or landlord supervision and non-supervision cases so as to bring out the impact of these factors on resource use efficiency of the tenants. See Nabi (1986).

5. Commenting upon such a procedure of classification of the households, Shaban writes: "(with this procedure) it is not difficult to generate data that are consistent with the Marshallian specification of labour allocation and at the same time would justify the conclusions of these studies that 'owners' and 'sharecroppers' have similar inputs and outputs per unit area." See Shaban (1987, p. 914), emphasis added.

6. Some of the studies to suffer from this limitation are Chakravarty and Rudra (1973), Dwivedi and Rudra (1973) and Chattopadhyay (1979).

7. See Manly (1986). In order to tackle the problem of unequal within-sample variances, Dwivedi and Rudra make some adjustment to computed t-values by using a test procedure due to Cochran. See Dwivedi and Rudra (1973, p. 1293).

8. The studies to suffer from severe inadequacy of sample size are Chakravarty and Rudra (1973), Dwivedi and Rudra (1973) and Nabi (1986).

9. The studies using this procedure but which suffer from inadequate sample size are Dwivedi and Rudra (1973) and Nabi (1986).

10. For details about this programme, refer to Ghosh (1981).

11. Out of 103 recorded tenants covered in the field survey, 100 of them fall in the category of owner-cum-tenants while 119 out of 121 unrecorded tenants belong to the same category.

12. One could also be interested to know whether the differences in other characteristics such as location, soil type, etc., also contribute towards differences in the utilisation of inputs and productivity level between the owned plots and tenanted plots. Owing to non-availability of appropriate data on such characteristics, however, we could not extend our analysis along this line.

13. The formula for Paired-t test is given by:

$$t = \frac{(\bar{x}_1 - \bar{x}_2)\sqrt{n}}{\text{S.D. of } (x_1 - x_2)}$$

*Senior Lecturer, Department of Economics with Rural Development, Vidyasagar University, Midnapore, West Bengal.

The author is grateful to G.K. Chadha for his valuable comments on an earlier draft and also to an anonymous referee of this Journal for suggesting some improvements in the paper.

with $n-1$ degree of freedom where \bar{x}_i and \bar{x}_j are mean values for two samples x_i and x_j ($i, j = 1, 2, \dots, n$).

14. It may be noted that some scholars (see, for example, Bagi, 1981) have also attempted to judge the allocative efficiency of the alternative tenancy arrangements by applying the neo-classical production function technique. The difficulties of such a procedure are, however, very well documented (see, in this context, Bharadwaj, 1980; Junankar, 1989). The present paper is confined only towards examination of the differences in economic performance (as revealed by some important performance variables) of the class of owner-cum-tenants between their owned and leased-in plots of land. This, in conformity with the objectives of the paper, provides some idea about the impact that tenancy makes on allocation/utilisation of resources and productivity level in the study region.

15. This is mainly because crop-sharing tenancy has been largely confined to the cultivation of *aman* paddy and *boro* paddy in our study region. Moreover, we have considered only those cases where we could form pair of observations between owned and sharecropped plots.

16. This finding raises an important question: why the tenants in our study region continue to discriminate against their sharecropped lands in the matter of resource allocation even after recording their names under 'Operation Barga' programme. In this context, it might be argued that giving some legal protection to the recorded tenants against rent enhancement and eviction by the landlords is really not equivalent to conferring upon them the right of ownership on the same land (which would have come through implementation of the policy of 'land to the tiller'). This being so, there could still be disincentive associated with the former so that the tenants might place their owned plots high in order of preference vis-a-vis sharecropped plots in the matter of allocation of resources even after recording. To put it differently, recording of names by the tenants may not necessarily remove the total inefficiency of resource allocation (this is particularly true for the class of owner-cum-tenants) which flows from the very nature of crop-sharing arrangement, i.e., where every gain in production owing to additional effort by the tenant automatically gets chipped off with the landlord in the proportion contracted upon. Hence the continuance of preference for the owned plots vis-a-vis sharecropped plots in the matter of allocation of resources by the tenants even after recording their names.

REFERENCES

- Bagi, F.S. (1981). "Economics of Sharecropping in Haryana (India) Agriculture", *Pakistan Development Review*, Vol. 20, No. 1, Spring.
- Bell, Clive (1977). "Alternative Theories of Sharecropping: Some Tests Using Evidence from Northeast India", *Journal of Development Studies*, Vol. 13, No. 4, July.
- Bharadwaj, Krishna (1980). *On Some Issues of Methods in the Analysis of Social Change*, University of Mysore, Mysore.
- Bhaumik, Sankar Kumar (1989). *Systems of Land Tenure, Allocative Efficiency and Agrarian Development: A Study of Agriculture in West Bengal*, Ph.D Dissertation, School of Social Sciences, Jawaharlal Nehru University, New Delhi (unpublished).
- Bliss, C.J. and N.H. Stern (1982). *Palampur: The Economy of an Indian Village*, Oxford University Press, Delhi.
- Chakravarty, Aparajita and Ashok Rudra (1973). "Economic Effects of Tenancy: Some Negative Results", *Economic and Political Weekly*, Vol. 8, No. 28, July 14.
- Chattopadhyay, Manabendu (1979). "Relative Efficiency of Owner and Tenant Cultivation: A Case Study", *Economic and Political Weekly*, Vol. 14, No. 39, September 29.
- Cheung, Steven N.S. (1969). *The Theory of Share Tenancy*, University of Chicago Press, Chicago.
- Dwivedi, Harendranath and Ashok Rudra (1973). "Economic Effects of Tenancy: Some Further Negative Results", *Economic and Political Weekly*, Vol. 18, No. 29, July 21.
- Ghosh, Ratan (1981). "Agrarian Programme of Left Front Government", *Economic and Political Weekly*, Vol. 16, Nos. 25 and 26, June 20-27.
- Jaynes, Gerald D. (1984). "Economic Theory and Land Tenure", in Hans P. Binswanger and Mark R. Rosenzweig (Eds.) (1984). *Contractual Arrangements, Employment and Wages in Rural Labour Markets in Asia*, Yale University Press, New Haven.
- Johnson, D. Gale (1950). "Resource Allocation Under Share Contracts", *Journal of Political Economy*, Vol. 58, No. 2, April.
- Junankar, P.N. (1989). "The Response of Peasant Farmers to Price Incentives: The Use and Misuse of Profit Functions", *Journal of Development Studies*, Vol. 25, No. 2, January.
- Manly, Bryan F.J. (1986). *Multivariate Statistical Methods*, Chapman and Hall, London.
- Nabi, Izaz (1986). "Contracts, Resource Use and Productivity in Sharecropping", *Journal of Development Studies*, Vol. 22, No. 2, January.
- Quibria, M.G. and Salim Rashid (1984). "The Puzzle of Sharecropping: A Survey of Theories", *World Development*, Vol. 12, No. 2.
- Rao, C.H. Hanumantha (1971). "Uncertainty, Entrepreneurship and Sharecropping in India", *Journal of Political Economy*, Vol. 79, No. 3, May.
- Shaban, Radwan Ali (1987). "Testing between Competing Models of Sharecropping", *Journal of Political Economy*, Vol. 95, No. 5, October.
- Vyas, V.S. (1970). "Tenancy in a Dynamic Setting", *Economic and Political Weekly*, Vol. 5, No. 26, June 27.