



**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](mailto: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 XX  
No. 1

ISSN 0019-5014

CONFERENCE  
NUMBER

JANUARY-  
MARCH  
1965

# INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF  
AGRICULTURAL ECONOMICS,  
BOMBAY

# AGRICULTURAL CAPITAL FORMATION AND ITS RELATION TO CREDIT FACILITIES IN INDIA

SUHAS CHATTOPADHYAY

*Planning Division*

*Indian Statistical Institute  
Calcutta-35*

This paper attempts to discuss the importance of credit in capital formation in Indian agriculture. It should, however, be noted that no comprehensive data on agricultural investment in under-developed countries are available. Nearly 30 per cent of the Indian agriculturists are economically very poor and have necessarily to supplement their meagre income by pursuing subsidiary occupations. Another 40 per cent are also poor but not compelled to take to subsidiary occupations.<sup>1</sup> They have their own problems of finding timely and adequate finance for agricultural operations. Hence a large majority of farmers who are left with very little or no surplus at all from their earnings for further investment require credit for various purposes.

The general paucity of funds in rural areas is one of the main reasons for the low productivity in Indian agriculture.<sup>2</sup> According to the findings of the All-India Rural Credit Survey, on an average, more than 80 per cent of the farmers have difficulty in getting adequate and prompt finance. The remaining 20 per cent of the farmers go without finance. The sources of agricultural finance in India are many and varied. It has been pointed out by the All-India Rural Credit Survey that among the agencies of credit, co-operatives provided only 3.1 per cent of credit requirements of the cultivators and that institutional finance is not fully developed. Unless the credit institutions, particularly the co-operative credit societies are developed, we cannot expect better supply of investible funds.

This necessarily raises the question: how far has the co-operative movement progressed in rural India? A detailed survey of the progress of the co-operative movement is outside the scope of this paper. We will therefore deal only with the aspect of co-operative credit which can serve as an indicator of progress.

The total amount of credit advanced by co-operatives increased from Rs. 23 crores in 1950-51 to Rs. 49 crores in 1955-56 and to Rs. 125 crores in 1958-59. It was expected that by 1960-61 the level of about Rs. 190 crores might be reached. During the period 1950-51 to 1958-59 the number of primary agricultural societies had increased from 105,000 to 183,000 and their membership had gone up from 4.4 million to about 12 million. By the end of the Second Plan, it was estimated that there would be about 200,000 primary agricultural societies with a total membership of about 17 million, serving about 33 per cent of the agricultural population and about 25 per cent of the total rural population.

---

1. Handbook of Agriculture, Indian Council of Agricultural Research, New Delhi, 1961, pp. 614-617.

2. Report of the Committee of Direction, All-India Rural Credit Survey, Volume I—The Survey Report, Part 2 (Credit Agencies), Reserve Bank of India, 1957, p. 694.

In its preliminary proposals, the Working Group on Co-operative Development had envisaged the following targets by the end of the Third Plan:<sup>3</sup>

(1) Number of primary village societies	..	2.5 lakhs
(2) Members	..	40 million
(3) (a) Coverage of rural population	..	55 per cent
(b) Coverage of agricultural population	..	74 per cent
(4) Loans to be issued through co-operatives:		
(a) short-term	..	Rs. 400 crores
(b) medium-term (loans outstanding)	..	Rs. 160 crores
(c) long-term (loans outstanding)	..	Rs. 115 crores

It was recognized that this goal might be difficult to reach unless revitalisation had been infused in many of the existing societies.

One aspect of the development of co-operative movement is that as between States, progress has not been even during the Plan periods. The impact of this uneven growth of co-operative movement on capital formation can be easily seen. The following discussion will be devoted to trace out the relation between co-operative loans and agricultural capital formation. In this connection, it should be remembered that it is very difficult to obtain data on capital formation in agriculture on an all-India scale. So far we know only two surveys on this score have been conducted at all-India level: one by the National Sample Survey in its fifteenth round (Socio-Economic Survey) in July 1959-June 1960, and the other by the Reserve Bank of India (All-India Rural Debt and Investment Survey, 1961-62). The concepts of capital formation used in these two surveys were completely different; hence they are not comparable. Some information on capital formation obtained from these two surveys has been given in Table I.

The data given in columns (2) to (8) in Table I do not give us a clear idea of the extent of capital formation in agriculture because the NSS estimates were based on all rural households. But the data in columns (2), (3) and (7) largely relate to farm investments. The data given in columns (9) and (10) relate to expenditures made exclusively for farm business. Moreover, these two sets of data cover two different periods. The estimates of the two surveys are not comparable, yet we shall use both sets of estimates to rank the States in order of per household expenditures on each item of capital formation. We can then calculate Kendall's rank correlation coefficients between loans advanced by primary agricultural credit and multipurpose societies per member or per acre of cropped area, on the one hand, and per household expenditure per year for capital formation, on the other.

---

3. "Co-operative Development in the Agricultural Sector during the Third Five-Year Plan," *All-India Co-operative Review*, Vol. XXVII, No. 1, April 1961.

TABLE I—PER HOUSEHOLD CAPITAL FORMATION PER YEAR

(in Rs.)

State	Estimates Based on NSS data						Total	Estimates of fixed capital formation in farm business during July 1961 to June 1962 RBI Survey*	
	Expenditure on					Live-stock		All rural house-holds	Cul-tiva-tors
	Land and build-ing	Tools and imple-ments	Vehi-cles	Power driven equip-ments	Dura-ble goods				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Andhra Pradesh	142.00	17.98	9.08	2.26	0.21	90.50	262.03	29	43
Assam ..	106.12	5.37	1.09	—	1.21	50.77	164.56	18	22
Bihar ..	90.02	7.18	1.02	0.005	0.69	57.10	156.02	6	8
Gujarat ..	139.72	23.55	47.56	28.26	1.39	103.48	343.96	52	77
Kerala ..	93.36	3.66	1.11	—	0.29	47.91	146.33	19	23
Madhya Pradesh	98.08	12.42	8.95	—	0.90	86.97	207.32	12	15
Madras ..	143.07	16.04	7.92	32.38	4.34	119.21	322.96	40	62
Maharashtra ..	164.46	29.78	6.88	15.54	0.55	99.04	316.25	36	55
Mysore ..	236.40	18.42	23.44	10.40	0.56	124.10	413.32	61	82
Orissa ..	66.70	7.17	1.18	—	0.04	30.84	105.93	17	24
Punjab ..	259.96	21.91	15.42	49.81	3.74	115.76	466.60	29	48
Rajasthan ..	118.55	23.98	11.26	6.71	0.75	125.40	286.65	23	26
Uttar Pradesh ..	90.82	9.66	9.48	2.52	1.13	157.37	270.98	17	20
West Bengal ..	112.62	5.48	2.26	—	—	26.48	146.84	5	8

\* Reserve Bank of India Bulletin, Vol XVII, No. 12, December, 1963.

The State-wise data of per member loans advanced by primary agricultural credit and multipurpose societies and loans per acre of cropped area are given in Table II.

We now calculate Kendall's rank correlation coefficients as stated above. Table III presents the rank correlation coefficients between (1) loans advanced by primary agricultural credit and multipurpose societies per member/per acre of cropped area and (2) NSS estimates of per household expenditure on selected items of capital formation in 14 States of India during 1959-60.

The corresponding coefficients using the figures in columns (9) and (10) of Table I may now be calculated. We have to assume that the rankings of the States in order of co-operative loans advanced per member and per acre of cropped area have remained the same between 1959-60 and 1961-62. These coefficients are shown in Table IV.

TABLE II—CO-OPERATIVE LOANS ADVANCED PER MEMBER AND PER ACRE OF CROPPED AREA : 1959-60

State	Loans per acre of cropped area		Loans per member	
	Amount (in Rs.)	Rank	Amount (in Rs.)	Rank
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh .. .. .	5.86	5	138.67	4
Assam .. .. .	1.11	13	32.79	13
Bihar .. .. .	0.47	14	20.81	14
Gujarat .. .. .	9.02	2	283.47	1
Kerala .. .. .	7.39	3	54.10	11
Madhya Pradesh .. .. .	2.97	9	164.89	3
Madras .. .. .	10.16	1	109.66	6
Maharashtra .. .. .	6.41	4	191.84	2
Mysore .. .. .	4.62	7	114.14	5
Orissa .. .. .	1.57	11	63.69	10
Punjab .. .. .	4.60	8	100.27	9
Rajasthan .. .. .	1.59	10	105.07	7
Uttar Pradesh .. .. .	5.43	6	101.35	8
West Bengal .. .. .	1.51	12	39.75	12

TABLE III—KENDALL'S RANK CORRELATION COEFFICIENTS BETWEEN (1) LOANS ADVANCED BY PRIMARY AGRICULTURAL CREDIT AND MULTIPURPOSE SOCIETIES PER MEMBER/PER ACRE OF CROPPED AREA AND (2) NSS ESTIMATES OF PER HOUSEHOLD EXPENDITURE ON SELECTED ITEMS OF CAPITAL FORMATION IN 14 STATES OF INDIA DURING 1959-60

Expenditure per household on	Per member loans		Loans per acre of cropped area	
	Rank correlation coefficient	Critical ratio*	Rank correlation coefficient	Critical ratio*
(1)	(2)	(3)	(4)	(5)
1. All items shown in columns (2) to (7) of Table I .. .. .	0.36	1.75	0.32	1.53
2. Land and building .. .. .	0.34	1.642	0.30	1.42
3. Tools and implements .. .. .	0.54	2.63	0.27	1.31
4. Livestock .. .. .	0.25	1.20	0.30	1.42

\* Critical values for one-sided significance tests : 1.644 at 5 per cent level and 2.326 at 1 per cent level.

TABLE IV—KENDALL'S RANK CORRELATION COEFFICIENTS BETWEEN LOANS ADVANCED BY PRIMARY AGRICULTURAL CREDIT AND MULTIPURPOSE SOCIETIES PER MEMBER/PER ACRE OF CROPPED AREA AND RBI ESTIMATES OF FIXED CAPITAL FORMATION PER HOUSEHOLD IN FARM BUSINESS IN 14 STATES OF INDIA DURING 1961-62

Expenditure per household on capital formation in farm business	Per member loans		Loans per acre of cropped area	
	Rank corre- lation co- efficient	Critical ratio*	Rank corre- lation co- efficient	Critical ratio
(1)	(2)	(3)	(4)	(5)
1. All rural households .. .. .	0.49	2.41	0.54	2.63
2. Cultivators .. .. .	0.52	2.52	0.54	2.63

\* Critical values for one-sided significance tests : 1.644 at 5 per cent level and 2.326 at 1 per cent level.

The rank correlation coefficients in Table IV are in the neighbourhood of 0.5 which means appreciable correlation, and all four coefficients are highly significant. The States having larger amounts of co-operative loans per member or per acre of cropped area tended to show larger amounts of fixed capital formation in farm business per cultivator household or per rural household. The coefficients in Table III are smaller, of the order of 0.3, but a few of them reach the one-sided 5 per cent level of significance and one value, 0.54, exceeds one-sided 1 per cent level. Therefore, these also point to the correlation between availability of co-operative loans and capital formation. The differences between coefficients in Tables III and IV may be ultimately due to the differences in concepts adopted in the two investigations. Obviously, we can hold that credit facilities, particularly institutional credits are indispensable instruments for increasing farm investments, and extension of credit facilities would directly help the future progress of Indian agriculture.

## FARM INVESTMENT PATTERN OF A TRIBAL VILLAGE IN MADHYA PRADESH

M. L. PATEL\*

*Assistant Research Officer*

*Tribal Research Institute (Regional Centre, Sijhora)*

*Mandla, Madhya Pradesh*

This paper seeks to explore the pattern of farm investment followed by tribal and non-tribal cultivators including scheduled caste and backward caste cultivators in a tribal village of Madhya Pradesh. For the purpose of this paper, a farm investment survey pertaining to the agricultural year 1963-64, has been

\* Views expressed in this paper are strictly personal views of the author. His thanks are due to Dr. T. B. Nayak, Director, Tribal Research and Training Institute, Chindwara and Shri N. B. Basu, Principal, Reorientation Training Centre, Sijhora and Shri R. N. Verma for their suggestions.