

Agrarian Change and Social Mobility in Tamil Nadu

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This is a study of social mobility over 25 years in six villages in the former Tiruchirapalli district in Tamil Nadu. The two most important external drivers are local industrialisation and social policy in a broad sense. It is shown that the overall effect seems to be a centripetal tendency in agrarian structure, with a movement towards a strengthened position for family farming and for the underdogs in the old agrarian society to leave agriculture altogether, seeking improved life chances in the non-agrarian economy, both inside the villages and in the wider economy.

This is a paper looking at social mobility during the period 1979 to 2004.¹ Social mobility is here defined as mobility of households between different positions in social structures. We will be looking more specifically at (i) mobility out of and into farming, (ii) mobility inside the farming sector, operationally defined as mobility between size-classes of operated area, finally, (iii) we will study the consequences in terms of changes in real household income.

We want to test some hypotheses about the driving forces of mobility and their consequences for people's life chances. We think of three major drivers of social mobility and the social transformation which they result in. The first one is local "industrialisation" and the "structural transformation of the rural economy", which is an indirect consequence of industrialisation and urbanisation.

Industrialisation has been running at an uneven but increasing pace during the 25-year period. Our field is both indirectly and directly affected since it lies close to the Karur-Tirupur textile industry belt (see Map 1, p 51), which is a major global centre of knitwear production. The textile dynamics obviously has many indirect effects on growth in urban and nearby rural areas and on the growth of other industries, like building and construction, as well as services. In our field area, it is mainly these indirect effects, which we loosely term the structural transformation of the rural economy, which contribute to social mobility inside rural society. However, we also have a few small textile industries in the area itself.

From the viewpoint of agriculture, urbanisation and industrialisation do not only result in people permanently migrating from villages. They also result in villages and rural economies getting transformed by (i) a growing non-agricultural sector in rural areas, (ii) seasonal migration, and (iii) by pluriactivity, i e, of rural people combining income earning activities within and outside the agriculture sector. Our material suggests that, at least in our study area, these trends are neither driven by agricultural distress nor do they increase poverty or leave poverty rates unaffected. As we will see, the indications are the reverse, i e, that the real income effects of the structural transformation of the rural economy in our study area are on the whole positive.

Thus people migrate, permanently and seasonally and they commute to towns. As a consequence, the agrarian sector decreases in relative terms, both in terms of labour absorption and as a source of income for local households.

There are also drivers of social mobility within the rural economy. As we will see, there appears to have been a respectable rate of growth of farm income over the period. Moreover, we

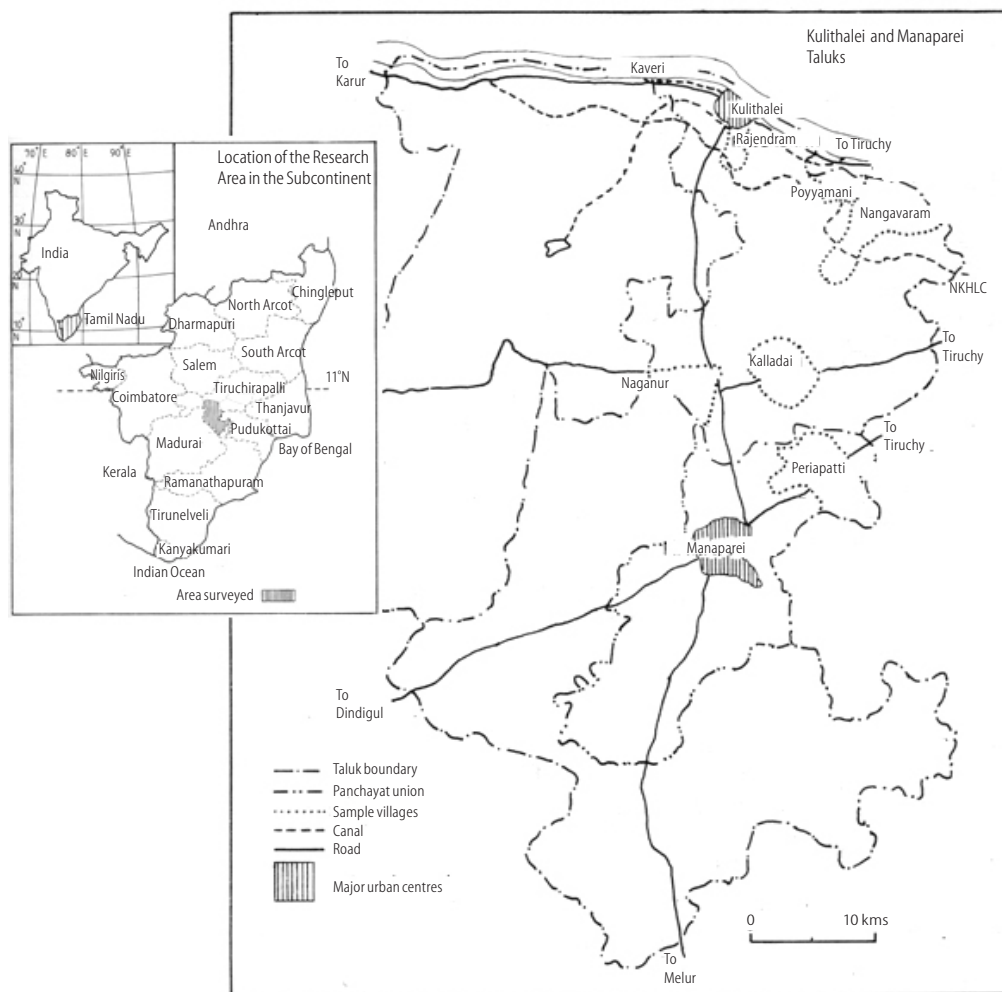
This research has received financial support from the Swedish Research Council, Sida's Research Council for Developing Countries and Swedish South Asian Studies Network (SASNET). The project is affiliated to Lund University, Sweden and the South Asian Consortium for Interdisciplinary Water Resources Studies (SaciWATERS), Hyderabad in India.

We want to thank our field staff for their invaluable work in the project: N Jayakumar, S Mariasusai, D Kathirvel, R Gopinath, P Sridhar, T Senthil Kumar, R Chelladurai and Arivukku Arasi.

We also want to thank the participants in a seminar in department of sociology, Lund University, in March 2007 and the working group on development sociology at the annual meeting of the Swedish Sociological Association in Lund in January 2007. Special thanks to Agnes Andersson, Björn Holmquist and Magnus Jirström.

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Map: Kulithalei and Manaparei Taluks, with Tamil Nadu and India (Insets)



will show that agricultural growth may have contributed about as much as local industrialisation to growth of real incomes and thus to poverty alleviation.

In the first leg of this study, we documented the effects of the green revolution (GR), which apparently continued to be dynamic in the 1980s [Athreya et al 1990]. Lipton and Longhurst (1989) argued that the GR had a considerable and beneficial impact on farmers. While this may be true for the early phase of the GR insofar as it led to higher productivity across farm size classes, and there may have also been some poverty reduction arising from increased employment², the data we present indicate that the GR has since then lost its poverty profile. More capital-intensive patterns of growth are now played out.

However, social mobility is not only driven by these economic forces, but also by political ones. There are important social policy interventions by the union and state governments, which influence people's life chances [see Lindberg, Vidyasagar et al 2008]. There is a broad repertoire of policies, many of which would not be classified as social policies in a conventional sense, but which do influence life chances. It is tempting to refer to the broad perspective introduced by Wood and Gough (2006) and Wood (2003).

Lacking the entitlements needed to escape poverty [Sen 1981], the poor are, according to Wood's analogy, driven to enter a "Faustian³ bargain" to get access to resources controlled by patrons, like local landlords, moneylenders, employers, etc. In the terms of the Faustian analogy the poor are driven to sell their souls to the patronising "devils" in exchange for which they get entitlement to food, work, credit, etc. In the bargain, they are driven to compromise on their political and social rights. The important function for social policy in this perspective is to supply the entitlements that poor people need in order to avoid the Faustian bargain.

Social policies in the above sense include a broad repertoire of interventions like the public distribution system

(PDS), the midday-meals schemes in schools where Tamil Nadu is a pioneer and the Integrated Child Development Scheme (ICDS). Although not originally conceived as a measure of poverty reduction, PDS has gained an increasing importance in supplying poor people with basic necessities. Although the functioning of the PDS and the ration shops, through which it is working, is widely divergent in the different states of India, it works comparatively well in Tamil Nadu. In our area, most households rely on the ration shops for their foodgrains. The effectiveness of the system is testified to by the answers to the survey question: "Does it happen that you have to forego a meal? If yes, when did it last happen?" Only one interviewee answered yes and in his case it last happened in the year 2000.

In addition to the PDS, there are a range of other interventions, like the expansion and improvement of the health system, of social services like water, education, the devolution of power to the panchayats, and a whole repertoire of policy interventions that have potentially significant effects on life chances.⁴ Their effects on mobility will be indirectly brought out below.⁵ Local industrialisation, structural transformation of the rural and agrarian economy and social policy interventions over the last three decades thus have resulted in improved levels of living in terms of food security, decreasing poverty, improved housing

standards, levels of education, etc. This again, as we will see, has been associated with a process where large landowners and the landless have to some extent exited agriculture, giving rise to a less skew distribution of operational holdings and of household incomes, within the agrarian economy.⁶

Yet another demonstrable consequence of these overall processes is a tendency for the status hierarchies in agrarian society to change. More specifically, we will document that, on the one hand, opening of opportunities in the off-farm sector and, on the other, policy interventions including affirmative action of various sorts have made it possible to an increasing extent for the old underdogs in agrarian society, i.e., the dalits or the ex-“untouchables”, to escape the indignity and degradation of village society. This is not to say that all of them have escaped the Faustian dilemma. For those who remain inside the village economy and with few opportunities outside of it, the old hierarchies tend to persist.

The emancipation of the Dalits has consequences for the old rulers. Deprived of a source of cheap labour, the old patrons often opt out of agriculture, especially in connection with a generational transfer, which parents can use to prepare for a non-farm career for their children. When the old “topdogs” tend to leave it creates new chances for the “middle dogs” to strengthen their position. Thus we will hypothesise a middling or centripetal tendency in the structure of operational holdings, reflecting a strengthening of the family farm sector.

We use Djurfeldt’s definition of notional family farmers as:

(1) The notional family farm is characterised by an overlapping between three functional units: (a) the unit of production (i.e., the farm), (b) the unit of consumption (i.e., the household) and (c) the unit of kinship (i.e., the family).

(2) For its reproduction, the notional family farm requires family labour, i.e., labour performed by members of the family/household, (and here we are not referring mainly to managerial work). This implies that, if the farm no longer requires family labour for its reproduction, it is no longer a notional family farm, although it may still be a farm family business [Djurfeldt 1996].

In our area, family farms used to be a small minority of all farms [Athreya, Djurfeldt et al 1990, *passim*]. According to our hypothesis, the growth of family farms occurs at the expense of holdings operated by means of tenants or agricultural labourers. Note that social policy contributes to this process by providing the entitlements that workers previously could only get from the landlords.

The strengthening of the family farm sector obviously also implies an increased share of family labour as compared to hired labour in cultivation. We start out descriptively, documenting the above tendencies with our survey data. This is done by means of cross-sectional data from the two panel waves, 1979 and 2004. Comparison of the cross-sections gives us the net result of structural changes and mobility between the two waves. Relying only on such data is hazardous, however, and cross-sectional data must be complemented with longitudinal ones to get a more complete picture and to try to extract the driving forces behind the tendencies observed. Therefore, by means of three regression analyses, we aim to try to substantiate the causal claims made above and spot any spurious correlations in the

cross-sectional data. This effort is summarised at the end of this paper.

For a full presentation, see the Annexe “Modelling Social Mobility in Rural Tamil Nadu” which is published on the following web site: <http://luur.lub.lu.se/luur?func=downloadFile&fileOld=1267070>.

The Area and the Fieldwork

Our data is drawn from a 25-year panel study of 213 agrarian households in six villages in Karur and Tiruchirapalli districts, representing a contiguous and relatively small area containing the variance between dry, rainfed tracts and the “wet”, irrigated areas which are so typical, not only of Tamil Nadu, but of much of south and central India.

In the wet canal-irrigated area, Brahmins used to own the lands farmed by Dalit tenants. Today most of the lands have been taken over by middle and Dalit castes. Caste discrimination has dwindled along with this development. The dry villages rely on tanks and wells for irrigation, but have a sizeable proportion of lands under rain-fed cultivation. In these villages members of the Sudra Varna castes of Udaiyar, Gounder and Muthuraja still own almost all land, which they farm with the help of Dalit servants. Here discrimination of Dalits is still practised in several ways. In 1979-80 we interviewed 367 agricultural households in these three wet and three dry villages, out of which 238 constituted the main sample. In 2005-06 we have again interviewed the same main sample households, except five which we could not trace. Thirty-one of these households had out-migrated and have been replaced by 31 in-migrants. Of these 233 households, 20 have left agriculture since 1979-80. The remaining 213 make up our sample of resident agricultural households in the study and is the main source of statistical analysis. This sample, we term as the agrarian population.⁷

Our observations of the changes and the character of these transformations build on several methods. The most important is a household socio-economic survey with the same questions asked in 1979-80 and in 2005-06. We judge the quality of our data to be high. This is due, first of all, to the work we put down in 1979-80 when we thoroughly cross-checked all information on important variables, like landownership, with registers, neighbours, etc. The enthusiastic response we received when returning in 2004 contributed to data quality.

Structural Transformation of the Agrarian and Rural Economy

On the basis of our survey data, we estimate the agrarian population and its growth over the 25-year period, from 1979-80 to 2005. Although the total population of the six villages has grown by about 24 per cent over the 25-year period, we estimate that the agrarian population has been more or less constant.⁸ The pattern is different in the two ecotypes, with a slight increase in agrarian population in the dry ecotype, especially in one of our villages. In the wet villages, the general pattern seems to be a slight decrease.

The above means that almost all growth in population has occurred outside the agrarian sector. The general conclusion is

that these village economies have gone through a considerable structural transformation in the last generation. In a foreseeable future, the agrarian population will be down to half the total population. The trend is compounded of course by migration, which seems to have increased during the last half of our period.

Emigration

Looking at the households that have left our villages since 1979-80, we spot no statistically significant differences in destinations or in reasons for migration, although there is a slight tendency for the labouring classes (agricultural labourers and poor peasants according to the 1979-80 classification) to migrate more in search of employment.

Table 1: Rates of Migration since 1979-80 by Class

Class position, 1979	Mean	Std Error	N
Labouring classes	0.173	0.037	110
Family farmers	0.047	0.025	88
Big farmers and landlords	0.000	0.000	7
Others and uncodable	0.233	0.082	27
Total	0.122	0.022	232

Per cent missing = .4.

Table 2: House Type by Survey Panel

House type	1979-80	2004
Katchai	60.3	28.6
Semi-pucca	20.1	19.8
Pucca	19.5	51.6
Total	100.0	100.0

No of cases in 1979-80: 367, missing: 0; in 2004: 213, missing: 0.

However, there are interesting differences between classes in rates of migration. In Table 1, we look at the proportion of the 1979 sample that has since emigrated from the villages.

There is a clear and statistically significant difference (at 1 per cent level) between the labouring classes, whose emigration rate is .17 per cent and the landed households (middle and rich peasants, etc), whose rate of emigration is below 5 per cent. However, our hypothesis of a higher rate of outmigration for the big farmers and landlords does not gain support from the above data.

This notwithstanding, we will continue to argue that the growing weight of the non-agrarian sector has differential consequences for the top, middle and the bottom of agrarian society. Although all are affected, the old underdogs, primarily the agricultural labourers, are more prone to seize new opportunities in the non-agrarian sector than the landed and middling households. Besides, they may also find survival as very small peasants, with substantial rent paid on leased-in land, difficult. This may be especially true since the late 1990s, with the sharp increase in input prices, decline in output prices and shortfall in institutional credit, but we do not have primary data on these aspects.

Similarly, the top strata tend to exit agriculture, in part due to the constraints on profitability and the scarcity and "high cost" of labour (high only in relation to an earlier situation where they could exploit labour at their will and not in terms of any notion of a decent wage) and the increasing difficulties of extracting rent. Perhaps equally or more important is the fact that they may simultaneously be attracted by growing opportunities in the non-agricultural sector. When the topdogs and underdogs exit agriculture, they leave space for the middling sectors, what we will term the family farmers, to strengthen their position.

Is the hypothesis about the exiting of the topdogs contradicted by the above data? Not necessarily, since exiting does not necessarily imply leaving the village. The topdogs may be exiting agriculture with at least some family members remaining in the village. We will return to this issue below.

Housing Standards

Table 2 gives as good a description of the general trend as any: While 25 years ago, about 60 per cent of the agrarian population in our villages lived in "katchai" houses, i.e., huts of mud with thatched roofs, less than 30 per cent do so today. The percentage living in solid "pucca" houses has almost tripled, from less than 20 per cent to above 50 per cent. With this improvement in housing standards goes increased ownership of consumer durables and furniture. Together with indicators available in official statistics, like improvements in child mortality and literacy, this goes to show an appreciable progress over the last generation. As we will see, this is the outcome of growth in the farm sector, and also importantly of the structural transformation of the economy.

Growing Role of the Non-Agricultural Sector

An increased allocation of family labour to non-agricultural activities does not necessarily and over a longer run result in an increasing share of income from such sources. The change in the share of income inter alia would depend on the pattern of investment. If much non-farm income had been invested in the farm sector, we would not necessarily expect an increased share for non-farm income. Parallel to our first wave, Harriss (1981) pointed to the important role of the family networks spanning the farm and non-farm sector, especially business investments. She argued that non-farm income typically would be reinvested in farming. Obviously, this would differ according to the vagaries

Table 3: Share of Income and Percentage Increase of Income from Non-Agricultural Sources by Survey Round and Class

Ecotype	Class 1979	Share of Household Labour			Share of Household Income			No of Cases	
		1979	2004	Change %	1979	2004	Change %	1979	2004
Wet	Labouring classes	0.112	0.177	59	0.176	0.246	40	39	40
	Family farmers	0.139	0.346	148	0.169	0.293	73	30	31
	Big farmers and landlords	0.077	0.411	431	0.090	0.237	162	7	7
	Other and uncodable	0.126	0.355	181	0.202	0.460	127	11	11
	Total	0.120	0.282	135	0.170	0.290	71	87	89
Dry	Labouring classes	0.236	0.416	76	0.349	0.486	39	43	42
	Family farmers	0.128	0.297	132	0.284	0.378	33	52	52
	Big farmers and landlords	-	-	-	-	-	-	-	-
	Others and uncodable	0.193	0.171	-11	0.107	0.184	72	6	7
	Total	0.177	0.338	91	0.303	0.408	35	101	101
Total	Labouring classes	0.163	0.272	66	0.239	0.342	43	82	82
	Family farmers	0.133	0.321	142	0.232	0.335	45	82	83
	Big farmers and landlords	0.077	0.411	431	0.090	0.237	162	7	7
	Others and uncodable	0.142	0.317	123	0.184	0.394	114	17	18
	Total	0.145	0.305	111	0.224	0.339	52	188	190

% missing 1979 = 22 and 10 respectively and for 2004 = 11% for both variables.

of the farm business climate and one could argue that the likelihood of such investments would be lower today than in the "golden days" of the GR.

We see from Table 3 that in total and on the average households have increased their allocation of household labourers to

non-farm activities by more than 100 per cent. The corresponding increase in the share of household income from non-farm sources is 52 per cent. One cannot draw the conclusion from this that non-farm activity yields less income than farm activity. Instead, one possible explanation for the lower growth in the share of income from non-farm sources than in the share of labourers in the same sector is the one already alluded to: Over the period parts of non-farm income has been invested on the farm and thus contributed to the increase in farm income. Most investment has gone in wells and irrigation equipment, evidenced for example by well density in the dry area having gone from one well in 10 acres of operated land to one well in two acres today, a fivefold increase.

Generational Transfer

Before proceeding any further, we have to devote a section to generational transfer. The most remarkable finding is that although customary law stipulates partible inheritance along the patriline,⁹ most of the first wave households have avoided dividing their holdings. Out of the 97 cases of partition that we have in the sample, 78 per cent were the only heirs. It would be possible to check against old data to find out how many of these were the only children of the family, but it is unlikely that more than a minority were. This implies that the parents had manoeuvred to put up their kids, especially their sons, in other occupations and to make only one son the heir of their landed property.

This deviation from customary law can be explained as an effect of transformation of the rural economy and local industrialisation, which make it feasible for parents to avoid dividing the ancestral property, because they can place the “superfluous” children in other occupations. It further implies that local agriculture to some extent avoids the trap, foreseen by many, of land-holdings getting increasingly diminutive and fragmented.

It is also worth noting that a sizeable minority let landed property pass along the matriline. However, out of the 97 cases we have data on the gender of heirs only for 37. Assuming that the remaining 60 inherited patrilineally, in 8 per cent (weighted estimate) of the cases both sons and daughters inherited land. In 2 per cent of cases, land was inherited by daughters. Matrilineal inheritance has for long been a practice in cases where there are no sons to take over, so this practice might not after all be as important as the presumably spreading practice of non-partible inheritance of land.

Entry Into and Exit from Farming

One would expect the structural transformation of the rural economy to imply that people leave the land, which they do, but not universally and with the same tempo. Moreover,

there is a stream in the other direction, i e, into farming, as Table 4 shows.

Data for 1979 in the table are representative for the agrarian population in that year. But it includes not only that cohort, but also representatives of the partitioned households. The table does not include representatives of the small group of households that were non-agrarian in 1979 and who have entered agriculture since then. Likewise, it does not include a small group of immigrated households that are part of the 2004 agrarian population. Of the 2004 non-agrarian population, only those who are descendants of 1979 households are included.

Data for 2004, then, are not completely representative of the 2004 agrarian population, but for large parts of it. Thus we take the marginal distributions in the table as representative or nearly representative of the agrarian population in both rounds.

Here is another effect of the structural transformation of the rural economy: While 67 per cent of the households having undergone a generational transfer are cultivators, 82 per cent of their parents were so 25 years ago. Thus, there is a net exit from farming which can be due, either to proletarianisation of farmers or, which would largely be another term for the same process, an exit from an unrewarding existence as a farmer to a more promising future in the non-farm sector, most probably occurring in connection with a generational transfer.

The predominantly downward mobility (i e, out of farming) is reflected in the two mobility matrices of Table 4, reflecting net rather than gross mobility. Looking first at partitioned households, we see that in total 6 per cent of the heirs have been upwardly mobile from non-cultivator to cultivator status, while 21 per cent have been downwardly mobile and lost or got rid of their cultivated holdings somewhere during the period.

Exiting from cultivation is somewhat more pronounced in the unpartitioned category. While 30 per cent of these households did not farm in 1979, today 50 per cent do not. Downward mobility is slightly higher among the unpartitioned households, 24 per cent compared to 21 among the partitioned ones (statistically significant at 5 per cent level). Generational transfer seems to cause some downward mobility, but presumably less than would have been the case if all holdings had been partitioned as per traditional law.

Proletarianisation

Two of the most common hypotheses about agricultural development is that it leads to proletarianisation of small farmers and to polarisation. They represent two different processes of change that may be related but not necessarily so.¹⁰

These hypotheses belong to the standard narrative, but they are not often put to rigorous test. When they have been tested, they often failed to get empirical support [see e g Djurfeldt and Waldenström 1999; Edmundson 1994; Fuwa 1999; Hayami 1997; Schendel 1981; Srinivas Dasari 2004].

When in the first panel wave, we looked at retrospective data and tested the hypotheses mentioned, we found that over a generation, landlessness was likely to have slightly decreased because many agricultural labourers during their life time succeeded in getting access to land. A generation ago, then, there was still a net

Table 4: Cultivator Status by Survey Wave by Partition Status, (Total %)

Household Partitioned since 1979	Cultivated Land in 1979	Cultivated Land in 2004		
		No	Yes	Total
No	No	25.9	4.5	30.4
	Yes	24.1	45.5	69.6
	Total	50.0	50.0	100.0
Yes	No	12.8	5.5	18.3
	Yes	20.6	61.1	81.7
	Total	33.4	66.6	100.0

Total no of cases = 233, % missing = 0. Differences are significant at .1% level.

entry into agriculture – a trend which seems to have reversed since then. Similarly, when comparing the 1979 distribution of land with land inherited we found a slight centripetal tendency, i.e., a tendency to less inequality in the distribution of land [Athreya, Djurfeldt et al 1990, chapter 5].

Sitting now with data from two panel waves, we have a chance again to test the proletarianisation and polarisation theses. However, and as would be clear by now, we add a new dimension to the analysis by also considering the structural transformation of the rural economy, a dimension abstracted from in the work cited. Let us look first at the proportion of landless households in the agrarian population.¹¹

In the wet area, the proportion of landless labourers seems largely stable, while in the dry area it has gone down. Landlessness was very high in the wet area even in 1979, so one would not expect dramatic increases thereafter. This may also have to do with labour out-migration and to fewer numbers of children per pair of parents than in the previous generation. This looks more like a stable situation in the wet area, although as we have seen, the agricultural labourers there are less specialised in agriculture today. This again has to do with expansion in the non-agricultural opportunities and increased mechanisation, especially of ploughing, threshing and to a less extent, in irrigation, all of which means a contracting demand for labour.

In the dry area, on the other hand, the landless labour population seems to have substantially gone down. One may have expected some degree of proletarianisation, but there can also be counteracting tendencies, with more land coming under the plough and increased intensity and profitability. Also, it has been cheaper for the landless to acquire dry land, when more of it has been left fallow. The same driving forces as in the wet area have

Table 5: Landless Labourers in Agrarian Population, by Ecotype and Panel Wave
(in %)

Ecotype	1979-80	2004
Wet	30	31
Dry	16	9

No of cases in 1979-80: 240, % missing = 0; no of cases 2005 = 213, % missing = 0.

Table 6: Working Days Per Year for Agricultural Labourers by Gender, Ecotype and Panel Wave

Ecotype	Gender	1979		2004	
		Mean	Std Error	Mean	Std Error
Wet	Male	165	9.11	153	8.23
	Female	171	7.69	134	6.09
Dry	Male	69	8.98	91	9.34
	Female	129	7.90	113	6.91
Total	Male	136	7.41	133	6.72
	Female	157	5.72	125	4.76

No of cases 1979-80: 106 men, missing = 0%, 145 women, missing: 1.4%; no of cases 2004: 87 men, missing = 0%, 135 women, missing = 0%.

and the non-farm sector, the former usually tends to be the loser, in the sense that the scarcity of labour increases, which again causes an upward pressure on wages. A frequent counter-strategy by farmers in that situation is to mechanise.¹² Accordingly, a

great deal of mechanisation has occurred, in ploughing, irrigation and threshing, although not yet in harvesting.¹³ At the same time, the agricultural wage labour force has gone down (in the dry area) or become more pluriactive (in the wet one). This brings down the time labourers devote to agricultural labour. These processes have had the following effect on employment (see Table 6).

We see that mean days of employment has declined slightly for men in the wet area (although, as standard errors indicate, the decline is not statistically significant), while for women there has been more substantial reduction, from 171 to 134 days, or about 22 per cent, which is statistically significant even when you correct for the design effect. The latter reduction is probably because of the mechanisation of threshing of grains.

In the dry area on the other hand, the decline of the total labour force has brought about an increase in employment for men, from 69 to 91 days (just about significant at 5 per cent level), while employment for women in the dry areas has gone down slightly, again probably a consequence of mechanisation.

Inequality

Scholarly opinion appears to agree that increasing inequality is not a necessary consequence of economic growth, unlike what Kuznets once generalised for the earlier phases of development [Kuznets 1971]. Case studies of different countries show radically different correlations between economic growth and inequality

Table 7: Gini Indices for Distribution of Operated Area,¹⁸ Income and Farm Income by Ecotype and Panel Wave

Distribution/Ecotype	1979			2004		
	Wet	Dry	n	Wet	Dry	n
Operated area	0.84	0.83	169	0.41	0.44	159
Income (current year)	0.82	0.83	227	0.41	0.34	124
Income (normal year)	–	–	–	0.42	0.33	124
Farm income (current year)	0.83	0.83	231	0.79	0.71	210

No of missing cases first wave: 0, 8, 33%; second round: 0, 16 and 1%.

[Frazer 2006]. In the Indian debate, most scholars seem to lean towards the interpretation that inequality has increased with the economic growth in the 1990s [Asian Development Bank (ADB) 2007, p 59]. However, this goes for the economy as a whole. When it comes to the agrarian sector, the number of studies is less, except for the early period of the GR, when many authors concluded that it increased inequality.¹⁴

Our data summarised in Table 7, provide a comparison at two different points in time, the first (1979-80) at the end of the first decade of GR, and the second 25 years after the first (2004-05). They suggest a reduction of inequality in the distribution of operated area among land-operating households and reduction of inequality in the distribution of household income for all agrarian households.¹⁵

The picture for farm income is somewhat ambiguous as can be seen from Table 7.¹⁶ A comparison of current year data for 1979-80 and 2004-05 suggests little reduction in farm income inequality. But if one takes a “normal” year estimate for 2004-05, and compare it with actuals in 1979-80 there appears to be a significant reduction in the inequality of farm income as well. However, there is an element of arbitrariness in doing this, and it is best to

see this as an unresolved issue.¹⁷ In any event, the fact that inequality is higher for farm income than for income in general would support the hypothesis that non-farm income dampens economic inequality in our villages.

The observed decrease in inequality is in part a consequence of the greater rate of exit from agriculture especially of poor peasants and agricultural labourers than of the other classes. Thus the measured inequality levels within the agrarian population come down automatically.

The Strengthened Position of Family Farming

Increased scarcity of agricultural labour and upward pressure on wages implies a profit squeeze for farmers relying on hired labour (on the assumption that productivity increases and product prices do not counter this tendency adequately) like big farmers in both the ecotypes were doing to such an overwhelming extent a

Table 8: Total Labour Input Per Acre and Proportion of Labour Input by Type, Crop and Survey Round

Ecotype	Crop	Total Labour Days		Family Labour Days		Proportion	
		1979	2004	1979	2004	1979	2004
Wet	Paddy HYV	65.5	69.1	18.3	27.1	0.28	0.39
Dry	Paddy HYV	108.9	105.9	36.2	45.3	0.33	0.43
	Groundnut	34.9	72.6	9.8	23.3	0.28	0.32
	Millet Irr	35.7	46.9	15.3	26.7	0.43	0.57
	Millet Unlrr	51.7	30.0	22.3	14.3	0.43	0.48

Total number of cases 121 for 2004, and 237 for 1979.

Table 9: Mean Household Income by Source, by Ecotype and Panel Wave¹⁹

Ecotype	Income source	1979			2004			Increase over N-Period %
		Mean	Stand Error	n	Mean	Stand Error		
Wet	Agri labour income	9,130	174	86	9,935	842	79	9
	Farm income	20,891	1,044	69	27,675	1,394	43	32
	Total income	26,776	657	121	45,404	805	100	70
Dry	Agri labour income	5,235	95	63	6,985	614	80	33
	Farm income	7,118	408	62	14,597	456	59	105
	Total income	16,135	381	117	47,834	736	111	196
Total	Agri labour income	7,833	128	149	8,819	528	159	13
	Farm income	14,741	708	131	20,991	707	102	42
	Total income	22,967	443	238	46,378	566	211	102

No of cases first wave: 169, 227, 231, missing 0, 8, 33%; second wave: 159, 122, 211, missing 0, 17 and 1%.

generation ago. It should also be noted that the returns to education, earnings in salaried non-agricultural employment and rising business opportunities for the landed gentry are additional reasons for such exit as may have occurred. Besides, a negative turn in terms of trade between agriculture and non-agriculture is possibly as important as the assertion of independence by agricultural wage labour (rather than any rapid rise in wages per se).

The same processes create an incentive for family farmers to rely more on their own labour. These are basic reasons why family farmers according to our hypothesis take over land from big farmers and buy up land sold by smallholders exiting agriculture. It is plausible to hypothesise that such a process is going on in our area, propelled by local industrialisation and the structural transformation of the rural economy and that it strengthens the position of family farming, much in line with what has happened in a number of other countries [Djurfeldt 1981; Fuwa 1999; Hayami and Kikuchi 2000].

We have already seen a centripetal tendency in the distribution of operated area, which supports the above interpretation. We get further support for this thesis when looking at labour use in cropping (see Table 8).

The pattern is very clear for the biggest crop, i e, paddy, where the share of family labour has gone up, both in the wet and dry area. In the dry ecotype moreover, the same pattern is shown by all major crops. Unfortunately we have too few cases of the other two major crops in the wet area, i e, banana and sugar cane, to be able to make this comparison. These are labour intensive crops, with labour input in marked peaks, which make them difficult for family farmers to handle by means of only family labour. Moreover, both banana and cane are often grown by big farmers. Thus we would not expect more than a marginally increasing importance of family labour for these crops.

Growth in Agriculture

As would be expected, total income has risen much more than either agricultural labour income or farm income – obviously a reflection of the structural transformation of the economy. Moreover, as one would also expect on the background of the above, incomes have increased more rapidly in the dry area than in the wet one.

Agricultural labour incomes (per household) have been fairly stagnant, especially in the wet area. This would support the contention that the strategies, on the one hand, of family farmers to increase their input of own labour and, on the other hand, for landlords and bigger farmers, to do away with dependence on hired labour by means of mechanisation, have been rather successful in containing wage demands from labourers. However, the stagnation in agricultural wage income in the wet area is compensated for by rising non-agricultural earnings, so that total income for agricultural labour households would have gone up.

In the dry area, from a much lower base, agricultural labour incomes have risen more quickly than in the wet one, though they still remain below the latter. As we have seen, the number of working days for male labourers has also gone up, at the same time the number of labourers has gone down. A deeper impact of structural transformation in the dry area has contributed to this, but social policy interventions to emancipate unfree labourers may also have had a hand in the outcome.

Farm income,²⁰ finally, has gone up less than total income. The overall increase of 42 per cent in fact implies a modest growth rate of less than 1.5 per cent year over the period. The dry area performed better and its growth rate would have been almost 3 per cent per year. The distributional impact of this growth depends on the distribution of incomes. As we have seen, inequality among land-operating households seems to have gone down. If so, and given that growth has occurred, this would be reflected in reduced incidence of poverty.²¹

Summarising Our Regression Analyses

The notion of mobility presupposes, not only longitudinal data and a time-line at the end of and during which, the unit studied (the farm or farm labour household in our case) moves upwards and downwards in some well-defined sense. The whole

problematique has been related to ideological discourses on the development of society. At one end of the spectrum we have the proponents of polarisation theories, some of them claiming a Marxist lineage, although some of the Marxist classics were more circumspect in this regard [Djurfeldt 1981].²² At the other end, we find theories predicting a centripetal movement in the class structure. Both these approaches have fundamental implications for the reproduction of the social order and both, we contend, are mistaken in positing universal trends or tendencies. Outcomes are conditioned by contextual factors of an economic, political and perhaps even ideological nature. Thus there are good reasons to try to understand not only mobility trends but the various drivers of mobility, a task we now attempt.

Another presumption of mobility studies is a social space within which the study unit moves. How is this space to be defined? Classically, mobility studies have defined the social space primarily in terms of class, with widely varying notions of class, including for example educational classes. In methodological terms classes are always discrete and usually hierarchically ordered, which is why statistically we end up with ordinal scales and cross-tabular data.

Such a discrete and ordinal conception of social space yields mobility matrices, with two ordinal-scale or binary axes, the x-axis denoting original class and the y-axis denoting current class. A multivariate extension of the classical approach can be a linear regression, a loglinear or logistic model where the logarithm of the odds of moving from one “class” to another is regressed on a number of independent variables.

In an accompanying annexure we have carried out regression analyses based on our panel data. These exercises are briefly summarised here.

Mobility between and Within Generations

Studies of mobility usually focus on mobility between generations. Although we have two panel waves with 25 years between them, less than half of our households have gone through a generational transfer during the interval. Thus we have 105 households, which remain unpartitioned, in 11 cases under a new head.

On the other hand, we have 97 households, which are descendants to households interviewed in 1979-80. For descendant households, then, we study inter-generational mobility, for example the difference in landownership between the descendant and the ancestor. For “old” households we study intra-generational mobility. Differences between the two sub-samples can be statistically controlled for in the regression by using a dummy variable for partitioned/unpartitioned status.

Model 1: Entry Into and Exit from Farming

First we have looked at mobility between being a cultivator and not being one. In other words this deals with exit from and entry into farming. In Table 4 above we found a net mobility out of agriculture which was higher for partitioned household than for non-partitioned ones. This relation disappears when we control for other factors.

Ecotype comes out as a highly significant factor, with a much higher probability for household to be a cultivator in the dry area – a non-surprising finding given the lower rate of landlessness there.

The change in share of non-farm income between 1979 and 2004 is our attempt to capture the influence of pluriactivity. Our findings support the hypothesis that pluriactive households are more likely to move out of cultivation, unlike a generation ago when, we believe, non-agrarian incomes were more likely to be re-invested in agriculture [cf the discussion of the growing importance of the non-farm sector in Djurfeldt, Athreya et al 2008]. [Besley and Burgess 2000].

In order to test the hypothesis that the underdogs and the topdogs are more likely to move out of farming than others, we again have to look at probabilities conditioned by class. It is found that the class factor is statistically significant. However, the hypothesis about topdogs and underdogs tending to leave is not supported by these data.

Model 2: Mobility across Operational Holdings

The second of the three models built deals with mobility in operated area. We start with the following size mobility matrix, or more precisely, two matrices, one for each ecotype:

The population we are dealing with here consists of agrarian households in 1979, including landless labourers and the descendants of these household who still remain in the villages and in the agricultural sector. Emigrants are thus not represented and neither are immigrants. Since landless labourers are included in the 0-1 category, the totals give a misleading impression of a general downward movement [cf the Gini indices reported in Djurfeldt, Athreya et al 2008].

As can be seen we have divided operated area into ecotype-specific size classes. As usual with these matrices, along the diagonal of the table we find the stable households, totally 54 per cent in the wet area and 43 per cent in the dry villages. Thus, mobility seems to be higher in the dry area. The upwardly mobile cases are located above the diagonal, comprising 8.5 per cent in the wet area and 20.9 per cent in the dry one – indicating a more than double rate of upward mobility in the dry ecotype, compared to the wet one. Rates of downward mobility differ little between the ecotypes. Thus the lower stability in the dry villages is compensated for by a higher upward mobility, with comparatively more households having increased their holdings over the last 25 years. This may reflect investments in irrigation, and mobility here can go hand in hand with some exit from agriculture as well as consolidation of holdings of those who remain in it.

We can now pose the question of what factors influence the relative risk of being downwardly or upwardly mobile. The result of our regression is the following:

Looking at the consequences of household partition, we see no significant difference between partitioned and unpartitioned households, in either equation. In this case too we see that differences between the two categories of households is lower than expected, which probably largely depends on what we saw above,

viz, that many holdings pass undivided from one generation to the next one.

There are no statistically significant differences between the ecotypes in the relative risk for downward mobility. In the equation for upward mobility, however, ecotype does come out as significant at the 5 per cent level. This corroborates the bivariate result already reported.

As can be seen from the table, the comparison with the reference category gives a ranking of the three classes in terms of the relative risk for downward mobility, with the lowest risk for big farmers and landlords, an intermediate position for family farmers and the highest relative risk for agricultural labourers and poor peasants. In the upward equation only agricultural labourers and poor peasants face a relative risk of upward mobility lower than that for the reference category.

The results show that all classes have lower relative risks of downwardly mobility than the reference category (other and uncodable). However, only the difference between agricultural labourers and poor peasants, on the one hand, and big farmers and landlords is statistically significant. The difference between the latter two classes and the family farmers is not statistically

Table 10: Size-Mobility Matrices for Operated Area by Ecotype, Total (in %)

Ecotype	Size-class 2004	Size-class 2004				Total
		0-1	1-2	2-4	4+	
Wet	Size-class 1979	0-1	38.6	2.8	1.4	42.9
		1-2	11.8	9.0	2.5	24.2
		2-4	12.8	1.5	4.9	20.1
		4+	7.8	1.7	1.7	12.8
	Total	71.1	15.1	10.6	3.3	100.0
Dry	Size-class 2004	0-2	23.2	8.0	2.4	33.6
		2-4	15.4	5.8	6.7	29.8
		4-8	8.9	5.1	13.1	29.1
		8+	1.9	2.3	2.4	7.5
	Total	49.5	21.2	24.6	4.7	100.0

No of cases = 200, missing 2%.

significant. Taken together our regression equations imply that agricultural and poor peasants faced the lowest relative chances of upward mobility and the highest relative risks of losing position during the period 1979 to 2004. The higher classes faced lower relative risks. We spot no differences between family farmers and others in this regard. This makes intuitive sense in that households with better asset positions, other thing being equal, tend to fare better over time. Policy intended to help the poorer asset categories can be consistent with strengthening of the higher asset categories.

Do these results not contradict our hypothesis about the topdogs leaving? Partly yes: This model deals with the mobility chances of those remaining in agriculture, while Model 1 deals with entry into and exit from the sector. Both models fail to support the topdog-underdog hypothesis. For households remaining in the sector, the dice is weighted against the underdogs, while the topdogs have fared better. The evidence is inconclusive for the family farmers.

We glimpse a similar pattern for caste, where upper castes are the reference category, but here there is no statistical significance, except for scheduled castes and their chances of upward mobility, which are lower than for other castes. Thus, discrimination against the ex-untouchables remain in force inside the agrarian sector.

The hypothesis that family type is related to relative risks of mobility gains support from our data. Joint families run a significantly lower relative risk of having been downwardly mobile! How are we to interpret this finding? Joint families obviously have more plentiful labour resources than others and we would argue that this is the decisive factor. A larger pool of labour and non-labour resources permits diversification and hence lowering of risk. Also important, however, is demography in the sense of ratio of dependents to earners.

The above is in line with our general hypotheses that local industrialisation implies increased competition for labour between agriculture and industry. Similarly, the whole range of social policy interventions decreases the risk for poor people to land in client relations with the local rich. The fact that permanent farm servants (pannaiyal in Tamil) have gone down drastically in numbers is a clear testimony to this development. Managing a farm business is much facilitated by access to enough family labour and gives a competitive edge to joint families.

A lower risk of downward mobility of joint families could have been an indicator of "family farmerisation".²³ However, the fact that we have been unable to show that family farmers suffer less risks of downward or upward mobility than others implies otherwise: All classes may enjoy the economic advantages of a joint family. More specifically we cannot show any difference between family farmers and big farmers and landlords in this regard.²⁴ Moreover and as already pointed out, big farmers and landlords may also have been "family farmerised" since 1979.

To conclude, this model qualifies somewhat the hypotheses we are driving in this paper. The first model confirms the effect of the structural transformation of the economy but gives no conclusive support to the topdog-underdog hypothesis. Model 2 on the other hand shows that for those remaining inside the sector, mobility chances are still in favour of the big farmers and against the agricultural labourers, poor peasants and the scheduled castes. Only by leaving the sector, can the latter escape from the discrimination against them. We have not been able to demonstrate that the advantages enjoyed by family farmers have implied greater chances of upward mobility.

Model 3: Drivers of Poverty Alleviation

As we saw above, average real incomes for agrarian households in 2004 have improved a great deal compared to 1979 and more so for farmers than for agricultural labour households. At the same time, inequality seems to have gone down. By implication, the incidence of poverty should also have gone down. What are the drivers of this development?

In line with our hypotheses, we are interested in separating the effects of (i) local industrialisation and the structural transformation of the rural economy, (ii) agricultural growth and (iii) social policy. We would like to see if some of the effects of targeted schemes, like pensions for widows and agricultural labourers can be traced in the autoregressive model presented below. However, insofar as social policies take the form of general rather than targeted interventions we cannot trace their effects by means of our material.

To understand these processes, we have built an autoregressive multiple regression model for total income in 2004. As in the other models, we do not get statistical significance for household partition, which supports the conclusion already reached, viz, that generational transfers are handled so that they do not on the whole increase poverty risks for the descendants.

As we have seen above, there seems to have been a more or less steady growth in agriculture over the 25-year period, at the same time as the inequality of the distribution of farm incomes seems lower today than it was 25 years ago. Our data also indicate that agricultural investment and growth have been significant for poverty reduction. To this interpretation could be added the fact that high-yielding varieties of paddy are now universal and benefiting smallholders as well as others, in line with Lipton's and Longhurst's findings (2005; 1989). Our results indicate that the GR has lost its poverty profile and that more capital-intensive growth patterns are now prevailing, especially driven by investments in irrigation. Obviously they have contributed much to growth in real incomes.

Looking now at the effects of the transformation of the economy, we think that the analyses also give additional, although not very strong support to our hypothesis that the real income effects of the structural transformation of the rural economy are positive in this region, rather than negative as expected from the widespread theories of pauperisation and distress migration.

Another interesting finding is that scheduled caste is not statistically significant in relation to income variations. A possible interpretation of a non-significant regression coefficient may be that, thanks to social policy interventions, being a Dalit is no longer as big a handicap in economic terms. It means that the main drivers of poverty-alleviation to a large extent are "caste-blind". In the new non-agrarian economy, caste discrimination is much less than in the old agrarian society.²⁵ Similarly, social policy interventions targeted towards the poor would, if these results have a more general bearing, neither discriminate against nor be affirmative towards the scheduled castes.²⁶

However, here the correlation is at least on the border of being significant, which would indicate that caste discrimination is not entirely absent, resulting in marginally lower gains from the structural transformation of the rural economy for the Dalit households remaining in the agrarian population and the village.

The latter interpretation gets corroborated when looking at the professional agricultural labourers, i.e., labourers with no or almost no income earned outside the farm sector. Such labourers are mainly found in the dry villages and they are very often scheduled caste. They have suffered significantly decreased incomes in real terms since 1979. An implication is of course that social policy interventions still have failed to improve life chances for all underdogs, even if they have meant a lot to many.

Ecotype is non-significant, meaning that when other factors are statistically controlled for, the remaining difference between ecotypes are likely to be caused by random factors.

Surprisingly we get no results for education. We have tried both female and male education and get significant results for neither of them. One would expect literacy to be a driver for improved life chances but our results surprisingly do not support that hypothesis. It can possibly be because those who have profited from their education have left the village and thus exited the sample.

A final variable to discuss is the importance of the family. We get high statistical significance for family size, mirroring earlier results about the importance of joint families. All our results, then, point to the importance of command over labour resources for mobility chances. Furthermore we look at incomplete nuclear families, which often point to women-headed households, often elderly widows and occasional widowers and non-married men and women. Again there are social policy interventions targeted to the first-mentioned sub-categories, but the policy impact is at best patchy, as is indicated by the negative, although non-significant regression coefficient associated with this variable.

Conclusions

The above analysis seems to lay a quite stable foundation for our theses about the patterns of development and their causes in our sample area. From a situation 25 years ago when rates of population growth were considerably higher and when the agrarian population was still growing, Tamil Nadu has seen the beginning of a demographic transition and industrial and urban growth enough, not only to dampen but more or less halt the growth of the agrarian population. One consequence of this is the change in patterns of inheritance, where parents avoid dividing their farms, preferring instead to launch "surplus" sons in non-farm careers. This in turn implies that the fragmentation of holdings, about which many researchers expressed apprehension a generation ago, has more or less stopped.

Rates of out-migration have also increased, mainly involving the landless and the smallest landowners. They are not only pulled by prospects of a better life in town, but also pushed out from an agrarian economy where, since a significant proportion of them are dalits, they were denied a decent living and human dignity. Our parallel hypothesis about the topdogs leaving the agrarian economy together with their old underdogs does not gain solid statistical support. This may

however be due to a scant statistical basis: The implied groups are small and not adequately represented in a simple random sample.

Those who do not migrate tend instead to go pluriactive. Increased allocation of household labour to non-farm activities is part of the structural transformation of the economy, and a consequence is that non-farm sources of income have grown considerably in importance.

For those who had foreseen increasing inequality within the farm sector as a result of these processes, our data would not provide support. Our findings point quite unequivocally towards a decreasing inequality both in operated area and in income among the agrarian population.

Real incomes in the farm sector also show a clear upward trend, more so for farmers than for agricultural labourers and, interestingly, more so in the dry area than in the wet one. This again implies that rates of poverty defined in terms of income have gone down though it is difficult to say by exactly how much. The least favoured group in this respect is the agricultural labourers – yet another background to their higher rates of out-migration and increasing levels of pluriactivity. It should be added that there are data problems in finding the right deflator over a long period which has seen considerable change in the basket of available goods and services and in access to ‘free goods’ of various kinds as well as a more or less complete transition to money wages and to almost everything being a priced good. The sharp rise in health and education costs as well as transport and other energy-related

costs of living are very inadequately reflected in official price indices.

A careful reading of the evidence that we have collected indicates that the incidence of poverty in our area is less in 2004-05 than it was in 1979-80. Driving forces for this seem to be agricultural growth and local industrialisation and the parallel structural transformation of the rural economy, plausibly driven by it. It is important to emphasise that social policy interventions by the state have played an important role in improving the life chances of all, including the poor, even if we have seen that targeted social policy interventions are far from reaching all their intended beneficiaries²⁷

Finally, we have not gained much support for what we think is a major long-term consequence of these processes, viz. the strengthened position of family farming.

To what extent are these processes occurring more generally? It should be stressed that our sample area is a small one, with a not too peripheral position close to an industrial hub. It has a favourable irrigation regime and a cropping pattern that entails much lower price volatility than elsewhere. It is moreover located in one of the more dynamic and well-administrated states in India. This of course limits the possibility of generalisation.

However, we can turn the limits of generalisation into a more positive note: It is not unlikely that where similar conditions prevail, similar processes would also come into play.

NOTES

- 1 We use these years as short-hand for 1979-80 and 2004-05 respectively.
 - 2 It is true that the profitability of cultivation of wheat and rice in the wake of the new agricultural strategy of the mid-late 1960s also led to eviction of tenants as landowners resumed personal cultivation but it would still appear to be the case that the green revolution had, at least initially, a positive impact on poverty reduction.
 - 3 "Faustian" with an obvious reference to Goethe's Faust, who sold his soul to the devil in return for worldly success [Goethe 1999].
 - 4 See Lindberg, Vidyasagar et al 2008.
 - 5 For a more detailed discussion of these interventions, see Lindberg, Vidyasagar et al 2008.
 - 6 We do not suggest at all that inequalities in the rural economy or the economy as a whole have declined. Macroeconomic analyses of the economy [See, for instance, C P Chandrasekhar and Jayati Ghosh 2004] suggest that, at least since the onset of neoliberal economic reforms since 1991, inequalities in the economy as a whole may have increased. It must also be added that we have only a comparison of two points in time, and cannot therefore say anything about the trends in the 1990s and after as compared to the trends in the 1980s. But it is widely accepted that the agrarian economy fared much better in the 1980s and up to the mid-1990s than it did thereafter. See, for instance, the *Mid Term Appraisal of the Tenth Plan* [Gol 2005].
 - 7 Because of the increase of industrial and tertiary sector jobs in and around the villages, there is now a sizeable non-agrarian population, which is outside our sample frame.
 - 8 Adding margins of error to the above estimates, the conclusion would be more precisely either a small contraction or a slight growth.
 - 9 Formal law since 1989 stipulates equal inheritance without discrimination by gender.
 - 10 You may have the emergence of a class of wage labourers, which is proletarianisation, but if a substantial segment of them are drawn from farm households which continue to farm, and thus derive incomes from both farming and wage labour, inequality between large and small landholders need not increase. This is especially true where the large farmers are not necessarily modern capitalist farmers. As our study of 1979-80 showed, size may be a very poor measure of scale in agriculture.
 - 11 The agrarian population is defined as having some relation to agriculture, either as labourers, cultivators or as owners of agricultural land. Landlessness is defined in terms of operated area, not owned land.
 - 12 It can be added that farmers mechanise also in order to increase productivity. Ploughing is a good example of an operation which both decreases dependence on hired labour and increases productivity – the latter because ploughing can be made quicker and the growth period thus shortened, which usually has a positive effect on yields. Moreover, it allows earlier planting of the second crop, again positive effects on yields.
 - 13 The role of the state in extending credit and subsidies for mechanisation has possibly played a role in this process.
 - 14 Many of these studies were methodologically weak and they have been subjected to scathing criticism by Freebairn (1995).
 - 15 Note, however, that this outcome is not inconsistent with the hypothesis of an agrarian crisis brought about by neoliberal policies since the second half of the 1990s. It is widely accepted that, at the all-India level, the 1980s saw a remarkable growth of agriculture, and this continued to some extent up to the mid-1990s. On the other hand, the period between 1999 and 2007 has seen virtual stagnation in area, output and yield of foodgrains, and a negative growth rate of output in the case of non-foodgrain crops.
- 16 National Sample Survey (NSS) data suggest increased inequality or little change in Gini coefficients at the macro level for land ownership/operation among all rural households, including the landless ones (See Athreya 2003 and references cited therein). Since our data refer to the land-operating households, not to all rural households, there is not necessarily a contradiction between the two findings.
 - 17 We do not have data on ownership distribution of land or of productive assets taken as a whole. This needs to be kept in mind when discussing inequality and changes thereof.
 - 18 The Gini coefficient for distribution of area operated refers only to households operating some land and excludes non-land operating households.
 - 19 Real income in 2004 prices inflated for 1979 by a factor of 5.38 estimated from the annual report on Consumer Price Index Numbers for Agricultural and Rural Labourers (2004). Note that these numbers are generally considered to underestimate the actual inflation, and do not take into account changes in access to common property resources which have implications for the real value of labour incomes. Therefore these figures may overstate the increase in real incomes since 1979. Especially for agricultural labour income, the net outcome may be more bleak than these figures indicate.
 - 20 Farm income is net of costs and includes not only income from cropping, but also from livestock, orchards, etc.
 - 21 It needs to be recalled that we have only data at two points in time, namely 1979-80 and 2004-05. We are not in a position to ascertain trends in poverty within this period, but can only say that the incidence of poverty in 2004-05 would be lower than in 1979-80. This is not inconsistent with a worsening of the poverty situation during the period of neoliberal reforms. In view of the impressive performance of the agrarian economy in Tamil Nadu during the 1980s and up to the mid-late 1990s, and its poor performance thereafter, such an outcome may be considered not implausible.
 - 22 See also Patnaik 2007.
 - 23 Cf Djurfeldt and Waldenström who have shown with Swedish data that farm family structures tend to be adapted to the needs of the farm, also in settings dominated by family farms and by nuclear family ideals [Djurfeldt and Waldenström 1996].
 - 24 We have tested a model where we included the interaction effects between class and joint family, but we did not get any statistically significant results.
 - 25 In fact our data show that caste explained very little of the variance in incomes already in 1979. There was more variance within castes than between them.
 - 26 For a different result, see Besley and Burgess (2000).
 - 27 In other words, the observed improvement in people's lives cannot be read as the outcome of the operation of 'benign' market forces, but must be seen as a political outcome of an interventionist and developmentalist state. The withdrawal of the state from such concerns and its new role as the guarantor of a neoliberal dispensation may not augur well for the further improvement of people's life chances, as the agrarian crisis of India shows.

REFERENCES

- Asian Development Bank (ADB) (2007): *Key Indicators 2007: Inequality in Asia*, ADB, Manila.
- Athreya, V B (2003): 'Redistributive Land Reforms in India: Some Reflections in the Current Context', Paper presented at The All India Conference on Agriculture and Rural Society in Contemporary India, Bardhaman, West Bengal.
- Athreya, V B, G Djurfeldt and L Staffan (1990): *Barriers Broken: Production Relations and Agrarian Change in Tamil Nadu*, Sage, New Delhi.
- Besley, T and R Burgess (2000): 'Land Reform, Poverty Reduction, and Growth: Evidence from India', *Quarterly Journal of Economics*, 115(2): pp 389-430.
- Chandrasekhar, C P and Jayati Ghosh (2004): *The Market That Failed*, LeftWord, New Delhi.
- Djurfeldt, G (1981): 'What Happened to the Agrarian Bourgeoisie and the Rural Proletariat under Monopoly Capitalism?', *Acta Sociologica*, 24(3), pp 167-91.
- (1996): 'Defining and Operationalising Family Farming from a Sociological Perspective', *Sociologia Ruralis*, 36(3), pp 340-51.
- Djurfeldt, G, V B Athreya et al (2008): 'Agrarian Change and Social Mobility in Tamil Nadu', Department of Sociology, Lund.
- Djurfeldt, G and C Waldenström (1996): 'Towards a Theoretically Grounded Typology of Farms – A Swedish Case', *Acta Sociologica*, 39, pp 187-210.
- (1999): 'Mobility Patterns of Swedish Farming Households', *Journal of Rural Studies*, 15(3), pp 331-44.
- Edmundson, W C (1994): 'Do the Rich Get Richer, Do the Poor Get Poorer? East Java, Two Decades, Three Villages, 46 People', *Bulletin of Indonesian Economic Studies*, 30(2), pp 133-48.
- Frazer, G (2006): 'Inequality and Development across and within Countries', *World Development*, 34(9), pp 1459-81.
- Freebairn, D K (1995): 'Did the Green Revolution Concentrate Incomes? A Quantitative Study of Research Reports', *World Development*, 23(2), pp 265-79.
- Fuwa, N (1999): 'An Analysis of Social Mobility in a Village Community: The Case of a Philippine Village', *Journal of Policy Modelling*, 21(1), pp 101-38.
- Goethe, J W v (1999): *Faust: The First Part of the Tragedy with the Unpublished Scenarios of the Walpurgis Night and the Urfaust*, Ware, Hertfordshire, Wordsworth Editions.
- Government of India (2005): *Mid-Term Appraisal of the Tenth Five-Year Plan*.
- Harris, B (1981): *Transitional Trade and Rural Development: The Nature and Role of Agricultural Trade*, Vikas, New Delhi.
- Hayami, Y (1997): *Development Economics: From the Poverty to the Wealth of Nations*, Clarendon Press, Oxford.
- Hayami, Y and M Kikuchi (2000): *A Rice Village Saga: Three Decades of Green Revolution in the Philippines*, Basingstoke, Macmillan.
- Kuznets, S (1971): *Economic Growth of Nations: Total Output and Production Structure*, Cambridge, Mass.
- Lindberg, S, R Vidyasagar, V B Athreya, G Djurfeldt and A Rajagopal (2008): 'Caste and Democratic Decentralisation in Rural Tamil Nadu', Department of Sociology, Lund University, Lund.
- Lipton, M (2005): 'The Family Farm in a Globalising World: The Role of Crop Science in Alleviating Poverty', IFPRI, Washington DC.
- Lipton, M and R Longhurst (1989): *New Seeds and Poor People*, Johns Hopkins University Press, Baltimore.
- Patnaik, U (2007): *Marx and His Successors on the Agrarian Question*, New Delhi, LeftWord.
- Schendel, W V (1981): *Peasant Mobility: The Odds of Life in Rural Bangladesh*, Assen van Gorcum.
- Sen, A (1981): *Poverty and Famines: An Essay on Entitlement and Deprivation*, Clarendon Press, Oxford.
- Srinivas Dasari, B N (2004): 'Land, Caste and Economic Mobility: A Study of Deltaic Andhra, c 1866-2001', *Madras Institute of Development Studies*, Madras University, Chennai.
- The Annual Report on Consumer Price Index Numbers for Agricultural and Rural Labourers (2004): Retrieved September 2006, from <http://www.labourbureau.nic.in>.
- Wood, G (2003): 'Staying Secure, Staying Poor: The "Faustian Bargain"', *World Development* 31(3), pp 455-71.
- Wood, G and I Gough (2006): 'A Comparative Welfare Regime Approach to Global Social Policy', *World Development*, 34(10), pp 1696-1712.