



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 XX
No. 1

ISSN 0019-5014

CONFERENCE
NUMBER

JANUARY-
MARCH
1965

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

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.

carried out in tribal village, Sijhora (Mandla), during the period between 15th May, 1964 and 30th September, 1964. Sijhora is located at Jabalpur-Raipur road at a distance of 33 miles from district headquarters Mandla.

Method of Sampling and Source of Data

A list of all the 101 cultivators of Sijhora village was prepared from the latest revenue record of 1963-64. Stratification of cultivators was based on (i) caste, tribe, and community, and (ii) size of the operational holdings. The holdings were classified into three size-groups, viz., small, medium and big corresponding to 0.14 to 13.10 acres, 13.10 to 18.77 acres and 18.77 to 50.20 acres. The procedure adopted in the classification of holdings consisted in arraying and totalling up the operational area of all the holdings (921.29 acres) in ascending order and in dividing the total by the number of size classes. The upper limit of small size was fixed at a point at which total operational area equalled 307.09 acres. This procedure was repeated to determine medium and big size-groups. Out of a total of 69, 21 and 11 holdings in the small, medium and big size-groups, ten, five and six sample holdings were respectively selected on random basis. It was kept in view that all the 21 samples should adequately represent all living tribes, caste and community of the village. The representation of the scheduled caste and backward caste and Muslim community is proportionately greater than the *Gond* and *Pardhan* tribes in this survey because the size of population of the former three is much smaller than that of the latter two.

Basic data regarding the operational area of the cultivators have been collected from the revenue records of the local *Patwari*; hence they are secondary. The primary data pertaining to yield, income, consumption, investment, debt, etc., have been directly collected from cultivators by the interview method.

Limitations of the Survey

Considering the composition of population and groups of tribes living in M.P., the present survey includes only 21 selected cultivators, belonging to only two tribes—*Gond* (10) and *Pardhan* (2), one scheduled caste—*chamar*, four backward castes—*Panika* (2), *Teli* (1), *Ahir* (3) and *Lohar* (1) and one Muslim community. Since village Sijhora practises only settled cultivation, the results of the survey represent only one side of the tribal economy of M.P. Even in Mandla district itself, many tribals (*i.e.*, *Baigas*) still practise shifting cultivation in the *Baigachak*¹ area which, if included in this survey, would have presented altogether different results. Hence this survey totally ignores the farm investment pattern, if any, adopted by shifting cultivators. Since the Government Farm of the Tribal Welfare Department is fairly a big farm and unique of its type, it has not been included in this survey as its inclusion would have inflated the results. Also its investment pattern would be different from that of the ordinary tribal cultivators.

1. *Baigachak*, situated in the scheduled area of Mandla district, consists of several villages, comprising of 800 *Baigas*. Although the *Baiga* used to practice "Bewar" or shifting cultivation, till recently, they have now been forced to give up that in favour of plough cultivation. Inside the *Baigachak* reservation in Mandla district, the *Baigas* are allowed to pursue their traditional method of shifting cultivation in a restricted manner. See the Tribes of Madhya Pradesh, Department of Tribal Welfare, Madhya Pradesh Government, 1964, p.6.

Hypothesis

The hypothesis developed in this paper is that the pattern of farm investment is income-oriented in big and medium farms while it is subsistence and quick return-oriented in small farms. Size of farm family bears direct relationship with size of holdings because tribal cultivators prefer family labour to hired labour for work on the farm and in houses. Bigger is the size of holding bigger is the size of family dependent on it and *vice versa*. The average size of big, medium and small cultivator families has been 12.83, 12.60 and 11.42 members respectively. The choice for better farming without hiring farm labour has found its expression in joint family system. This however depicts indifferent attitude towards individual family system which has now become more prevalent in non-tribal areas, due to rapid industrialisation. Literacy is found higher among big farmers and gradually lower among medium and small farmers.

Result and Discussion

The main factors influencing the farm investment pattern of 21 selected cultivators of tribal village Sijhora are topography, lack of irrigation, structure of holdings and farm family, income and expenditure, credit availability, indebtedness, education, food habits and social inhibitions and sanctions.

Topography : The farming area of village Sijhora comprises of slopes and hills with red soil (*Barra*) suited to grow *kodo*, *urad*, *rahar*, *jagni* and *til*, and swampy fields with richer red soil to grow paddy. *Bari*, a kitchen garden, attached to each house invariably forms double cropped area. It contains red soil with high manure contents, which is suited to grow maize, *rai* and vegetables. The average annual rainfall in this area is sixty inches. Distribution of rains is not adequate enough to raise summer crops. Monsoon rains coupled with low quality of soils are responsible for non-changing crop pattern of the area. Hence it does not offer scope for heavy farm investments on machines, better seeds, fertilizer, etc.

Irrigation : Irrigation continues to remain a mystery to local cultivators, although the water table is high enough (10 to 15 feet) to facilitate well irrigation. There is no tank or reservoir to irrigate this tribal tract. *Baris* are the most fertile and best prepared parts of holdings and therefore if irrigation is developed they can promise to produce more income-maximising summer crops and vegetables.

Structure of holdings : The sizes of the holdings in the village vary from 0.14 to 50.20 acres. The structure of holdings has an important bearing on the farm investment, income, consumption and credit needs.

Pattern of Farm Investment

Theoretically, the structure of holdings should bear positive correlation with the order of farm investment. In Sijhora, farm investment per holding is the highest, being Rs. 579.57 in big holdings followed by Rs. 343.80 and Rs. 300.45 in medium and small holdings respectively.

Improvement of agricultural land included levelling, bunding and embanking of fields. Farm houses included houses which have been used either for farming purposes or both for farming and domestic purposes but did not include the houses exclusively meant for the domestic uses. Table I shows that

TABLE I—FARM INVESTMENT PATTERN OF 21 SELECTED HOLDINGS: 1963-64

Size-group	(in rupees)									
	Purchase of agricultural land	Improvement of agricultural land	Building of farm house	Repairs of farm house	Purchase of farm implements	Repairs of farm implements	Purchase of draught animals	Total		
Big holdings										
Per holding	100.00	284.66	91.66	30.83	7.49	15.33	49.60	579.57		
Per acre	3.69	10.46	3.39	1.07	0.27	0.56	1.77	21.21		
Medium holdings										
Per holding	80.00	158.00	—	7.40	8.40	6.00	84.00	343.80		
Per acre	4.56	9.02	—	0.42	0.47	0.33	4.81	19.61		
Small holdings										
Per holding	5.00	155.70	101.00	11.70	6.4	2.40	18.25	300.45		
Per acre	0.72	22.36	15.36	1.69	0.91	0.34	2.61	43.99		

big farmers have mainly concentrated their investment on improvement of agricultural land, purchase of agricultural land and building of farm houses. Compared to this, the medium farmers have mainly invested on the first two items only in addition to purchase of draught animals. Small farmers have mainly invested on still fewer items, viz., improvement of agricultural land and building of farm houses due to their limited resources. Contrary to this, the high order of investment on new purchases of agricultural land and improvement of land testifies to the surplus economy of the big farmers. The investment pattern of big farmers is therefore more towards extensive farming and deferred returns. Medium farmers allocated considerable share of their total investments to purchase of draught animals because these farmers suffered severe loss of draught cattle in the epidemic that broke out in 1963-64. They have also invested a large amount on agricultural land with long-term income objective.

Small farmers have fairly less varying distribution on investment under different capital heads except on the items of improvement of agricultural land and building of farm house, not because they are experts in farm budgeting but because they could not afford to allocate larger sums to heavier investment on purchase of agricultural land. The existing order of farm investment under purchase of agricultural land and draught animals is extremely low among the small farmers.

Farm Investment per Acre

In terms of farm investment per acre the small farmers claim much higher position than medium and big farmers. It will be seen from Table I that gross farm investment per acre amounts to Rs. 43.99, Rs. 19.61 and Rs. 21.21 in small, medium and big holdings respectively. But for the two items, viz., improvement of agricultural land and building of farm house, farm investment per acre tends to move in sympathy with the size of holdings. This again substantiates our earlier conclusion that big and medium farmers have their farm investment pattern more akin to extensive farming while small farmers mostly practise intensive farming in the tribal village of Sijhora. Small farmers lease-in land from others to make their holdings economic.

Land-Lease and Security of Land Tenure

The survey has revealed that three small farmers included in the sample have leased in land from other three cultivators who were not included in the sample selected for the survey. A few interesting points have been discovered.

- (i) In this tribal village, land-lease has been entered only among relatives.
- (ii) Social factors dominate the economic decisions. A medium farmer of *Gond* tribe leased out his land to his relative, a small farmer, because the latter felt the insufficiency of his farm land to meet the family requirements of agricultural produce. Similarly, a big farmer of *Panika* backward caste leased out part of his holding to his relative, a small farmer, because the latter had no double cropped area (*i.e.*, *bari*) to grow maize and *rai* crops for domestic consumption.
- (iii) A small *Gond* farmer leased out all his agricultural land to his relative, also a small farmer, because the former lost all his draught animals in the cattle

epidemic during 1963-64. In the non-tribal area, it has been feared that complicated tenancy laws in respect of resumption of land for personal cultivation have resulted in bringing disharmony in rural life, including litigation which results in waste of money and time that should otherwise go into farm investments.² In this tribal village Sijhora, no litigation arising either out of transfer of land or other civil or criminal suits, etc., has been found to drain out the farmers' resources. Hence no insecurity of land tenure appears to impede the farm investments.

Reinvestment of Farm Income vis-a-vis Borrowed Investment

It has been found that there is very little scope of reinvestment of farm income in the case of small farmers because of their subsistence economy. Nonetheless, their lavish expenditure on liquor and social ceremonies, etc., is an important leakage of their gross income. It may be noted from Table II that the average small farmer earns more (gross) income than the medium farmer only because livestock and poultry add significantly to their gross income. Here also social inhibitions play an important role. *Teli* and *Panika* backward castes are socially not allowed to raise poultry and piggery. *Ahir* caste is purely those of the cattle keepers and breeders. There are two small farmers of this caste included in this survey. Due to their inclusion, small farmers have been shown to earn from dairying and poultry. *Pardhan* and *Gond* tribes also raise poultry for sacrifice to God and Goddess while Muslim farmer raised poultry for his own consumption and for sale.

TABLE II--GROSS FARM INCOME OF 21 SELECTED HOLDINGS : 1963-64

Particulars	(Gross income per holding in rupees)		
	Small	Medium	Big
(1) Livestock and poultry farming	100.85	Nil	1.63
(2) Crop sale and used on farm	472.53	748.97	1,094.45
(3) Net inventory change	-16.54	-347.60	-332.08
(4) Gross Farm income			
(a) per holding	556.84	401.37	760.70
(b) per acre	79.92	22.90	31.56

Table III gives the value of livestock inventory of an average selected holding during 1963-64. It will be seen from the table that despite new purchase of livestock, there was a heavy decline in the value of the livestock inventory in the medium size-group by Rs. 476 per holding owing to epidemic, as against the loss of Rs. 285 and Rs. 151.50 per holding incurred by the big and the small farmer respectively. Consequently, medium farmers had to invest a sum of Rs. 68 per holding on purchase of livestock.

2. See M. L. Patel, "Land Tenure Legislation in India," *Agricultural Situation in India*, Vol. XVII, No. 11, February, 1962, p. 1169.

TABLE III—VALUE OF LIVESTOCK INVENTORY PER HOLDING*

Particulars	(in rupees)		
	Small	Medium	Big
1. New purchase of livestock	18.25	68.00	33.00
2. Loss of livestock due to epidemic	151.50	476.00	285.00
3. Existing livestock (excluding livestock sold out) ..	445.00	648.00	594.98
4. Net change in livestock inventory (1 + 3 -- 2) ..	311.75	240.00	342.98

* Based on local prices prevalent during 1963-64.

It may be noted from Table II that the gross farm income per holding and per acre is low in the case of medium size-group of farmers as compared to small and big farmers. This may be due to the big loss of livestock suffered by medium farmers (worth Rs. 476 on an average per holding) and also due to low farm investment per acre made by them. The loss of livestock in the case of big and small farmers was relatively of low order because these farmers had relatively lower number of livestock in their holdings during the year under review. It is interesting to find that farm investment has shown direct relationship with gross farm income.³ Small farmers having invested the highest per acre have earned the highest gross farm income per acre, while the reverse is true of medium farmers. The gross farm income has exceeded total investment per acre under nine investment heads, by Rs. 35.73, Rs. 3.29, and Rs. 10.35 in case of small, medium and big farmers respectively.

It will be seen from Table IV that the per capita income has been recorded highest (*i.e.*, Rs. 127.38) among big farmers mainly because 'service' yields an income as high as Rs. 103.56 per capita as compared to total per capita income of Rs. 53.51 among medium and Rs. 87.27 among small farmers. Medium farmers derive their main income from service, forest produce and agricultural labour and own cultivation. The small farmer mainly depends on own cultivation, agricultural labour, dairy, *dafai* (P.W.D.) works, and village services for earning income.

Investment of Borrowed Capital on Farms

Extreme poverty of the tribal and non-tribals of village Sijhora has affected the farm investment adversely. Due to poverty the farmers do not have the capacity to save and since poverty is coupled with indebtedness, they also lack the incentive to save. It will be seen from Table V that the small farmers have the maximum amount of outstanding loans at the end of 1963-64, because they have borrowed the maximum amount for farm investment, consumption and for other pro-

3. The computation of gross farm income is done as follows :

	Sales during the year
+	Products used on the farm
+	Inventory increases (or minus inventory decreases)
=	Gross income or revenue (total credits).

See Earl O. Heady and Harald R. Jensen : Farm Management Economics, Prentice Hall, Inc., New York, U.S.A., 1954, p. 116.

TABLE IV—INCOME PATTERN OF 21 SELECTED HOLDINGS : 1963-64

(in rupees)

Size-group	Gross farm income	Agricultural labour	Dafai (P.W.D.) work	Service	Poultry	Dairy	Forest village	Cottage industry	Hiring draught animal	Transport	Village service	Grazing of village cattle	Total
Big :													
All holdings	2,798.00	258.00	297.50	7,974.00	--	10.00	41.00	720.00	--	--	--	--	--
Per holding	466.41	43.00	49.58	1,329.00	--	1.66	6.83	120.00	--	--	--	--	--
Per capita	6.59	3.35	3.86	103.56	--	0.14	0.53	9.35	--	--	--	--	127.38
Medium :													
All holdings	1,879.00	575.00	90.00	666.00	--	--	183.00	--	60.00	--	--	--	--
Per holding	375.80	105.00	18.00	133.20	--	--	36.60	--	12.00	--	--	--	--
Per capita	29.66	8.01	1.42	10.57	--	--	2.90	--	0.95	--	--	--	53.51
Small :													
All holdings	3,239.50	1,005.00	765.00	656.00	16.50	992.00	178.00	650.00	270.00	2,160.00	570.00	270.00	--
Per holding	323.95	100.50	76.00	65.60	1.65	99.20	17.80	65.00	27.00	216.00	57.00	27.00	--
Per capita	32.39	10.05	7.65	6.56	0.16	9.92	1.78	0.65	2.70	2.16	5.70	2.70	87.27

TABLE V—INVESTMENT OF BORROWED CAPITAL AND DEBT POSITION OF 21 SELECTED HOLDINGS: 1963-64

(in rupees)

Size-group	For Farm Improvement				Other Productive Purposes				Consumption			
	Old debt	New debt	Re-paid	Out-standing	Old debt	New debt	Re-paid	Out-standing	Old debt	New debt	Re-paid	Out-standing
Big :												
All holdings	208	360	208	360	---	---	---	---	420	10	20	410
Per holding	33	60	33	60	---	---	---	---	70	1.66	3.33	68.30
Medium :												
All holdings	100	120	---	220	---	---	---	---	Nil	70	70	---
Per holding	20	24	---	44	---	---	---	---	---	14	14	---
Small :												
All holdings	980	710	400	1,290	---	680	---	680	1,121	150	500	771
Per holding	98	71	40	129	---	68	---	68	112.10	15	50	77.10

ductive purposes. Medium farmers have borrowed very little for consumption and have also repaid at the earliest. They have borrowed the least for farm improvement. Since small farmers are better farmers and their old debt is too high, launching of supervised debt relief programme is likely to improve their economic condition.

Conclusion

In the tribal village Sijhora, small farmers have invested highest amount of Rs. 43.99 per acre on the farm and have also received larger gross farm income of Rs. 79.92 per acre. Since these small farmers unlike the big and medium farmers cannot purchase new land for farming, they formulate their farm investment pattern subsistence-oriented and more conducive to intensive farming. Big and medium farmers have a strong tendency to enlarge the size of their operational farming units by new purchases but their investment on farms is as low as Rs. 21.21 and Rs. 19.61 respectively, which yielded low gross farm income per acre. Since literacy is relatively high among the big and medium farmers, their per capita income is high due to an additional source of income, *i.e.*, from service. It can therefore follow that more education among the small farmers will be an additional source of income but in the beginning, such expenditure on education may reduce the rate of gross farm investment and farm income. Hired agricultural labour is not preferred for farming due to its uncertain supply. Although small farmers are better farmers, their debt burden is too high. Debt relief programme would therefore be highly helpful to raise the investment potentiality of the small farmers. All the agro-economic development programmes should therefore be designed and phased so as to fit in the social matrix of the tribals/backward caste farmers. Such programmes should be conducive to raising crop intensity and farm yields on all types of holdings and should help raise gross income per acre in general and in medium and big holdings in particular. Stress must be laid on increasing non-farm income of small farmers without adversely affecting the existing pattern of their farm incomes.