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LONGITUDINAL ANALYSIS OF STRUCTURAL CHANGE IN A NORTH INDIAN VILLAGE: 1970-1987

Some Preliminary Findings

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Preface

The village of Parhil was surveyed first by the authors in 1970, and then again in 1987. The first survey covered the agricultural year 1969/70, with 1 April 1970 as the reference point for data on assets and stocks; the corresponding benchmarks are 1986/87 and 1 April 1987. Though the coverage of the first and the second surveys varies, with the second being much larger in scope, it has been possible to construct a consistent panel data set at the individual and at the household levels for each intervening year with respect to a range of structural dimensions, covering variables pertaining to demography, education, occupation, land control, assets, and mobility. Apart from generating two-point comparisons of a comparative-static nature, an innovative methodological approach additionally permits the analysis of the processes of household, capital and class formation within a dynamic framework. The study is also unusual in that it is both a complete village re-survey, and at the same time a panel-data analysis covering all individuals and households that existed in the base, final or any interim year. Work based on the use of this methodology and panel data is still in progress.

This preliminary overview paper is the first output of this research project, and is meant to tentatively sketch some initial findings. It should be emphasised that some of the data used in the paper are subject to minor revision as further more detailed internal consistency checks are completed, and gaps in data collection bridged by seeking the relevant information afresh. Also, since some of the data blocks remain to be processed, it has not been possible in this paper to arrive at 'final' categorisations of households into various socio-economic categories, and hence some of the data and the associated analysis of mobility patterns must be treated as being preliminary and indicative in nature for the time being. The qualified present status of the data notwithstanding, it is intended to release several papers, each focussing on selected aspects of the subject area, with a view to soliciting suggestions and critical comments which might be taken into account in the finalisation of the overall study.

Both authors have been directly responsible for the data collection, processing and analysis in both surveys. The first was conducted when the authors were researchers at the Agricultural Economics Research Centre of the University of Delhi; the second was conducted as a project sponsored by the Indo-Dutch Programme for Alternatives in Development (IDPAD) and the Institute of Social Studies, The Hague, where the first-named author is Professor of Rural Economics, and the second-named author, initially a visiting Research Fellow, on deputation from the Indian National Bank for Agriculture and Rural Development (NABARD), is currently Lecturer in Agricultural and Rural Development.

1. Parhil: A North Indian Village

The village Parhil is located about 160 kilometres south east of Delhi in Aligarh district of western Uttar Pradesh. The district lies in the alluvial doab plain of the Ganga and Yamuna rivers with its rich fertile soil. Running south from Aligarh town are roads leading to two cities of historical and religious significance, Mathura and Agra. About fifteen kilometres down either road from Aligarh are two tehsil (revenue sub-division) headquarters, Iglas and Sasni, respectively. Eight kilometres into the interior from Sasni (on the Aligarh-Agra road, and twelve kilometres from Iglas (on the Aligarh-Mathura), located in the far corner of Iglas development block and tehsil, lies Parhil. Its comparative inaccessibility has perhaps led to a weaker influence of developmental factors than would have been felt in villages located on the major roads or nearer these towns. In fact, there is still no motorable road to the village. A metalled road built under the public works programme in 1981 only links Sasni with Jasrana, a village two kilometres from Parhil. During the rainy season the kuchcha road to Parhil becomes virtually impassable for most types of transport.

The lands of the village cover some 2,600 bighas.[1] With a population of 1,106 persons in 1970 and 1,516 persons in 1987, and the corresponding per capita availability of land (within the village boundaries) of 2.35 bighas and 1.72 bighas in the two years, it is a comparatively land-scarce village even by the modest standards of the heavily-settled Indo-Gangetic plain. In 1987, the population, which is in the main dependent on agriculture, was spread over 19 castes[2] covering the entire spectrum of the traditional four-fold Hindu classification of hereditary occupational groups. (In 1970, the total number of castes was even higher at 21)[3].

These occupational groups until recent times were organised round the jajmani system, involving a form of patron-client relationship wherein in return for traditionally fixed seasonal payments of grain and fodder from the client households, assorted products and services were provided by the castes pursuing particular occupations. Thus castes of carpenters, barbers, potters, leatherworkers, washerpeople, sweepers and others attended to the normal and ritually

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1 The local unit of measurement of land area; 4.8 bighas equal one acre and approximately 12 bighas make up a hectare.

2 The above castes include three "castes" of Muslims, which though obviously not belonging to the religion in which the caste system has been enshrined, have been absorbed at an 'appropriate' place in the hierarchy of the system given the nature of the traditional occupations carried out by them; rules of pollution and commensal conduct have been extended to this community as well.

3 Two castes, Bania and Kanjara represented by a single household each in 1970 had disapppeared by 1987, with the death of the single member of the former and the migration of the latter.

prescribed requirements of village society. The jajmani system still survives but with a greatly restricted domain. Many traditional products have been competed away, certain services become redundant and others commercialised. However, caste-consciousness continues to be high and to determine the nature and level of social contact in the village.

Apart from to the caste-based occupations, a large number of diverse occupations are carried out by village residents both inside as well as outside the village. The changing features of this occupational pattern will be the subject of discussion in a later section.

Within agriculture, only a limited degree of commercialisation of crop cultivation can be observed in the village. Aligarh district was one of the original Intensive Area Development Programme (IADP) districts selected in the early 1960s for the introduction of the new agricultural strategy in Indian agriculture. As a result even by 1970, the use of high-yielding varieties of seeds and chemical fertilisers had become quite common. Irrigation development too had taken place fairly early, with the district being covered by networks of the canal systems of the Ganga and the Yamuna. While Parhil did not fall within the canal command area, its residents had access to the government deep irrigation tubewell installed in nearby Gautana village in the mid-1950s. Besides, mainly with the help of loans provided by the government Land Development Bank, 13 electric tubewells had been installed on private lands by 1970. This number had risen to 31 by 1987. In addition, Parhil residents by then owned 14 diesel engines, the majority of them being used on independent borings.

The relative isolation of the village also has many implications for its economy. There are no manufacturing units of the factory type in the village nor are any major infrastructural facilities available. There are no regulated markets, cooperative societies[4], fair price shops, veterinary services, milk collection centres, bank branches or for that matter even a health centre in the village. While electricity has become available with the drawing up of power lines for tubewells, only six houses have domestic connections, though a few persons resort to the practice of siphoning off the current from the overhead lines for their private use. In 1970, not even a school or a post office existed in the village. Both these have, however, come up since, though the former offers classes only upto the eighth grade. The result is that the villagers have to travel to Sasni or to Iglas for almost all their requirements or be dependent on private traders and practitioners operating in the village. Conversely, officials of government extension departments, bank officers, health and insurance inspectors are all too reluctant to take the trouble to visit the village and include it in their development plans. In 1970, the entire supply of drinking water of the village came from open wells, most of them privately owned and subject to caste restrictions with respect to access. A few years ago, however, 6 handpumps were installed at strategic points in the village primarily for the lower castes; during the survey of 1987

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4 The villagers are members of the society at the nearby village of Sahara Kalan.

only two of these were found still to be in working order.

Of the many government programmmes of rural development, the only one introduced in the village has been the Integrated Rural Development Programme (IRDP)[5] under which 40 village beneficiaries have obtained subsidised assets (mainly milch cattle) with the help of bank finance during the past five years. In many cases, however, the assets have been disposed off and bank loans remain unpaid.

The village has a gram panchayat (a body of elected village representatives) the purpose of which is to undertake development work in the village and to settle petty disputes. This institution is part of a multi-tier system of self-government promoted nation-wide during the 1950s. In 1987, elections to the gram panchayats had not been held for 15 years, not only in Parhil but in all the villages of the state of Uttar Pradesh, rendering this institution virtually defunct.[6]

Some contextualising comments are also necessary concerning the evolution of the Parhil's land tenure. In British times, a variety of land settlements were introduced in different parts of India to ensure the flow of land revenue to the Crown. These settlements inter alia created a variety of proprietary interests in land. Aligarh was one of the "Conquered Districts" annexed by the British through the military victories of Lord Lake in 1803. In the immediately following years revenue collection was carried out through temporary settlements. In 1833, a new form of settlement was introduced in the Ceded and Conquered Districts and the northwestern provinces of India. This settlement came to be known as the "mahalwari" settlement as the unit of revenue assessment was the mahal (estate) and not the village. The several proprietors of a mahal were known as pattidars and were jointly and severally responsible for the collection of the land revenue, though the settlement was made with only one of them, the sadar malguzar or the lambardar. These proprietors were given permanent, hereditary and transferable rights.

Further, occupancy rights were conferred upon the tenants of the estates upon continuous cultivation for a period of twelve years. These rights were registered with the revenue officer. In the Aligarh-Mathura region such occupancy tenants were known as maurusidars. In 1926, the Agra Tenancy Act brought tenants-at-will in line with the maurusidars except those tenants on

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5 The IRDP is a major poverty-alleviation intervention of the Government of India, and is directed to the rural poor. Over time, it has tended to be equated, with some justification, with a credit scheme for financing the purchase of milch animals by the selected poor beneficiaries. The programme covers every development block in the country.

6 Elections to the gram panchayat were held in 1988 in the village. However, following the campaign for the election of representatives for two places reserved for women there were violent clashes between brahmins and bagheles and castes supporting their respective candidates. This resulted in the death of one person, bullet injuries to several others and large-scale arrests including those of many prominent persons of the village.

sir and khudkasht lands of the pattidars, these being the "home farm" and the land shown as being directly cultivated by the pattidars, respectively. The subsequent 1939 legislation undertook the next key step in dislodging the former proprietors from their apex position in the rural class structure by granting to the occupancy tenants heritable, though not transferable, rights to the land. In turn, the Zamindari Abolition Act of 1951 completed the sequence by the abolition of intermediaries between the tenant and the State, and making the land rights transferable as well. It simplified the tenures of cultivators into two types, bhoomidari and sirdari. Heritable and transferable ownership rights could be purchased by cultivators under the bhoomidari tenure, while the rights of the sirdars, who remained tenants to the state, were permanent and heritable but not transferable. The erstwhile proprietors were given bhoomidari rights on their untenanted land subject to a ceiling on individual ownership of land, and the erstwhile tenants became sirdars. Susequently, in 1978, the sirdari tenure was abolished and all landholders became bhoomidars.

There were five mahals or estates in Parhil. These covered the entire village lands of some 2,600 bighas. Four of these mahals, of about 500-600 bighas each, were the estates of the principal landowning family of the area. These were jats from the village of Rehana, about 10 kilometres away. The fifth estate in the village belonged to a brahmin family from Surajpur village, about 25 kilometres away. Sir and khudkasht lands of these proprietors totalled only 200 bighas as almost all these proprietors were not resident in the village. Consequently, nearly all the village land passed on to the hands of the tenant cultivators of the time, these belonging mainly to the brahmin and baghele castes. Only two jat families in the village are descended from the original pattidars (one of them includes a former lambardar) but their combined holding has been whittled down to only 125 bighas, or about 5 per cent of all land owned by village residents.

Thus, the present set of landowners of the village are the former statutory tenants who subsequently acquired ownership rights, or those who purchased land from the former landowners who have now departed from the village. There is also a small group of eleven hitherto landless households which were granted small plots of 0.75 to 1.5 bighas each by the gram panchayat out of village common lands released at the time of the consolidation of holdings in 1985-86.

The village lands, according to official records as finalised after the consolidation of land holdings during 1985-86, cover 217 hectares. The land utilisation pattern as per these records which are maintained by the lekhpal (the lowest-ranking revenue official, formerly known as the patwari), is reported below.

		hectares	bighas
1. Settlement and roads	:	12	144
2. Grazing grounds	:	3	36
3. Pond	:	1	12
4. Barren and uncultivated land	:	1	12
5. Current Fallow	:	6	72
6. Irrigated through govt. sources	:	8	96
7. Irrigated through private sources	:	183	2196
8. Unirrigated	:	3	36
9. Total geographical area	:	217	2604

As mentioned earlier, Parhil is a particularly land-scarce village. Several village households own land in some of the nearby villages, especially Jasrana. Additionally, some of the women married into the village own land in the village of their birth. Thus, there is a considerable difference between the geographical area of village lands and the land owned by village households.

2. Some Comparative Findings

A summary statistical comparative overview of Parhil village in 1970 and in 1987 is provided in Table 1, from where it is possible to elicit several major aspects of change over the period. The village population grew at 1.87 per cent per year, and the number of households from185 to 250, or at the annual rate of 1.79 per cent; the average size of the household rose marginally, from 5.98 to 6.06. The incidence of out-migration virtually doubled. Since the majority of these migrants were male adults of working age, the sex ratio of the village population rose from 823 to 894, and the dependency ratio from 0.92 to 1.04. The land owned by the village households fell, with the per capita figure dropping from 2.95 bighas to 1.84 bighas. The number of landless households dropped from 52.4 per cent to 45.6 per cent. However, if adjustments were to be made for 11 previously landless housholds that received micro plots of redistributed land, and for the several landless households that emigrated from the village, the percentage would be virtually static, or marginally higher than before. The land distribution shows the predictable effects of subdivision, with the percentage of large holdings (in the total) declining, and that of small and marginal holdings increasingly equally dramaticallty. The incidence of mechanisation increased while holdings of draught animals declined. The gross land sown per capita fell noticeably. This was compensated to some extent by increases in the yield per acre of all major crops. However, the terms of trade moved against the village as a whole, given its cropping pattern, and hence the gross value of agricultural output per capita rose by just 0.64 per cent per year in terms of base year village prices. The real purchasing power, when reckoned in terms of rural west Uttar Pradesh consumer prices, fell by 1.54 per cent per

annum. Agriculture was therefore unable to sustain a steady contribution to the Parhil resident's real income, despite the heavy out-migration over the period.

In the following sections, some dimensions of this profile of change are treated at an exploratory level. Attention is focussed in turn on land, agriculture and labour aspect, on the pattern of occupational changes, and subsequently on locational and socio-economic patterns of mobility.

2.1 Land, Agriculture and Labour

What has been the performance of crop agriculture with respect to production as well as its ability to absorb labour? The answers to this question depend not only upon the rates of growth of the volume and value of agricultural output, but also on changes in the total availability of land as well its distribution by size of holdings.

There are two sets of figures for land owned for the two study years, the first applicable to village residents, and the second to village households.[7] The total land owned by village residents has declined from 3,100 bighas to 2,566 bighas, a drop of about 17 per cent. The land owned by village households, as per our second definition above, has declined by 14.6 per cent from 3,263 bighas to 2,788 bighas.[8] (Table 5). The following discussion takes the latter set of figures in its analysis of land relations.

In both the major crop seasons and for both time periods the village households have been net leasers-in of land from the nearby villages. The net leasing-in of land as a proportion of land owned has gone up from 4 per cent to 8.6 per cent in the kharif season but has only risen

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7 The former pertains to land owned by those individuals who have been treated as residents of the village in the respective years according to the definition employed in the study. In this case land owned by migrants been totally excluded regardless of any intra-household arrangements which might have been made for its cultivation. In the latter case, land that is owned by migrants but which is cultivated by their families in the village without any direct consideration, has been included in the land holdings of the respective village households. The difference between the two figures would give the extent to which non-residents had given over their land in the village for cultivation to members of their parent village household.

8 This drop in explained by the following factors: (i) some land owned in 1970 by resident households was subsequently lost to outsiders through litigation; (ii) migration of individuals with land owning rights has lead to an exclusion of their owned land from the figure for land owned by the resident population; (iii) the consolidation of holdings (1985/86) transfered some land previously owned by village residents to the village 'commons'; (iv) the additional repossession of village commons land previously being encroached upon by village landowners. (v) Finally, the figure for 1970 survey records owned land as claimed by individual landowners. Some of these were found to have been slightly overstated when reconciled with the 1987 figure and the net outcome of transactions in the interim period. It may be noted that the previous round of land consolidation was carried out in the mid-1950s, giving some room for the emergence of misperceptions regarding the exact size of owned holdings.

marginally from 7.2 per cent to 7.7 per cent in the rabi season. There is some evidence of increased leasing in of land for growing maize in the kharif season by landless households and small landholders, probably to utilise underemployed family labour in this comparatively labour-intensive crop. This is reflected also in the increased importance of this crop in the overall cropping pattern.

However, this net leasing-in has not been able to compensate for the increasing pressure on the land. There has been a drop in average operated area of 12.6 per cent over the period and a corresponding fall in the gross sown area from 6,365 bighas to 5,599 bighas, a fall of 12 per cent. The average gross sown area per capita fell more sharply, from 5.8 bighas in 1970 to 3.7 bighas in 1987, or by as much as 36.2 per cent. (Table 1). The cropping intensity remained virtually unchanged, rising only from 1.85 to 1.86.[9]

With respect to the cropping pattern, several changes can be noticed. First, there has been a perceptible move away from the mixed cropping practices of 1970, especially in the rabi crop where wheat-laha, wheat-gram, barley-gram, barley-peas, etc were commonly grown. This has given way to individual crops (barley and gram) and also to laha, the popular oilseed crop of this season. Second, a similar shift to higher value crops is to be seen in the kharif season as well, where sugarcane and bhindi (okra) as also certain oilseeds and pulses have registered an increase in their share in the cropping pattern. Third, the area sown during zaid (i.e., the third, summer) season, has increased four-fold with moong, a nitrogen-fixing pulse crop being the chief crop of this season. The cultivation of vegetables for the market, especially bhindi has been facilitated by the construction of a link road between a neighbouring village, Jasrana, and Sasni, the nearest market town. Fourth, and perhaps most strikingly for a village in a district which was one of the pioneer acceptors of the high-yielding wheat package, the area devoted to wheat varieties has dropped from 38.64 per cent[10] to 31.41 per cent, or by 18.7 per cent over the period. Within this, all wheat-mixes and the desi variety of wheat have disappeared completely. Probably the main expanatory factor underlying this decline is the significant fall in the relative price obtained by the villagers for their wheat crop. Relative to the price of its competing substitutable crops, the price index of wheat fell over the 17 year period to 57.3 with respect to gram, 52.2 for laha, 49.5 for peas and to 44.3 against sugarcane. These dramatic declines are unlikely to have been compensated through any relative shifts in costs of production of these crops. Against the price index number for Uttar Pradesh farmers, the village wheat index fell to 62.3; against the consumer price index number for rural West Uttar Pradesh, it declined to 60.0. This indicates a considerable erosion of relative profitability and purchasing power with respect to wheat and

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9 The index for 1986/87 would have been higher had land owned by Parhil residents in Jasrana - a neighbouring village - not been out of use on account of the consolidation process during the kharif season of the reference year.

10 Here, area under mixed crops in 1970 has been divided equally between the crops involved.

wheat-growing farmers.

Data on crop yields (Table 7) indicate an annual growth rate of about one and a half to four per cent for the major crops; the five main crops, viz., wheat, bajra, maize, cotton and sugarcane, recorded rates of 3.0, 2.6, 3.6, 3.0 and 2.7 per cent, respectively. Given the fact that the gross sown area fell at the rate of 0.67 per year, and accepting an approximate figure of 3.0 for the annual growth rate for average physical crop yields, the volume of agricultural production may be assumed to have grown roughly at a rate of 2 per cent per year. The gross value of agricultural output per bigha will have grown at a somewhat faster rate, given the shift in favour of higher value crops.[11]

This moderate growth rate can be explained partly in terms of the intensification of irrigation in the village. In 1970, there were 13 tubewells in the village in addition to a deep-bore state-owned tubewell. In 1987, despite the reduction in the area of land sown, there were as many as 31 electric tubewells, as well as 14 diesel engine units most of which serve tubewell borings not connected to electric pumps. Despite the de-commissioning of the state-owned tubewell, as well as the erratic availability of electrical power, this change must reflect a substantial improvement in the quality of the irrigation factor over the period.[12]

How does this performance relate to the employment dimension? Full data are not available, but a few clues are. Firstly, while the resident population of the village grew at 1.87 per cent per annum over the period, this figure would be approximately 2.2 per cent per year if one took into account also those individuals (of resident households) who left the village in the interim period. The agricultural production growth rate has probably been marginally lower than this, it remains unlikely that this increase in production could have absorbed anything more than approximately one-half of the increase in the village working-age population, assuming steady productivity levels and an output elasticity of employment in agriculture of about 0.5.

Even this could be an over-optimistic estimate. Over the period, there has also been a noticeable increase in the degree of mechanisation of agricultural operations. While combine harvesters have not made an entry, the number of tractors has risen from 3 to 5, and the percentage of tractor-ploughed area has increased considerably. This is reflected in a sharp fall in the ownership of draught animals: from 142 in 1970 to 94 in 1987 (Tables 15 & 16), or by

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11 Since data on costs of cultivation have not been fully computed as yet, it is not possible to make any statement about changes in the profitability of cultivation in general, or with respect to specific crops.

12 It is worth mentioning, incidentally, that from a social point of view, the new situation reflects a heavy over-investment in irrigation, made possible by the underpricing of capital, as well as the level and specific methods of subsidisation of electricity prices for agricultural uses. The water table has dropped in this region, and several wells have dried up, or have had to be deepened; borings of new tube-wells have to go far deeper than before. The 'improvement' in irrigation volumes is therefore not without cost, and this is borne by a much wider group than the owner-cum-user beneficiaries of the 'improvement'.

33.8 per cent. The entire drop has been in the rich and the middle economic strata[13], with households in the poor stratum increasing their absolute holding from 15 to 16 animals. Virtually all the 17 threshers of 1987 are new acquisitions as well. The elasticity figure of 0.5, even if relatively uncontroversial as an average, would probably have been falling over the period.

Additionally, the process of sub-division of holdings has meant that a far higher percentage of the cultivated land belongs to smaller sized land holdings (Tables 3 & 4). In 1970, owned holdings under 25 bighas in size took up 9.7 per cent of the total land; in 1987, this share had increased dramatically to 30.0 per cent.[14] The figures for land in holdings in excess of 50 bighas dropped from 60.3 per cent to 29.0 per cent. One consequence of this would be a relative reduction in the demand for hired labour, since family labour would in principle be able to undertake a much higher share of the farm tasks. This is directly evidenced by data on the extent of hired labour. In 1970, the total number of days of casual and contract hired labour performed by agricultural labourers of the village was 10,662 persondays; by 1987, this figure had risen to just 11,647, or at a rate of 0.5 per cent per annum[15] in total, or by 1.28 per cent per annum when reckoned per bigha of gross sown land.[16]

It seems apparent that such agricultural growth as has occured has in all probability been just below the rate required to satisfy the food balance requirements, and almost definitely has not come even near to meeting the requirements of maintaining the employment balance. With respect to the latter, there has been a general displacement of human labour and animal labour by machine work; and a more specific displacement of hired labour by machine labour and/or by family labour of land operators. It is reasonable to conclude that there has been a considerable push factor operative on rural labour as far as agriculture is concerned. This has applied to different extents, and in different ways, to virtually all categories of village households.

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13 The criteria for demarcating strata are discussed in section 2.4.

14 Even within this size group of holdings, the average area of land owned by persons belonging to households with holdings in this size group dropped by 18.6 per cent, from 2.00 bighas per capita to 1.53 bighas per capita over the period.

15 Direct data on labour use will become available later; meanwhile, this can serve as a tentative proxy for the utilisation of hired labour by village land operators; it assumes that there was no change in the share of labour hired from outside the village for agricultural operations.

16 It is also necessary to take into account the labour performed by permanent and semi-permanent farm servants in order to arrive at the total labour hired during the two time periods. The number of such workers declined from 12 to 4 between 1970 and 1987. Assuming each such worker spends 120 days per year on agricultural work, the figures for total hired labour in agriculture become 12,102 and 12,127 persondays respectively, reducing the growth rate to virtually zero. Even if we were to assume that 50 per cent of the decline in the number of persondays of labour performed by permanent farm servants was absorbed by an increase in family labour, the 1987 figure for total persondays of "hired labour" would rise to only 12,607, an annual increase of only 0.24 per cent.

2.2 Occupations

How has the force of this push factor been absorbed? A few early answers are indicated by occupational trends.

(1) To begin with, the number of households involved in cultivation has risen from 109 (or 58.9 per cent of the total) to 166 (or 66.4 per cent of the total), an increase of 52.3 per cent, compared to the 35.1 per cent increase for the total number of village households. Within this, households involved with tenant cultivation increased by 65 per cent, while those involved exclusively with own-account cultivation rose by 42 per cent.[17] This relative increase in tenancy needs some explanation, especially since the process of sub-division was argued earlier to have sharply increased the percentage of total area in holdings of a smaller size amenable to cultivation by family labour.

The answer is probably to be found in a combination of factors. Firstly, sub-division could lead to a proliferation of very small plots, and given the high fixed costs of managing widely dispersed tiny plots, it could become more efficient to let out some of them. It is worth noting here that the recent round of consolidation has blunted the edge of this effect. Secondly, on the plausible assumption that any increase in the economic returns to agriculture per bigha could not have adequately compensated sub-dividing households for the reduction in land availability, household adults could be expected to get involved in other non-farm activities. Where such activities could not be incorporated within the temporal rigidities of agricultural operations, recourse could often be taken to tenancy. Thirdly, there has been a considerable acceleration in out-migration of adult males from land owning households. This frequently creates a family labour bottleneck with respect to cultivating the family plot, leading to tenancy. Fourthly, there is the circumstantial factor: a few large professional tenant cultivators have disappeared, and could have been replaced by a larger number of smaller tenant households.

(2) Quite dramatic changes have also occured in relation to agricultural labour. The total number of households engaged in agricultural labour as a primary or secondary occupation was 83 in 1970 (or 44.9 per cent of all households) and rose to only 90 (i.e., fell to 36.0 per cent of all households) in 1987, which contrasts sharply with the rising trend in the households in the cultivation category. Even this small increase has been accompanied by a reduction in the average number of days of hired (casual and contract) wage work of agricultural labourers by about 9 per cent over the period. While the use of such hired labour per sown bigha rose

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17 Over the period, 11 landless households received tiny plots of land - of about 1 bigha each - through a programme of land redistribution. Should the numbers be adjusted for the impact of this intervention, the contrast between the pure own-account and tenant cultivation growth rates would be greater.

somewhat from 1.68 days in 1970 to 2.08 days in 1987 (or at the rate of 1.28 per cent per annum[18]), this effect was more than counteracted by the reduction in the total gross sown area on the one hand, and the slight increase in the number of agricultural labourers on the other.

(3) The contractual nature of agricultural labour has also been transformed, with contract labour massively replacing both permanent farm labour, as well as casual labour. In 1970, 60.3 per cent of the agricultural labourers were involved in pure casual labour, and only 13.7 per cent in pure contract labour; by 1987, these percentages had virtually reversed to 10.5 and 46.2 respectively.[19] Alongside this, as noted earlier, the use of permanent farm servants has diminished greatly; from 12 such workers in 1970, the number dropped to just 4 in 1987.

(4) Within the non-agricultural groups as well, significant changes are noticeable. The first major one concerns the heavy reduction in the numbers of workers and households in the traditional caste-related jajmani occupations whether in production or services. The number of workers here has fallen from 39 in 1970 to 18 in 1987, with the castes of potters, washerpeople and sweepers most heavily affected. The former's products have been displaced by modern substitutes; few households can afford the services of sweepers, who in any event have been drifting to similar jobs with municipal departments in urban areas; and the services for washing clothes have been similarly reduced, partly also reflecting a decline in certain categories of ritual-related demand.

(5) The second category negatively affected is also village based. Both agricultural processing services and traditional transport services provided by muleteers have declined over the period. The former have been displaced by new larger scale competitive units based in nearby towns now made readily accessible by the new village link road; the latter may likewise have suffered on account of the increase in the number of tractors available for haulage in the village. The new road has thus widened the domain of the tradeable sector, and village activities have been unable to sustain their position in the face of 'external' competition.

(6) A third type of occupation that has suffered (as a consequence) is hawking and petty trade, where the number of workers have fallen from 26 to just 11. Here, the main items being sold were traditional sweets and candies: workers involved would buy these from the town and peddle them in the villages. Several factors explain the decline: better access to markets on account of the road has eroded the locational factor; additionally, there is a much higher degree

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18 This implies a gross-output elasticity of hired-labour-days of 0.63. However, this figure is clearly an exaggeration on account of the exclusion of the decline in the permanent farm servants (cf. fn. 16); taking the latter into account, the elasticity drops to the low figure of 0.12. It should be noted that this ex post elasticity of course includes the impact of all other intervening factors, such as labour-displacing mechanisation, disaggregation of the landholding structure, etc.

19 The shift to contract labour appears also to have inducted substantial numbers of female and child workers into types of agricultural labour not previously performed by them.

of communication between most village households and neighbouring townships; a change in tastes has meant that modern substitutes have displaced traditional sweets; local shopkeepers - whose number has increased a little - also stock these 'modern' sweets; and finally, in the chaumasa[20] season when this occupation was generally practised by its mostly Muslim workers, the rise of the seasonally competing occupation of bandplaying, also specialised in by the Muslim households, has led to some withdrawal of workers from petty trade.

(7) In contrast, two groups of occupations related to the wider economy have increased in importance. The first of these is bhatta labour, or working at the brick kilns which have had consistently good business over the period on account of the virtually permanent boom in the construction industry. Though bhattas are strewn in considerable numbers along the main road arteries, many village bhatta workers travel considerable distances to faraway worksites in teams of contract workers assembled and managed by some early 'pioneer' village bhatta workers who have now acquired the status of migrant labour contractors, even if on a petty scale.[21]

(8) The second expanding group is that of some modern, 'secular' occupations, again mostly based outside the village. These comprise the services and professions. Workers in government service increased from 6 to 16 over the period, and those in the teaching profession from 9 to 16; those in roadways or other transport services rose from 5 to 11.

(9) Even such a brief sketch of village occupations would be incomplete without mention of a Parhil specialisation: bandplaying! This occupation was started by a musically inclined Muslim family a few generations ago; it has developed steadily ever since, appealing with its uniforms, occasional marriage outings and party food, and some travel to various regional towns, to the younger members of the community. It has now outgrown the village, and successful bandleaders have established their shop-windows in Sasni; one of them has even integrated vertically and bought a mini-bus in partnership with one of the richest landowning (baghele) households of the village. In terms of numbers, they remained static at 22 in both years because several bandplayers have migrated out of the village altogether.

(10) The following general observations of an interpretative nature can be made. Firstly, while cultivation figures relatively much more often as a household occupation in the village, its relative importance as an income earner has dropped.

Secondly, the ability of agriculture to absorb hired labour has declined; alongside this,

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20 Literally, four months, i.e., May through August, the high summer and the rainy season - the slack period for virtually all rural economic activity.

21 This occupation also has a caste affiliation, even if not a traditional or jajmani one. The brick makers are almost all jatavs, though the kumhars and dhobis service the kilns with their mules for transportation of clay and bricks.

there has been a dramatic shift from casual to contract labour, especially in the harvest season. These two trends have probably involved the rising introduction of adult female and child labour in cultivation as well as in agricultural labour. At the same time, there is less work for hired agricultural labourers than before.

Thirdly, there has been a drift towards specialisation, with the degree of occupational multiplicity - so acutely prevalent amongst the poorer households in 1970[22] - declining somewhat.

Fourthly, traditional, caste and village-based occupations have had their viability eroded over the period by competition with substitutes produced outside the village economy.

Fifthly, one response of village labour has been to find employment outside the village, and this is expressed most strongly in the construction, transport and the services sectors. The contours of the circulation of village labour have widened considerably. In this process, education has been a crucial factor with respect to the richer households, whereas for many poor low-caste households, the paths have been more varied, with some prominence attached to employment at the brick kilns.

(11) Finally, the various trends are suggestive of a pattern of occupational mobility but within the limits and specific constraints of labour market segmentation. When households engaged in declining traditional caste-linked occupations practised in the village wish to switch, they cannot do so in favour of any other occupation which has an exclusive caste basis: a kumhar (potter) household would not be able (or willing) to switch to the work of a dhobi (clothes washerpeople). However, it could be possible for either household to seek employment in the same trade in locations outside the village. This type of locational mobility within the caste-specific occupation is a feature of very many cases of Parhil migration over the period. The alternative would be to seek employment in the modern, 'secular' occupations whether (only occasionally) in the village or (most often) outside it. Teaching and government service as clerks, peons, bus conductors in state-owned transport companies etc. are favoured professions into which entry, at least in principle, is open to all castes (and as such, here labelled 'secular').[23] Even here, there are some occupations in which there is de facto caste-based recruitment: many village sweepers have entered government or municipal employment in the same capacity, as have some workers from the caste specialising in the tending of orchards and gardens who have taken up government service for the maintenance and upkeep of public parks in nearby towns. At the upper end of the scale, the superior 'secular' occupations tend to be dominated by the high castes, not least on

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22 This phenomenon was highlighted and analysed as a household survival strategy - with particular reference to the poorer households - in Saith & Tankha, 1972a.

23 This is not to say, of course, that caste connections would not be a major factor in actually getting any specific job!

account of the minimum educational requirements for entry, a condition which puts such jobs effectively out of the reach of the poorer sections.[24] The only two professions which are effectively open to all comers are cultivation and agricultural labour. Thus, several dhobi households, which have done rather poorly over the period, have switched steadily to these activities in place of their traditional occupation.[25]

Over the 17 year period, the village displays a much increased degree of incorporation with the wider regional economy. The village itself has become much less important as an economic arena where the residents, especially the land-scarce households, seek or obtain their employment and earn their income entitlements. To this extent, the self-provisioning capacity of the village, which obviously was never complete, has weakened, and it has come to be increasingly dependent on the linkages with the external economy.

2.3 Locational Mobility: Entries and Exits

Direct evidence on the extent of this external involvement is provided by the data on out-migration from the village. Three aspects[26] are relevant:

(i) the record of net migration of complete households, taking into account both emigration (Table 19) and immigration (Table 20);

(ii) the out-migration on a permanent basis of individual workers who continue to retain sufficiently strong connections with their 'link' households in the village for them to be retained in the study as 'staying out' members of these link households[27] (Tables 21-23);

(iii) seasonal migrant workers who are included in the resident population of the village[28] (Tables 21 & 24).

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24 Of course, in government service, the lower castes can take advantage of the positive discrimination clauses of the Indian Constitution which reserve a certain proportion of such jobs for applicants from these castes.

25 Some castes, mainly the brahmins, set self-imposed constraints on engaging in cultivation-related occupations. In Parhil village, brahmin households in general do not subscribe to this taboo as far as cultivation of their own holdings is concerned; indeed, some of them even undertake agricultural labour on the fields of selected castes. This may not be behaviour typical of this caste.

26 Migration on account of marriage has been excluded from the discussion here.

27 Neither such workers, nor the members of their immediate families staying with them are counted in the village resident population. However, where some members of their family stay normally with the 'link' household in the village, these are included in the village resident population.

28 Data on seasonal out-migration for 1970 have not been included yet; in principle, these are still available from the 1970 household schedules.

Over the period, 16 complete households left the village altogether. Information on these is provided in Table 19, and reveals the noteworthy fact that 14 of the 16 were drawn from the 'poor' economic stratum, and of these, as many as 12 belonged to the 'poor non-peasant' sub-stratum. Only 3 of the 16 owned any land at the time of out-migration, and of these, two owned just a quarter of an acre each[29]. This further emphasises the inability of the growth process at the village level to absorb and retain the labour supply of the poorer sections of the work force. This missing section of the original village population needs to be borne in mind when making deductions about the pattern of structural change in the village on the basis of the evidence pertaining to the two benchmark years.

All nine immigrant households had prior connections through their families with Parhil; many had returned to the village as a refuge when their life paths outside had become unmanageable, or when they had come into some inheritance in the village. Most entered the poor stratum, implying that they had not given up much outside the village.

Turning to the permanent out-migrants, data reveal that in 1970 they formed 3.35 per cent of the total population, with 15.68 per cent of the households having at least one member in this category of worker. By 1987, these percentages had nearly doubled to 6.33 and 28.00 respectively. If seasonal workers are also included, as many as 9.43 per cent of the village population were involved, and between one-third to two-fifths of all households; if the households that migrated out as full units are also included, this ratio could be as high as nearly one-half. This is a dramatic development.

On the basis of the data in Table 21, it can be hypothesised that in 1970, households from the richer strata were relatively more involved with migration, but that by 1987, both with respect to permanent as well as seasonal migration, there was probably a 'V' pattern, with the involvement of the poor stratum having increased at a very fast pace over the period with respect to both types of migration. The middle stratum had come to be the least affected, relative to its numbers, by out-migration. A significant number of the middle stratum households involved with migration were recent promotees from the poor category precisely through the successful outcome of their push into the wider economy.

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29 These observations further emphasise the likely biases introduced into the findings of analyses based on panel data on account of the problem of the migrant and other drop-out households. Thus, it might be assumed that the drop-out households (which would include all such migrants) were scattered across the sample in a proportionate manner, and as such their loss did not vitiate the findings of the reduced panel comparisons. This type of assumption is empirically falsified directly in the case of Parhil village. Elsewhere as well, evidence suggests that the incidence of migration of whole households is likely to be highest in the poor, landless category.

2.4 Socio-economic Mobility

This is one of the central concerns of the entire research project, and considerable effort has gone into developing a special methodology designed to facilitate the analysis of mobility in terms of alternatively specified units and categories. The methods used are quite demanding in terms of their data and time requirements, and have not as yet come on line for purposes of hypothesis testing. Therefore, here, remarks are limited to some early findings using more conventional methods of analysis.

In the exercises below (Tables 9 - 25), village households have been grouped into three major economic strata, rich, middle and poor in both years, using a similar yardstick. Each stratum has then again been sub-divided into three sub-strata, the 'peasant agricultural' households, which derive the major share of their income from agricultural activities; the 'peasant non-agricultural', where agricultural activities do not form the main income source; and 'non-peasant', where the households concerned are not at all engaged in the cultivation of land.

The criteria used in this paper for the rich/middle/poor stratification emphasise the potential surplus-earning capacity, or the overall economic stance and strength of the household, and are therefore rather wider than straightforward income-based criteria. At the first stage, the cut-off points between the poor, middle and the rich strata have indeed been specified in terms of an income criterion.[30] However, in a second step, other dimensions, such as household wealth and asset ownership, level of development of its human resources, the demographic structure of the household, the occupational profile of household workers etc. are also factors which have been taken into account. The second stage alters the outcome for a limited, though not negligible, number of households. The detailed specification and justification of the criteria, which inevitably combine objectively quantifiable as well as some relatively judgmental dimensions, will be discussed in a subsequent paper.[31] It must also be noted that the tables reflect an initial and tentative application of these criteria in a situation where not all the relevant data sets have become fully available, and as such, the reported distributions are no more than of an indicative nature provided to offer a first preliminary overview of the process of change on the one hand, and to serve as a vehicle for discussing some methodological issues

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30 In terms of income, the cut-off point adopted at the first stage for delineating 'poor' stratum was a household income level of Rs. 2,500 for the base year, and Rs. 7,500 for 1987; both levels are somewhat above the respective poverty-line household incomes for the two years. For the line between middle and the rich strata, the cut-off income level was set at that which would accrue from the cultivation of 50 bighas of land; this was fixed approximately at Rs. 5,000 in 1970 and Rs. 15,000 in 1987. Since finalised statistics on the net returns per bigha are not yet available, the data used here are approximate in some respects. (All income figures are in current prices.)

31 The criteria used here are not identical to the ones used in the first round analyses as reported in Saith & Tankha, 1972a, 1972b. However, the criteria used in the present study have been applied through a fresh treatment of the 1970 data in a comparable fashion to the 1987 data.

on the other.

Mobility can be analysed with respect to any selected attribute: income, occupation, 'class' status, or economic strata (as done in this note) etc. The other prior question to be answered is: mobility of what, i.e., which type of reference unit? The analysis could be at the level of the individual, the 'household', or some group of either clustered according to some key attribute. For the time being, the unit adopted is the household, though eventually the methodological approach developed should permit a highly flexible approach to the analysis of mobility in terms of several alternative specifications of attribute and unit.

It is usual for most re-studies and re-surveys - other than those using panel data - to investigate the mobility of households through a benchmark comparison of the distribution of households grouped into 'classes' or other chosen category in each year. The two structures are compared, and deductions made about the degree and dynamics of mobility. Table 9 presents such a conventional starting point for the village. A few features are obvious.

Firstly, at the level of the three strata, there appears to have been remarkable stability in the structure, with only a few percentage points separating the relative strength of each stratum in the two years. The middle expands marginally at the expense of the rich stratum, but this change is hardly worth emphasising.

Secondly, this story of aggregate stability could be questioned if the 14 poor landless households which left the village were taken into account, as indeed they should be in an analysis of mobility.

Thirdly, there are clear indications that underlying this aggregate stability in terms of strata, there is considerable restructuring of households at the level of the sub-strata. Within each strata, there is a decline in the relative importance of households which earn the majority of their incomes from agriculture; here, it must be remembered that 12 poor landless households received tiny plots of land over the period, and as such moved out of the poor non-peasant category by virtue of becoming cultivators as well.

The limitations of such comparative static pictures are obvious: while they provide a sense of structural change at an aggregated level, they have a large area of darkness with respect to the nature and pattern of mobility at a more disaggregated level, eg., that of the household. This precludes any further analysis of the dynamics of such aggregate change, or its decomposition in terms of its sources. At this stage, recourse is often taken to a two-way cross-tabulation of households in the two years in the form of a mobility matrix. To be able to do this, a major problem has to be surmounted: data have to be available for the 'same' household for the two years. The data needs are therefore much greater than those for the aggregate group-level comparative static pictures of the type in Table 9. The main hurdle is in the

identification of households, since the latter die, migrate, split and merge, and also redefine themselves in other ways. This problem has proven altogether too much for most of the panel and other re-survey studies that are available.

In this study, these problems can be largely overcome through some methodological innovations. A first descent to a lower level of disaggregation is made in Tables 10 to 12, which present mobility matrices for 'parent', 'stem' and combined households, respectively. In the main, parent household is designated as one which survives with the original head of household, or with his wife or elder son as heads, irrespective of the economic status of the household[32]. Splits away from the original parent household - on account of sons getting married and setting up separate households, or due to the sub-division and separation upon the death of the original head of household - generate stem households. In the latter case, the mobility is not between the base year and 1987 but rather between the year of the formation of the stem and 1987. In making Table 11, each stem household has been ascribed an original or 'surrogate' 1970 status identical to that which its parent household had in 1970. Table 12 is a combination of the parent and stem tables, assuming each stem to have had a separate notional parent in 1970 with the same stratification label as its parent.[33] This extension permits a fuller analysis of the pattern of mobility of the entire population of the village. Other studies have restricted themselves to the first category, either by default, or because the treatment of stem households was precluded by the design of the panel, or other re-survey methodology.

The results themselves are but preliminary, and only suggestive of lines of enquiry and hypotheses to be formulated precisely and to be tested at a yet more disaggregative level. The data in Table 10 further undermine the aggregative comparative static picture of stability in the pattern of stratification as discussed in context of Table 9. There is significant downside mobility with respect to the rich stratum[34], with only 20 of the original 36 rich households surviving in the rich category. For the middle stratum, there is even greater total mobility, with only 19 of 39 staying in the same stratum. Here, downside mobility seems much more pronounced than upside displacements. In contrast, total mobility in the case of the poor stratum

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Specific complex cases can and occasionally do arise; the precise criteria for handling all of these need not be discussed here.

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Thus, if a rich 1970 parent household sub-divides into 5 - one parent plus four stems - the 1987 data will record each of the five with their 1987 strata-label. However, five cases of rich parent households will be registered in Table 16, one as an accurate account of the origin of the parent household, and four entries reflecting the rich (parental) origins of the four stem households.

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Of course, up-side mobility of the uppermost class and down-side mobility of the lowest class are compressed into these size classes themselves in the form of altering the intra-size class distributions. For a systematic analysis, these effects need to be tested directly with respect to the cases in the relevant cells. For the poor strata, for instance, downside mobility is also reflected in the departure of 14 poor mostly landless households from the village over the period, presumably as a reaction to their prospect or experience of downside mobility within the village.

is the weakest. If the poor households which left the village are also taken into account, upside and downside mobility are both of somewhat equivalent strength.

The data for the stem households (in Table 11) suggest a much more volatile behaviour, with downside mobility clearly more pronounced than in the case of the parent households. This could have to do with the different points at which parent and stem households are on their respective demographic cycles; on the pattern and timing of inheritance within landowning households; as well as on the specific attributes of the parent and stem households involved. This type of data does not immediately provide answers to such questions.

Of course, this type of mobility analysis can in principle be carried out with respect to differently specified categories; for instance, Marxian class categorisations could be used; or occupational groupings, or asset ownership or income size-classes. Indeed, various cross-classifications would be necessary to view the multi-facted process of structural change from various vantage points. These tasks remain on the research agenda.

Where the methodology of this study perhaps makes a crucial difference is in its ability to specify data on a range of important structural (demographic, asset-ownership, occupational, and human-capital related) factors as a matrix on a time series basis for each individual. A crucial string concerns entries defining the location and movement of any individual through different households over the full time period. This allows the individual records to be recomposed at various levels, whether the household, family group, lineage, caste, strata, or any other, for all these structural variables as time series. With this powerful procedure, the time paths of individual households can be analysed and and understood much more meaningfully. This method also provides a bridge between the analysis of the experience of individuals, households as well as groups constituted according to any specified criterion. There are also several other categories of hypotheses which can be tested by this methodology applied to a complete village panel which would be impossible to achieve through conventional re-surveys, or partial panel studies. The method also meshes very well with the more anthropological case-study approach to household path analysis.

At the present moment, work is nearing completion in making this methodology fully operational on the complete village panel data sets for demographic, educational, household status, land rights, asset ownership, and occupational variables. As such, the findings reported in this discussion note must be treated merely as a basis introducing the wider exercise which will attempt to link individual paths to those of households, of the latter with various intermediate categories, and on the basis of these to locate the experience of the village in the context of structural change in the wider regional economy.

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LIST OF TABLES

Table 1

VILLAGE PARHIL: COMPARATIVE DATA - 1970 AND 1987

		1970	1987
1.	**Population**		
1.1	Population	1106	1516
1.2	Female population	505	729
1.3	Females per '000 males [1.2/(1.1-1.2)]	840	926
1.4	Adjusted population (i.e. excluding dependents of non-residents)	1068	1445
1.5	Adjusted female population	482	682
1.6	Adjusted females per '000 males [1.5/(1.4-1.5)]	823	894
2.	**Households**		
2.1	No. of households (HHs)	185	250
2.2	Average HH size (persons) [1.1/2.1]	5.98	6.06
3.	**Migration**		
3.1	No. of migrants with links in village	37	96
3.2	(% of total village population) [5.1/1.1]	(3.35)	(6.33)
3.3	No. of HHs with such migrants	29	72
3.4	(% of total village HHs) [3.3/2.1]	(15.68)	(28.80)
4.	**Dependency ratio** (population in age groups 0-14 years and 60+ years/population in age group 15-59 years)	0.92	1.04
5.	**Education**		
5.1	Average years of education - total	1.95	3.47
5.2	Average years of education - females	0.63	1.85
5.3	Average years of education - males	3.05	4.90
5.4	No. of HHs with maximum educational level of more than 12 years	3	21
5.5	(% of total village HHs) [5.4/2.1]	(1.6)	(8.4)
5.6	No. of HHs with maximum educational level of more than 15 years	0	10
5.7	(% of total village HHs) [5.6/2.1]	(0.0)	(4.0)
6.	**No. of castes**	21	19
7.	**Land ownership**		
7.1	Land owned by village HHs (bighas)	3263	2788
7.2	Land owned per capita (bighas) [7.1/1.1]	2.95	1.84
7.3	No. of landless HHs	97	114
7.4	(% of total HHs) [7.3/2.1]	(52.4)	(45.6)
7.5	HHs owning more than 50 bighas (No.)	26	11
7.6	(% of total landowning HHs) [7.5/(2.1-7.3)]	(29.5)	(8.1)
7.7	HHs owning less than 25 bighas (No.)	32	92
7.8	(% of total landowning HHs) [7.7/(2.1-7.3)]	(36.4)	(67.6)
8.	**Land use**		
8.1	Gross area sown (bighas)	6365	5599
8.2	Sown area per head of population [8.1/1.1]	5.8	3.7
8.3	(Annual rate of growth) (%)	(--)	(-2.7)
9.	**Cropping intensity**	1.85	1.86
10.	**Ownership of assets**		
10.1	Draught cattle (No.)	142	94
10.2	(No. per owned '000 bighas)	(43.5)	(33.7)
10.3	Milch cattle (No.)	189	285
10.4	(No. per HH) [10.3/2.1]	(1.0)	(1.1)
10.5	Tubewells (no.)	13	31
10.6	(No. per owned '000 bighas)	(4.0)	(10.8)
10.7	Tractors (no.)	3	5
10.8	(No. per owned '000 bighas)	(0.9)	(1.8)

		1970	1987
11.	**Crop yields (quintals per bigha)**		
11.1	Wheat HYV	1.40	2.31
11.2	(Annual rate of growth) (%)	(--)	(2.99)
11.3	Bajra	0.67	1.03
11.4	(Annual rate of growth) (%)	(--)	(2.56)
11.5	Sugarcane	24.90	38.83
11.6	(Annual rate of growth) (%)	(--)	(2.65)
12.	**Prices**		
12.1	Average village price of wheat (Rs. per quintal)*	71.2	164.1
12.2	(Annual rate of growth) (%)	(--)	(5.03)
12.3	Nine-crop Village Price Index (VPI)@	100.0	263.4
12.4	(Annual rate of growth) (%)	(--)	(5.86)
12.5	Rural CPI - Western U.P. (RCPI)$	100.0	382.6
12.6	(Annual rate of growth) (%)	(--)	(8.21)
12.7	Farmers' price index - U.P. (FPI)#	100.0	368.6
12.8	(Annual rate of growth) (%)	(--)	(7.98)
13.	**Gross value of agricultural output (Rs.)**		
13.1	At current prices	508,006	2,044,425
13.2	(Annual rate of growth) (%)	(--)	(8.54)
13.3	At 1970 village wheat prices	508,006	887,039
13.4	(Annual rate of growth) (%)	(--)	(3.33)
13.5	At constant prices (VPI)	508,006	776,168
13.6	(Annual rate of growth) (%)	(--)	(2.52)
13.7	At constant prices (RCPI)	508,006	534,350
13.8	(Annual rate of growth) (%)	(--)	(0.30)
13.9	At constant prices (FPI)	508,006	554,646
13.10	(Annual rate of growth) (%)	(--)	(0.52)
14.	**Gross value of agricutural output per sown bigha (Rs.)**		
14.1	At 1970 village wheat prices [13.3/8.1]	79.8	158.4
14.2	(Annual rate of growth) (%)	(--)	(4.12)
14.3	At constant prices (VPI) [13.5/8.1]	79.8	138.6
14.4	(Annual rate of growth) (%)	(--)	(3.30)
14.5	At constant prices (RCPI) [13.7/8.1]	79.8	95.4
14.6	(Annual rate of growth) (%)	(--)	(1.06)
14.7	At constant prices (FPI) [13.9/8.1]	79.8	99.1
14.8	(Annual rate of growth) (%)	(--)	(1.28)
15.	**Gross value of agricultural output per head of population (Rs.)**		
15.1	At 1970 village wheat prices [13.3/1.1]	459.3	585.1
15.2	(Annual rate of growth) (%)	(--)	(1.43)
15.3	At constant prices (VPI) [13.5/1.1]	459.3	512.0
15.4	(Annual rate of growth) (%)	(--)	(0.64)
15.5	At constant prices (RCPI) [13.7/1.1]	459.3	352.5
15.6	(Annual rate of growth) (%)	(--)	(-1.54)
15.7	At constant prices (FPI) [13.9/1.1]	459.3	365.9
15.8	(Annual rate of growth) (%)	(--)	(-1.33)

* Average of wheat prices reported by village farmers in the reference years of the study.

@ Constructed from village data for nine major crops covering approximately 75% of the value of agricultural production in the each of the reference years.

$ As estimated for 1969-70 and 1986-87 from average rural consumer price indices for Western U.P. for the period 1982-83 to 1984-85 with 1970-71 as the base year.

As estimated for 1969-70 and 1986-87 from average of indices of prices received by farmers in U.P. during the period 1981-82 to 1983-84 with 1970-71 as the base year.

Table 2

DISTRIBUTION OF VILLAGE HOUSEHOLDS AND LAND BY CASTE - 1970 AND 1987

Caste	1970				1987			
	No. of households	No. of persons	Average no. of persons per household	Land owned (in bighas)	No. of households	No. of persons	Average no. of persons per household	Land owned (in bighas)
Brahmin	48	296	6.17	1642.50	63	438	6.95	1362.50
Jat	12	96	8.00	434.00	21	129	6.14	386.50
Bania	1	1	1.00	0.00	0	0	0.00	0.00
Maithul	4	25	6.25	0.00	4	18	4.50	0.00
Nai	4	19	4.75	7.50	2	11	5.50	5.50
Mali	2	7	3.50	0.00	2	19	9.50	0.00
Dhimar	4	26	6.50	12.00	3	24	8.00	22.00
Baghele	10	67	6.70	476.00	12	86	7.17	520.00
Kachchi	2	32	16.00	307.00	7	52	7.43	108.50
Jogi	3	14	4.67	0.00	3	15	5.00	0.00
Musalman Faqir	25	129	5.16	98.00	34	193	5.68	77.00
Manihar	3	12	4.00	0.00	4	29	7.25	0.00
Teli	3	16	5.33	0.00	2	5	2.50	0.00
Karhere	4	12	3.00	0.00	1	5	5.00	0.00
Kumhar	10	74	7.40	7.00	24	118	4.92	17.00
Khatik	12	64	5.33	60.00	12	71	5.92	96.25
Darzi	3	10	3.33	0.00	3	11	3.67	0.00
Jatav	20	102	5.10	112.00	27	129	4.78	88.75
Dhobi	8	68	8.50	103.00	15	110	7.33	94.90
Kanjara	1	8	8.00	0.00	0	0	0.00	0.00
Harijan Balmiki	6	28	4.67	4.00	11	53	4.82	8.75
Total	**185**	**1106**	**5.98**	**3263.00**	**250**	**1516**	**6.06**	**2787.65**

Table 3

SIZE DISTRIBUTION OF HOUSEHOLD LAND OWNERSHIP - 1970

Holding size (in bighas)	No. of households	% of total households	No. of persons	% of total persons	Average no. of persons per household	Land owned by size class	
						Area (in bighas)	% of total area
0	97	52.4	487	44.0	5.02	0.00	0.0
0.1 - 2.5	4	2.2	17	1.5	4.25	5.50	0.2
2.5 - 5.0	4	2.2	22	2.0	5.50	13.00	0.4
5.0 - 7.5	3	1.6	12	1.1	4.00	21.00	0.6
7.5 - 10.0	1	0.5	8	0.7	8.00	8.00	0.2
10 - 15	12	6.5	53	4.8	4.42	137.00	4.2
15 - 20	6	3.2	35	3.2	5.83	94.00	2.9
20 - 25	2	1.1	12	1.1	6.00	40.00	1.2
25 - 30	13	7.0	107	9.7	8.23	329.00	10.1
30 - 40	10	5.4	63	5.7	6.30	330.00	10.1
40 - 50	7	3.8	32	2.9	4.57	315.00	9.7
50 - 75	16	8.6	157	14.2	9.81	927.50	28.4
75 - 100	6	3.2	61	5.5	10.17	481.00	14.7
> 100	4	2.2	40	3.6	10.00	562.00	17.2
Total	**185**	**100.0**	**1106**	**100.0**	**5.98**	**3263.00**	**100.0**

Table 4

SIZE DISTRIBUTION OF HOUSEHOLD LAND OWNERSHIP - 1987

Holding size (in bighas)	No. of households	% of total households	No. of persons	% of total persons	Average no. of persons per household	Land owned by size class	
						Area (in bighas)	% of total area
0	114	45.6	586	38.7	5.14	0.00	0.0
0.1 - 1.0	9	3.6	48	3.2	5.33	6.50	0.2
1.0 - 2.5	10	4.0	69	4.6	6.90	12.90	0.5
2.5 - 5.0	8	3.2	34	2.2	4.25	27.25	1.0
5.0 - 7.5	5	2.0	31	2.0	6.20	30.50	1.1
7.5 - 10	17	6.8	100	6.6	5.88	139.50	5.0
10 - 15	26	10.4	152	10.0	5.85	301.00	10.8
15 - 20	9	3.6	58	3.8	6.44	146.00	5.2
20 - 25	8	3.2	55	3.6	6.88	174.00	6.2
25 - 30	10	4.0	75	4.9	7.50	270.50	9.7
30 - 40	12	4.8	107	7.1	8.92	393.50	14.1
40 - 50	11	4.4	92	6.1	8.36	477.00	17.1
50 - 75	5	2.0	59	3.9	11.80	305.00	10.9
75 - 100	5	2.0	43	2.8	8.60	404.00	14.5
> 100	1	0.4	7	0.5	7.00	100.00	3.6
Total	**250**	**100.0**	**1516**	**100.0**	**6.06**	**2787.65**	**100.0**

Table 5

LAND USE AND CROPPING INTENSITY

		1969-70	1986-87
		(bighas)	
1.	Land owned	3263	2787.65
2.	Uncultivated	27	28.5
3.	Net Lease in (Kharif)	130.5	240.75
4.	Land Operated (Kharif) [1+3]	3393.5	3028.4
5.	Seasonal Fallow (Kharif)	492.75	493.5
6.	Area Sown (Kharif) [4-2-5]	2873.5	2506.4
7.	Net Lease in (Rabi)	233.5	214.75
8.	Land Operated (Rabi) [1+7]	3496.5	3002.4
9.	Seasonal Fallow (Rabi)	10	31
10.	Area Sown (Rabi) [8-2-9]	3459.5	2942.9
11.	Area Sown (Zaid)	32	130.5
12.	Gross Area Sown (GAS) [6+10+11]	6365.0	5598.8**
13.*	Area under orchards/perennial crops and crops with duration of more than one season	207.5	203
	Cropping Intensity [12 ÷ 0.5 (4+8)]	1.85	1.86

* Crop weight 2 i.e. included in both kharif and rabi seasons.

** As a result of a few cases of quadruple cropping and intercropping on orchard lands, GAS is greater than total area sown in the three seasons.

Table 6

AREA AND PRODUCTION UNDER MAJOR CROPS - 1970 AND 1987

Crops	Area (bighas)		Production (quintals)	
	1970	1987	1970	1987
1. Wheat HYV	1781.00 (27.98)	1758.65 (31.41)	2498.10	4065.97
2. Wheat desi	454.95 (7.15)	-- (--)	416.68	--
3. Bajra	1061.45 (16.68)	833.07 (14.88)	716.48	857.20
4. Maize	489.60 (7.69)	574.33 (10.26)	286.08	609.75
5. Cotton	378.60 (5.95)	328.50 (5.87)	181.06	258.95
6. Sugarcane*	241.00 (3.79)	339.00 (6.05)	3000.00	6582.35
7. Gram	1.00 (neg.)	188.25 (3.36)	0.60	192.65
8. Barley	89.50 (1.41)	223.25 (3.99)	86.00	425.25
9. Peas	154.00 (2.41)	149.50 (2.67)	171.60	215.43
10. Arhar**	78.00 (1.23)	122.50 (2.19)	14.80	70.47
11. Bhindi	-- (--)	122.25 (2.18)	--	152.38
12. Gwar-Bajra	214.00 (3.36)	12 (0.20)	140.80	60.00
13. Wheat-Gram	259.45 (4.08)	-- (--)	255.48	--
14. Peas-Barley	215.10 (3.38)	-- (--)	238.64	--
15. Laha	-- (--)	369.25 (6.60)	--	329.90
16. Moong	-- (--)	84.50 (1.51)	--	22.57
17. Other Crops	947.85 (14.89)	493.75 (8.82)		
Gross Area Sown (All Crops)	**6365.00 (100.00)**	**5598.80 (100.00)**		

* Area sown using crop weight 2 in both years.
** Area sown using crop weight 2 in 1970 but not in 1987.

N.B.
1. Figures in parentheses are percentages of gross area sown.
2. Fodder and minor crops are excluded.

Table 7

YIELDS OF MAJOR CROPS - 1970 AND 1987

Crop	Yields (quintals/bigha)		Annual rate of growth (%)
	1970	1987	
1. Wheat HYV	1.40	2.31	2.99
2. Wheat Desi	0.92	--	--
3. Bajra	0.67	1.03	2.56
4. Maize	0.58	1.06	3.61
5. Cotton	0.48	0.79	2.97
6. Sugarcane	24.90	38.83	2.65
7. Barley	0.96	1.90	4.10
8. Peas	1.12	1.44	1.49
9. Arhar	0.38	0.58	2.52

Table 8
OCCUPATIONAL DISTRIBUTION OF WORKERS/
HOUSEHOLDS - VILLAGE RESIDENTS - 1970 AND 1987

Occupation	1970		1987	
	No. of workers in occupation	No. of households involved	No. of workers in occupation	No. of households involved
1. Cultivation				
1.1 Own cultivation	97	59	274	85
1.2 Own and tenant cultivation	50	21	144	40
1.3 Tenant cultivation	45	28	97	43
2. Agricultural Labour				
2.1 Casual labour	79	62	15	14
2.2 Contract labour	18	13	66	44
2.3 Permanent/semi-permanent labour	12	10	4	4
2.4 Casual & contract labour	21	20	56	42
2.5 Casual & semi-permanent labour	1	1	0	0
2.6 Labour in household of kin	0	0	2	1
3. Non-agricultural Workers				
3.1 Bhatta labour	7	5	27	15
3.2 Housebuilding & repair	4	3	5	4
3.3 Other manual labour	4	4	2	2
3.4 Clerical and administrative workers	2	2	2	2
4. Self-employment (Production)				
4.1 Production other than agriculture	8	5	9	5
4.2 Jajmani production	19	14	6	6
5. Self-employment (Trade)				
5.1 Village grocer	10	7	13	12
5.2 Hawkers & petty trade	26	19	11	11
5.3 Other	19	16	22	21
6. Services				
6.1 Government Service	6	5	16	16
6.2 Jajmani services	20	16	12	11
6.3 Agri-processing	11	7	8	5
6.4 Muleteer	19	15	15	12
6.5 Other transport	5	5	11	11
7. Professions				
7.1 Teaching	9	9	16	15
7.2 Bandplaying	22	17	22	19
7.3 Others	11	11	18	17

	1970	1987
Total Occupations	537	893
Total Occupations other than Cultivation	345	378
Total Workers	323	643

Table 9

CLASSIFICATION OF HOUSEHOLDS BY ECONOMIC STRATA
1970 AND 1987

Year →	1970		1987	
Economic Strata ↓	Number of households	As percentage of total households	Number of households	As percentage of total households
RICH				
Peasant (mainly agri.)	33	17.8	20	8.0
Peasant (mainly non-agri.)	0	0	16	6.4
Non-peasant	3	1.6	3	1.2
Total	**36**	**19.5**	**39**	**15.6**
MIDDLE				
Peasant (mainly agri.)	30	16.2	28	11.2
Peasant (mainly non-agri.)	4	2.2	20	8.0
Non-peasant	5	2.7	15	6.0
Total	**39**	**21.1**	**63**	**25.2**
POOR				
Peasant (mainly agri.)	18	9.7	28	11.2
Peasant (mainly non-agri.)	23	12.4	55	22.0
Non-peasant	69	37.3	65	26.0
Total	**110**	**59.5**	**148**	**59.2**
TOTAL				
Peasant (mainly agri.)	81	43.8	76	30.4
Peasant (mainly non-agri.)	27	14.6	91	36.4
Non-peasant	77	41.6	83	33.2
Total	**185**	**100.0**	**250**	**100.0**

Table 10

MOBILITY OF 'PARENT' HOUSEHOLDS BY ECONOMIC STRATA : 1970 TO 1987

1970 ↓ / 1987 →	RICH				MIDDLE				POOR				TOTAL 1970				Migrated	Died	TOTAL 1970*			
	Peasant		N-P	Ttl	Peasant		N-P	Ttl	Peasant		N-P	Ttl	Peasant		N-P	Ttl			Peasant		N-P	Ttl
	A	n-A			A	n-A			A	n-A			A	n-A					A	n-A		
RICH																						
Peasant (A)	15	4	0	19	6	3	0	9	2	0	2	4	23	7	2	32	1	0	33	-	-	33
Peasant (non-A)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	-	0
Non-peasant	0	1	0	1	0	0	1	1	0	0	0	0	0	1	1	2	0	1	-	-	3	3
Total	15	5	0	20	6	3	1	10	2	0	2	4	23	8	3	34	1	1	33	0	3	36
MIDDLE																						
Peasant (A)	3	2	0	5	11	2	2	15	3	2	4	9	17	6	6	29	1	0	30	-	-	30
Peasant (non-A)	0	0	0	0	0	0	1	1	2	0	1	3	2	0	2	4	0	0	-	4	-	4
Non-peasant	0	2	0	2	0	2	1	3	0	0	0	0	0	4	1	5	0	0	-	-	5	5
Total	3	4	0	7	11	4	4	19	5	2	5	12	19	10	9	38	1	0	30	4	5	39
POOR																						
Peasant (A)	0	0	0	0	3	2	0	5	9	0	2	11	12	2	2	16	1	1	18	-	-	18
Peasant (non-A)	0	0	0	0	0	3	0	3	0	10	9	19	3	10	9	22	1	0	-	23	-	23
Non-peasant	0	0	1	1	1	1	2	4	0	25	22	47	1	26	25	52	12	5	-	-	69	69
Total	0	0	1	1	4	6	2	12	9	35	33	77	16	38	36	90	14	6	18	23	69	110
TOTAL 1987																						
Peasant (A)	18	6	0	24	20	7	2	29	14	2	8	24	52	15	10	77	3	1	81	-	-	81
Peasant (non-A)	0	0	0	0	0	3	1	4	2	10	10	22	2	13	11	26	1	0	-	27	-	27
Non-peasant	0	3	1	4	1	3	4	8	0	25	22	47	1	31	27	59	12	6	-	-	77	77
Total	18	9	1	28	21	13	7	41	16	37	40	93	55	59	48	162	16	7	81	27	77	185

* All households.

Table 11

MOBILITY OF 'STEM' HOUSEHOLDS BY ECONOMIC STRATA : 1970 TO 1987

1987 → / 1970 ↓	RICH				MIDDLE				POOR				TOTAL 1970			
	Peasant		N-P	Ttl	Peasant		N-P	Ttl	Peasant		N-P	Ttl	Peasant		N-P	Ttl
	A	n-A			A	n-A			A	n-A			A	n-A		
RICH																
Peasant (A)	2	5	1	8	4	0	0	4	6	1	2	9	12	6	3	21
Peasant (non-A)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-peasant	1	0	0	1	0	0	0	0	0	1	0	1	1	1	0	2
Total	3	5	1	9	4	0	0	4	6	2	2	10	13	7	3	23
MIDDLE																
Peasant (A)	0	1	0	1	4	5	3	12	5	1	4	10	9	7	7	23
Peasant (non-A)	0	0	0	0	0	1	0	1	0	2	2	4	0	3	2	5
Non-peasant	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	2	0	2	4	6	3	13	5	3	6	14	9	11	9	29
POOR																
Peasant (A)	0	0	0	0	0	0	1	1	1	0	0	1	1	0	1	2
Peasant (non-A)	0	0	0	0	0	0	0	0	0	3	2	5	0	3	2	5
Non-peasant	0	0	1	1	0	1	2	3	0	6	12	18	0	7	15	22
Total	0	0	1	1	0	1	3	4	1	9	14	24	1	10	18	29
TOTAL 1987																
Peasant (A)	2	6	1	9	8	5	4	17	12	2	6	20	22	13	11	36
Peasant (non-A)	0	0	0	0	0	1	0	1	0	5	4	9	0	6	4	10
Non-peasant	1	1	1	3	0	1	2	3	0	7	12	19	1	9	15	25
Total	3	7	2	12	8	7	6	21	12	14	22	48	23	28	30	81

Table 12

MOBILITY OF HOUSEHOLDS BY ECONOMIC STRATA : 1970 TO 1987

1970 ↓ / 1987 →	RICH				MIDDLE				POOR				TOTAL 1970				Migrated	Died	TOTAL 1970*			
	Peasant		N-P	Ttl	Peasant		N-P	Ttl	Peasant		N-P	Ttl	Peasant		N-P	Ttl			Peasant		N-P	Ttl
	A	n-A			A	n-A			A	n-A			A	n-A					A	n-A		
RICH																						
Peasant (A)	17	9	1	27	10	3	0	13	8	1	4	13	35	13	5	53	1	0	54	-	-	54
Peasant (non-A)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	-	0
Non-peasant	1	1	0	2	0	0	1	1	0	1	0	1	1	2	1	4	0	1	-	-	5	5
Total	**18**	**10**	**1**	**29**	**10**	**3**	**1**	**14**	**8**	**2**	**4**	**14**	**36**	**15**	**6**	**57**	**1**	**1**	**54**	**0**	**5**	**59**
MIDDLE																						
Peasant (A)	3**	3	0	3	15	7	5	27	8	3	8	19	26	13	13	52	1	0	53	-	-	53
Peasant (non-A)	0	0	0	0	0	1	1	2	2	2	3	7	2	3	4	9	0	0	-	9	-	9
Non-peasant	0	3	0	3	0	2	1	3	0	0	0	0	0	5	1	6	0	0	-	-	6	6
Total	**3**	**3**	**0**	**6**	**15**	**10**	**7**	**32**	**10**	**5**	**11**	**26**	**28**	**21**	**18**	**67**	**1**	**0**	**53**	**9**	**6**	**68**
POOR																						
Peasant (A)	0	0	0	0	3**	2	1	6	10	0	2	12	13	2	3	18	1	1	20	-	-	20
Peasant (non-A)	0	0	0	0	0	3	0	3	0	13	11	24	0	16	11	27	1	0	-	28	-	28
Non-peasant	0	0	2	2	1	2	4	7	0	31	34	65	1	33	40	74	12	5	-	-	91	91
Total	**0**	**0**	**2**	**2**	**4**	**7**	**5**	**16**	**10**	**44**	**47**	**101**	**14**	**51**	**54**	**119**	**14**	**6**	**20**	**28**	**91**	**139**
TOTAL 1987																						
Peasant (A)	20	12	1	33	28	12	6	46	26	4	14	44	74	28	21	123	3	1	127	-	-	127
Peasant (non-A)	0	0	0	0	0	4	1	5	2	15	14	31	2	19	15	36	1	0	-	37	-	37
Non-peasant	1	4	2	7	1	4	6	11	0	32	34	66	2	40	42	84	12	6	-	-	102	102
Total	**21**	**16**	**3**	**40**	**29**	**20**	**13**	**62**	**28**	**51**	**62**	**141**	**78**	**87**	**78**	**243**	**16**	**7**	**127**	**37**	**102**	**266**
IMMIGRATED	0	0	0	0	0	0	2	2	0	4	3	7	0	4	5	9	-	-				
TOTAL 1987*																						
Peasant (A)	21	-	-	21	29	-	-	29	28	-	-	28	78	-	-	78						
Peasant (non-A)	-	16	-	16	-	20	-	20	-	55	-	55	-	91	-	91						
Non-peasant	-	-	3	3	-	-	15	15	-	-	65	65	-	-	83	83						
Total	**21**	**16**	**3**	**40**	**29**	**20**	**15**	**64**	**28**	**55**	**65**	**148**	**78**	**91**	**83**	**252**						

* All households.

** Cell count includes one additional case each on account of merger of households.

Table 13

DISTRIBUTION OF HOUSEHOLDS BY CASTE AND ECONOMIC STRATA
1970 AND 1987

Economic Strata →	RICH				MIDDLE				POOR				TOTAL
	Peasant		N-P	Ttl	Peasant		N-P	Ttl	Peasant		N-P	Ttl	
Caste ↓	A	n-A			A	n-A			A	n-A			
1970													
Brahmin	16	-	3	19	17	-	4	21	5	-	3	8	48
Jat	5	-	-	5	1	-	-	1	5	1	-	6	12
Bania	-	-	-	-	-	-	-	-	-	-	1	1	1
Maithul	-	-	-	-	-	1	1	2	-	-	2	2	4
Nai	-	-	-	-	-	-	-	-	-	3	1	4	4
Mali	-	-	-	-	-	-	-	-	-	-	2	2	2
Dhimar	1	-	-	1	-	-	-	-	1	-	2	3	4
Baghele	8	-	-	8	2	-	-	2	-	-	-	-	10
Kachchi	1	-	-	1	1	-	-	1	-	-	-	-	2
Jogi	-	-	-	-	-	-	-	-	-	2	1	3	3
Mussalman (Faqir)	-	-	-	-	3	-	-	3	2	4	16	22	25
Manihar	-	-	-	-	-	-	-	-	-	1	2	3	3
Teli	-	-	-	-	-	-	-	-	-	1	2	3	3
Karhere	-	-	-	-	-	-	-	-	-	-	4	4	4
Kumhar	-	-	-	-	-	2	-	2	-	2	6	8	10
Khatik	1	-	-	1	1	-	-	1	-	4	6	10	12
Darzi	-	-	-	0	-	-	-	-	-	-	3	3	3
Jatav	1	-	-	1	2	-	-	2	5	3	9	17	20
Dhobi	-	-	-	-	3	1	-	4	-	2	2	4	8
Kanjara	-	-	-	-	-	-	-	-	-	-	1	1	1
Harijan	-	-	-	-	-	-	-	-	-	-	6	6	6
Total 1970	33	-	3	36	30	4	5	39	18	23	69	110	185
1987													
Brahmin	7	12	1	20	13	9	5	27	7	4	5	16	63
Jat	2	1	-	3	4	1	-	5	10	-	3	13	21
Bania	-	-	-	-	-	-	-	-	-	-	-	-	-
Maithul	-	1	-	1	-	-	1	1	-	2	-	2	4
Nai	-	-	-	-	-	-	-	-	-	2	-	2	2
Mali	-	-	-	-	-	-	-	-	-	1	1	2	2
Dhimar	-	-	-	-	1	-	-	1	-	2	-	2	3
Baghele	9	-	1	10	1	-	-	1	-	-	1	1	12
Kachchi	-	2	-	2	3	-	-	3	1	-	1	2	7
Jogi	-	-	-	-	-	1	1	2	-	-	1	1	3
Mussalman (Faqir)	-	-	1	1	2	1	2	5	3	5	20	28	34
Manihar	-	-	-	-	-	-	-	-	-	2	2	4	4
Teli	-	-	-	-	-	-	-	-	-	-	2	2	2
Karhere	-	-	-	-	-	-	-	-	-	1	-	1	1
Kumhar	-	-	-	-	-	2	-	2	1	11	10	22	24
Khatik	2	-	-	2	-	-	-	-	-	5	5	10	12
Darzi	-	-	-	-	-	-	-	-	-	-	3	3	3
Jatav	-	-	-	-	2	3	5	10	2	6	9	17	27
Dhobi	-	-	-	-	2	3	1	6	4	3	2	9	15
Kanjara	-	-	-	-	-	-	-	-	-	-	-	-	-
Harijan	-	-	-	-	-	-	-	-	-	11	-	11	11
Total 1987	20	16	3	39	28	20	15	63	28	55	65	148	250

Table 14

CROSS-TABULATION OF HOUSEHOLDS BY LANDOWNERSHIP AND ECONOMIC STRATA
1970 AND 1987

Land owned (bighas) → / Economic Strata ↓	0	0.1-25	25-50	50+	Total no. of households in economic strata
1970					
RICH					
Peasant (mainly agri.)	1	0	9	23	33
Peasant (mainly non-agri.)	0	0	0	0	0
Non-peasant	0	1	1	1	3
Total	1	1	10	24	36
MIDDLE					
Peasant (mainly agri.)	5	4	19	2	30
Peasant (mainly non-agri.)	3	1	0	0	4
Non-peasant	4	1	0	0	5
Total	12	6	19	2	39
POOR					
Peasant (mainly agri.)	3	14	1	0	18
Peasant (mainly non-agri.)	15	8	0	0	23
Non-peasant	66	3	0	0	69
Total	84	25	1	0	110
Total no. of households in size class	97	32	30	26	185
1987					
RICH					
Peasant (mainly agri.)	0	1	10	9	20
Peasant (mainly non-agri.)	1	9	5	1	16
Non-peasant	2	1	0	0	3
Total	3	11	15	10	39
MIDDLE					
Peasant (mainly agri.)	0	15	13	0	28
Peasant (mainly non-agri.)	8	8	3	1	20
Non-peasant	13	2	0	0	15
Total	21	25	16	1	63
POOR					
Peasant (mainly agri.)	3	23	2	0	28
Peasant (mainly non-agri.)	29	26	0	0	55
Non-peasant	58	7	0	0	65
Total	90	56	2	0	148
Total no. of households in size class	114	92	33	11	250

Table 15

HOUSEHOLD OWNERSHIP OF SELECTED ASSETS BY ECONOMIC STRATA - 1970

Asset →		Milch Cattle			Draught Cattle			Tractors			Electric Tubewells		
Economic Strata ↓	No. of house-holds in economic strata	No. of full-share owning house-holds (F.S.)	No. of part-share owning house-holds (P.S.)	No. of units	F.S.	P.S.	No. of units	F.S.	P.S.	No. of units	F.S.	P.S.	No. of units
RICH													
Peasant													
- Mainly Agri	33	30	0	68	30	0	76	2	2	3	8	8	12
- Mainly Non-Agri	0	-	-	-	-	-	-	-	-	-	-	-	-
Non-Peasant	3	3	0	6	1	0	2	0	0	0	0	1	0.5
Total	**36**	**33**	**0**	**74**	**31**	**0**	**78**	**2**	**2**	**3**	**8**	**9**	**12.5**
MIDDLE													
Peasant													
- Mainly Agri	30	28	0	39	25	0	47	0	0	0	0	1	0.5
- Mainly Non-Agri	4	4	1	6.5	1	0	2	0	0	0	0	0	0
Non-Peasant	5	4	0	6	0	0	0	0	0	0	0	0	0
Total	**39**	**36**	**1**	**51.5**	**26**	**0**	**49**	**0**	**0**	**0**	**0**	**1**	**0.5**
POOR													
Peasant													
- Mainly Agri	18	14	0	19	7	0	11	0	0	0	0	0	0
- Mainly Non-Agri	23	10	1	12.5	2	0	4	0	0	0	0	0	0
Non-Peasant	69	25	3	32	0	0	0	0	0	0	0	0	0
Total	**110**	**49**	**4**	**63.5**	**9**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL	**185**	**118**	**5**	**189**	**66**	**0**	**142**	**2**	**2**	**3**	**8**	**10**	**13**

Table 16

HOUSEHOLD OWNERSHIP OF SELECTED ASSETS BY ECONOMIC STRATA - 1987

Asset → / Economic Strata ↓	No.of households in economic strata	Milch Cattle			Draught Cattle			Tractors			Electric Tubewells			Diesel Engines			Threshers		
		No.of full-share owning households (F.S.)	No.of part-share owning households (P.S.)	No.of units	F.S.	P.S.	No.of units	F.S.	P.S.	No.of units	F.S.	P.S.	No.of units	F.S.	P.S.	No.of units	F.S.	P.S.	No.of units
RICH																			
Peasant																			
- Mainly Agri	20	19	0	51	14	0	37	3	1	3.5	10	4	12.83	2	0	2	8	1	8.5
- Mainly Non-Agri	16	13	0	29	5	0	9	1	0	1	2	3	3.28	4	0	4	2	0	2
Non-Peasant	3	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	39	34	0	83	19	0	46	4	1	4.5	12	7	16.11	6	0	6	10	1	10.5
MIDDLE																			
Peasant																			
- Mainly Agri	28	26	0	52	13	0	27	0	1	0.5	3	9	6.58	3	0	3	3	2	3.9
- Mainly Non-Agri	20	15	0	22	2	0	5	0	0	0	2	1	3.11	1	1	1.2	1	1	1.4
Non-Peasant	15	8	0	10	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
Total	63	49	0	84	15	0	32	0	1	0.5	6	10	10.69	4	1	4.2	4	3	5.3
POOR																			
Peasant																			
- Mainly Agri	28	26	0	41	11	0	12	0	0	0	1	10	3.20	1	3	1.9	0	4	1.2
- Mainly Non-Agri	55	38	0	52	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Non-Peasant	65	21	0	25	1	0	1	0	0	0	0	2	1	1	2	1.9	0	0	0
Total	148	85	0	118	15	0	16	0	0	0	1	12	4.20	2	5	3.8	0	4	1.2
TOTAL	250	168	0	285	49	0	94	4	2	5	19	29	31	12	6	14	14	8	17

Table 17

DISTRIBUTION OF HOUSEHOLDS BY ECONOMIC STRATA, EDUCATION QUOTIENT AND MAXIMUM YEARS OF EDUCATION OF ANY HOUSEHOLD MEMBER 1970 AND 1987

Years of education/ Education quotient → Economic strata ↓	0	1-4	5-8	9-12	13-15	16+	Total	Average Education Quotient*
1970								
RICH								
Peasant (mainly agri.)	0	0	11	21	1	0	33	0.28
Peasant (mainly non-agri.)	0	0	0	0	0	0	0	--
Non-peasant	1	0	1	1	0	0	3	0.14
Total	1	0	12	22	1	0	36	0.27 (0.14)
MIDDLE								
Peasant (mainly agri.)	4	4	11	10	1	0	30	0.17
Peasant (mainly non-agri.)	2	0	1	1	0	0	4	0.12
Non-peasant	0	0	2	2	1	0	5	0.30
Total	6	4	14	13	2	0	39	0.18 (0.18)
POOR								
Peasant (mainly agri.)	8	4	5	1	0	0	18	0.08
Peasant (mainly non-agri.)	8	5	6	4	0	0	23	0.08
Non-peasant	33	11	18	7	0	0	69	0.09
Total	49	20	29	12	0	0	110	0.08 (0.11)
TOTAL	56	24	55	47	3	0	185	0.14 (0.14)
1987								
RICH								
Peasant (mainly agri.)	0	0	1	9	6	4	20	0.47
Peasant (mainly non-agri.)	0	0	0	8	3	5	16	0.51
Non-peasant	0	0	2	1	0	0	3	0.39
Total	0	0	3	18	9	9	39	0.48 (0.19)
MIDDLE								
Peasant (mainly agri.)	2	2	2	18	3	1	28	0.31
Peasant (mainly non-agri.)	1	3	5	10	1	0	20	0.29
Non-peasant	1	2	4	5	3	0	15	0.33
Total	4	7	11	33	7	1	63	0.31 (0.19)
POOR								
Peasant (mainly agri.)	2	5	10	9	2	0	28	0.26
Peasant (mainly non-agri.)	12	9	19	13	2	0	55	0.16
Non-peasant	23	13	15	13	1	0	65	0.13
Total	37	27	44	35	5	0	148	0.17 (0.15)
TOTAL	41	34	58	86	21	10	250	0.25 (0.21)

N.B. Figures in parentheses are standard deviations.

* Education quotient (E) is defined for an individual over 5 years of age as $E = y / (x - 5)$, where y = completed years of education and x = age of individual, subject to $(x - 5)$ taking a maximum value of 16.

Table 18

END OF HOUSEHOLDS SINCE 1970

S. no.	House-hold no. (1970)	Name of head	Caste	Econ-omic strata (1970)	Land owned (big-has)	No. of persons in house-hold	Year of end of house-hold	Remarks
1.	1025	Bhabhuti Ram	Jatav	Poor non-peasant	0	1	1979	Died aged 79.
2.	1042	Ram Chander	Maithul	Poor non-peasant	0	4	1982	Daughter married and wife died in 1979. Head died in 1982. One son resident outside village since before 1970. Daughter-in-law migrated in 1982.
3.	1053	Smt. Triveni (W)	Bania	Poor non-peasant	0	1	1971	Sole Bania household in village. Head was widow with two daughters married outside village. Unoccupied house in village still exists.
4.	1077	Chobh Singh	Karhere	Poor non-peasant	0	1	1972	Single person. Died in 1972.
5.	1098	Nek Ram	Dhimar	Poor peasant (agri.)	12	1	1976	Married granddaughter, who had immigrated to village earlier, inherited land.
6.	1140	Harcharan Lal Pathak	Brahmin	Rich non-peasant	30	1	1976	Bachelor. Land distributed among cousins.
7.	1161	Shiv Dayal	Brahmin	Poor non-peasant	10	1	1984	Bachelor. Land distributed among brother and nephews.

Table 19

MIGRATION OF COMPLETE HOUSEHOLDS FROM VILLAGE SINCE 1970

S. no.	House-hold no. (1970)	Name of head	Econ-omic strata (1970)	Caste	Land owned at time of migra-tion	Year of migration	Migrated to	No.of persons migra-ting	Occupation(s) in village prior to migration	New occupation(s)	Links in village	Remarks
1.	1007	Sukkhan	Poor non-peasant	Teli	0	1977	Delhi	5	Agricultural labourer	Fruit-seller	Brother still resident.	Head of household died and family migrated. Other brothers of head migrated earlier; retain share in family house in village.
2.	1014	Ram Parshad	Middle peasant (agri.)	Baghele	0	1971	Delhi	4	Tenant culti-vator, cart driver	Petty hawker	Brother.	Only landless Baghele household in the village. Forefathers were cheated out of their land by other Baghele families.
3.	1031	Gulhi	Poor non-peasant	Kanjars	0	1984	Aligarh	5	Shoeshine boy,	Shoeshine boy	Nil.	Only family of low caste Kanjaras. Head died in 1981 and his wife in 1984. Son migrated in 1984. Sold house.
4.	1035	Chhuttan Khan	Poor non-peasant	Musselman	0	1977	Faridabad (Haryana)	7	Bandplayer, agricultural labourer, tailor	Bandplayer	Nil.	Sold house before leaving.
5.	1047	Ram Dayal	Poor non-peasant	Jogi	0	1971	Karauria (Aligarh distt.)	3	Petty trader	Petty trader	Brother.	--
6.	1050	Rajan Lal	Poor non-peasant	Dhobi	0	1971	Not known	1	Tractor driver	Not known	Nil.	Came to village for one year in 1970 to work as tractor driver and left the following year.
7.	1057	Jagannath Prasad	Rich peasant (agri.)	Brahmin	8	1977	Hardwar	4	Cultivator, priest	Priest	Land still owned and leased out.	Migrated to stay with son who is working as an engineer with BHEL, Hardwar.
8.	1078	Bhath Singh	Poor non-peasant	Karhere	0	1978	Delhi	1	Dairying	Nil	Still owns house in village.	Three sons living in Aligarh and Delhi. Wife migrated after death of husband.
9.	1079	Charan Singh	Poor non-peasant	Karhere	0	1984	Bajanto (Aligarh distt.)	1	Cotton ginning	Nil	Still owns house in village.	Widower and old man. Went to live with daughter.
10.	1096	Ghooray Lal	Poor peasant (agri.)	Jatav	0	1981	Not known	1	Tenant cultiva-tion, agricul-tural labourer	Nil	Nil.	Wife migrated to own village after death of head of household.
11.	1115	Katori (W)	Poor non-peasant	Khatik	0	1972	Delhi	2	Nil	Govt. service	Cousins still in village.	Head of household died and son and daughter migrated to stay with elder son.
12.	1122	Dulari (W)	Poor non-peasant	Khatik	0	1973	Delhi	1	Nil	Nil	Nil.	Head died, daughter left to join father who had migrated earlier along with son. House sold.
13.	1124	Kapoori (W)	Poor non-peasant	Nai	1.25	1976	Balram Nagla (Aligarh distt.)	5	Nil	Nil	Land still owned and leased out.	Born in the village, inherited land and stayed on after marriage. Finally migrated to husband's village where he works as barber and cultivator.
14.	1125	Bhaggodevi (W)	Poor peasant (non-agri.)	Nai	1.25	1983	Not known	1	Shopkeeperess	Not known	Nil.	Sold land and house and migrated to stay with married daughter. Subsequently deceased.
15.	1154	Allah Noor	Poor non-peasant	Musselman	0	1977	Aligarh	4	Nil	Begging	Nil.	Was ill and handicapped with minor children. Migrated to work as beggar. Sold residential plot given by village panchayat.
16.	1173	Allah Mehr	Poor non-peasant	Musselman	0	1981	Delhi	1	Bandplayer, agricultural labourer	Fruit seller	Brothers still in village.	Wife died and head of family migrated.

Table 20

IMMIGRATION OF COMPLETE HOUSEHOLDS INTO VILLAGE SINCE 1970

S. no.	House-hold no. (1987)	Name of head	Econ-omic strata (1987)	Caste	Land owned (1987) (in big-has)	Year of immig-ration	Migrated from	Earlier Occupation(s)	No. of per-sons immig-rating	Reasons for immigrating	Remarks
1.	2026	Bhanta	Poor peasant (non-agri.)	Harijan	0	1979	Bombay	Factory labourer	4	Closure of factory.	Migrated from Parhil in 1968 to Bombay.
2.	2044	Jai Lal	Poor peasant	Maithul	0	1976	Achru (Mathura distt.)	Carpenter	3	Village (Achru) flood-prone. Good opportunities to practise occupation in native village.	Migrated from Parhil in 1946. Inherited father's house in village.
3.	2058	Rambabu	Poor non-peasant	Jatav	0	1983	Atrauli (Aligarh distt.)	Tailor	3	Wife inherited 3 bighas of land and house in village.	Staying out since 1984. Wife now head of household.
4.	2076	Akali Ram	Middle non-peasant	Jatav	0	1971	Delhi	Bhatta labour	2	Absence of additional labour opportunities.	Outside village for full year in 1970, otherwise seasonal migrant.
5.	2077	Kesar (W)	Poor Non-peasant	Jatav	0	1971	Magdo (Gonda distt.)	Nil	4	Widowed.	--
6.	2104	Banwari Lal	Middle non-peasant	Jogi	0	1973	Sarai Nur Mahal (Agra distt.)	Petty hawker	4	Not being able to get married.	Returned to Parhil with father who had migrated to his wife's village earlier.
7.	2165	Vasudev	Poor peasant (non-agri.)	Khatik	10	1981	Budhia Nagla (Aligarh distt.)	Cultivation	6	To join brother who had immig-rated in 1942 to paternal aunt's village i.e. Parhil.	Sold 25 bighas of land and bought 10 bighas in Parhil. Two brothers still live in Budhia Nagla.
8.	2171	Bhika Ram	Poor peasant (non-agri.)	Harijan	0.75	1976	Cal-cutta	Nil	3	To take up residence in father's village.	Father is working as sweeper in Calcutta since 1957.
9.	2262	Bhagwandevi (W)	Poor non-peasant	Brahmin	0	1982	Kachaura (Aligarh distt.)	Nil	1	Separation from husband.	Destitute. Originally of this village. Married out over 50 years ago. No immediate relative in village now.

Table 21

DISTRIBUTION OF MIGRANTS BY ECONOMIC STRATA OF LINK HOUSEHOLD IN VILLAGE
1970 AND 1987

Economic Strata	1970			1987				
		Permanent Migrants			Permanent Migrants		Seasonal Migrants	
	No. of households in economic strata	No. of migrants	No. of households with family members staying out	No. of households in economic strata	No. of migrants	No. of households with family members staying out	No. of migrants	No. of households affected
RICH								
Peasant (A)	33	7	7	20	13	8	1	1
Peasant (non-A)	0	--	--	16	6	6	4	3
Non-peasant	3	2	2	3	1	1	--	--
Total	36	9	9	39	20	15	5	4
MIDDLE								
Peasant (A)	30	4	4	28	10	6	1	1
Peasant (non-A)	4	4	4	20	8	6	5	4
Non-peasant	5	5	2	15	3	2	11	5
Total	39	13	10	63	21	14	17	10
POOR								
Peasant (A)	18	1	1	28	7	6	--	--
Peasant (non-A)	23	1	1	55	18	15	14	11
Non-peasant	69	13	8	65	30	22	11	10
Total	110	15	10	148	55	43	25	21
TOTAL	185	37	29	250	96	72	47	35

Table 22

OCCUPATIONAL DISTRIBUTION OF PERMANENT MIGRANTS
BY ECONOMIC STRATA OF LINK HOUSEHOLD IN VILLAGE - 1970

Occupation → / Economic Strata ↓	Govt. employee	Non-agricultural workers		Trade	Professions		Total
		Clerical	Factory		Teacher	Others	
RICH							
Peasant (A)	4	--	3	--	--	--	7
Peasant (non-A)	--	--	--	--	--	--	--
Non-peasant	1	--	--	--	1	--	2
Total	5	--	3	--	1	--	9
MIDDLE							
Peasant (A)	4	--	--	--	--	--	4
Peasant (non-A)	2	--	1	--	--	1	4
Non-peasant	2	1	1	--	--	1	5
Total	8	1	2	--	--	2	13
POOR							
Peasant (A)	1	--	--	--	--	--	1
Peasant (non-A)	--	--	--	1	--	--	1
Non-peasant	4	--	2	1	--	6	13
Total	5	--	2	2	--	6	15
TOTAL	18	1	7	2	1	8	37

Table 23

OCCUPATIONAL DISTRIBUTION OF PERMANENT MIGRANTS
BY ECONOMIC STRATA OF LINK HOUSEHOLD IN VILLAGE - 1987

Occupation → / Economic Strata ↓	Govt employee	Cultivation	Agricultural labour	Non-agricultural workers		Trade		Professions and Services				Student	Total
				Clerical	Factory	Fruit seller	Other trade	Teacher	Band-player	Bus driver	Others		
RICH													
Peasant (A)	8	1	--	--	1	1	0	2	--	--	--	--	13
Peasant (non-A)	6	--	--	--	--	--	--	--	--	--	--	--	6
Non-peasant	--	--	--	--	--	--	--	1	--	--	--	--	1
Total	14	1	--	--	1	1	--	3	--	--	--	--	20
MIDDLE													
Peasant (A)	4	--	--	1	2	--	--	--	--	3	--	--	10
Peasant (non-A)	2	--	--	--	2	--	--	--	--	3	1	--	8
Non-peasant	--	--	--	2	--	--	1	--	--	--	--	--	3
Total	6	--	--	3	4	--	1	--	--	6	1	--	21
POOR													
Peasant (A)	1	--	--	1	3	--	--	--	--	1	1	--	7
Peasant (non-A)	3	--	1	--	2	4	1	--	--	--	6	1	18
Non-peasant	4	--	--	--	2	5	8	1	3	--	6	1	30
Total	8	--	1	1	7	9	9	1	3	1	13	2	55
TOTAL	28	1	1	4	12	10	10	4	3	7	14	4	96

Table 24

OCCUPATIONAL DISTRIBUTION OF SEASONAL MIGRANTS
BY ECONOMIC STRATA OF LINK HOUSEHOLD IN VILLAGE - 1987

Occupation → / Economic Strata ↓	Govt employee	Cultivation	Non-agricultural workers		Trade		Professions and Services			Student	Total
			Bhatta labour	Clerical	Fruit seller	Other trade	Muleteer	Band-player	Others		
RICH											
Peasant (A)	--	--	--	--	--	--	--	--	--	1	1
Peasant (non-A)	1	--	--	--	--	--	--	--	--	3	4
Non-peasant	--	--	--	--	--	--	--	--	--	--	--
Total	1	--	--	--	--	--	--	--	--	4	5
MIDDLE											
Peasant (A)	--	1	--	--	--	--	--	--	--	--	1
Peasant (non-A)	--	--	2	1	--	--	2	--	--	--	5
Non-peasant	--	--	10	--	--	--	--	--	1	--	11
Total	--	1	12	1	--	--	2	--	1	--	17
POOR											
Peasant (A)	--	--	--	--	--	--	--	--	--	--	--
Peasant (non-A)	1	--	6	--	2	--	2	--	3	--	14
Non-peasant	--	--	5	--	2	1	3	--	--	--	11
Total	1	--	11	--	4	1	5	--	3	--	25
TOTAL	2	1	23	1	4	1	7	--	4	4	47

Table 25

DISTRIBUTION OF MIGRANTS BY AVERAGE YEARS
OF EDUCATION AND ECONOMIC STRATA OF LINK HOUSEHOLD - 1970/1987

Economic Strata	1970			1987				
		Permanent Migrants			Permanent Migrants		Seasonal Migrants	
	No. of households in economic strata	No. of migrants	Average years of education	No. of households in economic strata	No. of migrants	Average years of education	No. of migrants	Average years of education
RICH								
Peasant (A)	33	7	9.9	20	13	12.2	1	10
Peasant (non-A)	0	--	--	16	6	9.33	4	11.5
Non-peasant	3	2	13	3	1	19	--	--
Total	**36**	**9**	**10.6**	**39**	**20**	**11.7**	**5**	**11.2**
MIDDLE								
Peasant (A)	30	4	8.25	28	10	10.4	1	0
Peasant (non-A)	4	4	8.0	20	8	10.3	5	2.6
Non-peasant	5	5	8.4	15	3	6	11	1.54
Total	**39**	**13**	**8.2**	**63**	**21**	**9.76**	**17**	**1.76**
POOR								
Peasant (A)	18	1	10	28	7	9.57	--	--
Peasant (non-A)	23	1	0	55	18	6.61	14	4.14
Non-peasant	69	13	4.3	65	30	6.43	11	3
Total	**110**	**15**	**4.4**	**148**	**55**	**6.89**	**25**	**3.64**
TOTAL	**185**	**37**	**6.6**	**250**	**96**	**8.52**	**47**	**3.76**

References

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