

CHAPTER 3-4: FOOD, NUTRITION AND THE STATE IN NORTHERN TAMIL NADU

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The Policy Impasse

Modern Tamil Nadu has placed food and nutrition first on its social welfare agenda. Since 1981-2, the state's current outlays for this purpose increased by a factor of 100 to stand at Rs 388 crores in 1994-5. Its outlay specifically on **nutrition** alone is the highest in India and greater than that of all other states put together. A review of food and nutrition policy in the state (Narayanan, 1996) identifies and traces the historical development of the political forces which now challenge this prioritisation. There are three types of food politics.

The first has been international. In the sixties, in response to the discovery that Tamil Nadu ranked exceedingly low on average calorie availability ¹, **USAID funded an ambitious survey into diet and nutrition, as a result of which the weaning stage of human growth was recognised as critical for nutritional**

¹1. Despite the existence of 25 types of nutrition scheme already in the state, beset by patchy coverage, idiosyncrasy and food substitution rather than supplementation.

disadvantage and the lowest two deciles of the income distribution were identified as the most vulnerable. As a result, Tamil Nadu was created a 'policy laboratory', funded by the IDA/IBRD, in which the largest donor-aided nutrition scheme in the world was implemented, supported by interests pleading for highly targeted nutrition investment as a cost effective element of the World Bank's lending for the development of human capital. The Tamil Nadu Integrated Nutrition Programme (known as TNIP) was set up in 1980 with the goal of reducing malnutrition by 50 per cent through a sophisticated mixture of voluntary weighing and anthropometric monitoring of children targetted at under 36 months, nutritional supplementation (with relapse treatment) for growth faltering and the centralised feedback of information. Implemented first in a few pilot districts, it was intended to be run state-wide, with World Bank funding phased-out over time in favour of state funding. This did not happen. The project has also always relied heavily on a voluntary element.

By the time the TNIP pilot stage had expired, according to its in-house evaluation, malnutrition had been reduced by 29 per cent, just over half its target. However, while severe malnutrition had been eliminated, the proportion of young children in moderate conditions of malnutrition had actually increased. The relapse rate was high - at 30 per cent. But the programme has been generalised and has its own 'vested' interests, ranging

from its cadre of village workers to technical policy advisers in the World Bank, concerned with leavening the Bank's neoliberal adjustment policies by measures to improve 'human capital'.

The second political forces are local and state-level. Shortly after TNIP had been set in motion, but with a long political tail (dipped in the waters of mass mobilisation, mass redistribution and a rhetoric of mass risk-reduction), ² the Anna Dravida Munnetra Kazagam (the ADMK party) assumed power, relaxed prohibition ³ and introduced the Chief Minister's Nutritious Meal Scheme (NMS), a midday school- meal scheme aimed originally at children between 5 and 14 years ⁴ and justified not only as a nutrition intervention but overtly as a gesture of political patronage, employment creation and social welfare ⁵ (Harriss, 1991a). Heavily criticised at the time by development

²2 . Kamaraj had piloted a midday meal as early as 1956 (*Frontline*, Oct 6th, 1995).

³3 . Thereby releasing revenue resources via duties and taxes on alcohol.

⁴4 . But rapidly extended to age 2 and upwards, and to pensioners aged 65 and over and to certain other non age-specific categories such as destitute widowhood and disabled people.

⁵5 . The latter by means of interdining by children and low caste and gender

professionals as not scientifically sound, the project was 20 times larger than that of the World Bank. Rejected by the Planning Commission, it has required the imaginative mobilisation and deployment of the state's own funds. While the scheme remains heavily politically personalised, the DMK opposition wasted no time in embellishing it when finally in power, with foods (a fortnightly egg) which make no sense in terms of nutritional cost-effectiveness. In the nineties, when the AIADMK was returned, soya flour and corn rava were added for meals in school holidays along with sweet pongal to celebrate the birthdays of ADMK party leaders and luminaries⁶. Despite widening the target, participation declined from the later part of the 80s (Table 1). Evaluations during the 1990s show i) a general improvement in nutritional status but ii) a gap in malnutrition opening up between the genders for the first time in this part of India (Table 2); and iii) a secular shift in diet against coarse grains and towards rice. The latter trend was already set by the late seventies (Harriss, 1981) and is likely to have been further affected by the composition in the form of rice of the noon meal and the public distribution system. From Rs 3.4 crores in 1981-2, the NMS cost Rs 388 crores in 1995-6 (within which delivery charges - 5 per cent at the start - rose inexorably to 29 per cent in 1995-6) (Narayanan, 1996). Salaries are the

quotas on staff.

⁶6 . Social Welfare Dept., data, 1994.

bulk of this cost component. About 100,000 people are employed as cooks and helpers. Formal preference is given to employees who are low caste/destitute widows/women, and at the start there was a certain amount of success with this positive discrimination. As is evident below, this has been diluted over time. Aside from its high visibility in public opinion, the intervention has built a decentralised and entrenched set of 'bureaucratic' interests in its perpetuation.

The third political force is both local and national (and has also been influenced by the Washington consensus). From the era of droughts in the 1960s, Tamil Nadu state has controlled marketing and procurement (particularly in the Kaveri delta) in pursuance of a food policy objective of self sufficiency (which it has never reached, being heavily dependent on imports from north India through the public distribution system (PDS)) (Table 3). The Indian PDS covers about 10% of foodgrains' distribution.⁷ In Tamil Nadu, peoples' entitlement to PDS quotas of rice at controlled prices

⁷7 . See Olsen and Rani, 1997; Mooij, 2000; and Swaminathan, 2000 a and b for in-depth, critical analyses of the PDS. While by 2001, its national subsidy had swollen to Rs 10,000 crores, it is not swingeing in comparative, international terms, nor is it absolutely so huge that its removal will put paid to the budgetary deficit.

fluctuates, is politically controlled and became ruralised as part of a more generalised political response to agrarian voters. In 1993-5, entitlements were widespread and hardly targeted (Table 4). The rises in the issue prices of ration (PDS) grain implemented by the Government of India in 1991 and again in 1994 as one prong of its agricultural reform policy were almost entirely absorbed by the Government of Tamil Nadu, in an act of political resistance to New Delhi. In Tamil Nadu, the real subsidies on the PDS and NMS to maintain stable food prices for poor adults and children *doubled* over 5 years, amounting to Rs 1,157 crores in 1995-6. While this exceeded the deficit on the state's revenue account (Narayanan, 1996), both schemes have been politically rock solid. In 1992, the Government of Tamil Nadu attempted to target the PDS to the poor but had to retract within 4 days. In 1995 Fair Price Shop workers were given permanent status as employees at a time when the state government was under intense pressure to shed staff.

Tamil Nadu, like Andhra Pradesh ⁸, is running a politics of opposition to staple food policy reforms about which there is a wide professional consensus. Johl is typical ⁹:

⁸ . And, according to Mooij (1996) this is true to a lesser extent in the other two southern states, Karnataka and Kerala.

⁹ . But see also Rao and Gulati, 1994, p.3; ed. Bhalla, 1994, pp.132-178; Pursell

It would be prudent to target the priorities of the PDS to the really needy and vulnerable sections of society.... Unless the PDS is rationalised to contain its requirements within reasonable limits, catering only to the exigencies of natural calamities... and for supply only to the vulnerable sections of the society, in addition to building reasonable levels of stocks for food security, the vicious circle of escalating needs for higher procurement targets and the accompanying market and price distortions will continue to play havoc to the farm economy which acts at cross purpose with the development of a free and competitive market (1995, p. 478).

This minimalist formulation, the orthodoxy of the food policy high command, has been reinforced by cannon from New Delhi: orders from the central Government's Finance Commission to reduce subsidies on staple food. In 1992, New Delhi attempted geographical targeting on individuals in deprived regions and slums. New Delhi has found the PDS very difficult to reform, even as its control over food security to states like Tamil Nadu has increased. At the All-India level, despite the hikes in the issue price, food subsidies

and Gulati, 1995.

actually increased in the early reform period while PDS offtake declined (from 16.6 m tonnes in 1991-2 to 12.6 m tonnes in 1994-5)¹⁰. In 1997, the PDS was targeted at households below an income poverty line and entitlements to the rest of the population were modified, greatly reduced or withdrawn (Swaminathan, 2000a). Since political resistance is straining at its fiscal limits, states like Tamil Nadu with low debt-service ratios must borrow to maintain their food subsidies. Such borrowing is still regulated by the central government, which puts the policy ball back in New Delhi's court. The Tenth Finance Commission provided a blueprint for the reduction in food and electricity subsidies in the second half of the nineties. Resistance to these recommendations by states like Tamil Nadu involves a trade-off between on the one hand employment, expenditure on unproductive schemes and developmental investment - all of which would need cutting - and on the other hand the raising of local tax revenue and plugging of tax loopholes - both of which are exceedingly difficult. To understand this resistance, it is worth knowing the extent and character of nutritional vulnerability, the social profile of access to these nutrition interventions and the management of delivery systems. In addition, it is possible to compare and contrast food

¹⁰10. Swaminathan (2000b) finds that if food subsidies are calculated as a share of GDP they have been practically unchanged over the decades of the 80s and 90s and have declined since the late 70s.

and nutrition in northern Tamil Nadu over a period of twenty years, when technical change in agriculture has affected both income distribution, crop prices and therefore the prices of the essential commodities which constitute a high proportion of the diet. These are the objectives of this chapter.

Rural Nutrition in Tiruvannamalai District of Northern Tamil Nadu over Two Decades

Details of food consumption for 1993-4 ¹¹ were obtained for the sample of 128 households. Four classes were distinguished as a basis for analysis to incorporate both agrarian and non-farm activity, exchange relations and demographic factors - see chapter 1-4: i) poor non agricultural households; ii) poor peasants with land; iii) poor landless households; and iv) elite households. Landholdings vary within these classes and overlap between them. ¹²

¹¹11. Consumption includes that from own production and purchases, including those from the PDS; but it excludes the food intake of children from the NMS. Expenditure therefore is not confined to cash/expenditure but includes the imputed value of own production, estimated at average prices for the relevant social group and village.

¹²12. Not all these classes were found in each village. Poor non agricultural households were confined to Veerasambanur. Richer households were dominated

This is a finer grained classification than that used by Hazell and Ramasamy for 1982-4 (henceforth HR91), but a rigorous comparison is precluded in any case by the smaller survey domain in 1993-4 and by the fact that 1982-3 was the second year of severe drought while a follow-up survey in 1983-4, the year of recovery, was confined to a subset of those villages which had suffered most during the drought. So far as possible however, the methodology followed by Pinstруп-Andersen and Jaramillo (1991) is used here so that a rough comparison may be attempted. In what follows, we have to make two rather heroic assumptions. One is that the 1993-4 data for the three villages are not wildly different from what those for the 11 villages would have been. The second is that the class of poor farmers proxies the category of the 'small farmer' of 1982-4 (with under 1 ha) and that of the elite households proxies that of 'large farmers' with more than 1 ha of operational holding in 1982-4. Table 5 presents details of these classes (and may be compared with Table 5.1, HR91, p. 87 reproduced here as appendix 1, Table 1). While between 1973-4 and 1982-3 the average size of landless households had risen from 3.6 to 4.4, that for small farmers from 5.1 to 5.6 and that for large farmers from 6.2 to 7.2, in 1993-4 family sizes in the subset of villages were smaller: 4 for landless households, 4.8 for poor households and 5.2 for elite households.

by those in Nesal. Those in Vinayagapuram have a non-land assets base.

Incomes and Food Expenditure

Real incomes and expenditures have been deflated using the Consumer Price Index for Agricultural Labour (CPIAL) for the adjacent and quite similar district of South Arcot (in the absence of a district-specific CPIAL for North Arcot or for Tiruvannamalai Districts). These are presented in Table 6 (and see Appendix 1, Table 2 for the period 1973-4 to 82-3). The income data for the 1982-3 period is biased severely downwards as a result of two years of severe drought such that the best comparison skips a decade to 1973-4. Although there are wide intervillage variations (Table 6) ¹³, **real** per capita incomes have increased over the two decades by a factor of 2.8 for landless agricultural labour households (Rs 885), 4.5 for small paddy producers (Rs 1,749) and by 6 for richer households (Rs 4,433). Despite the rise in absolute real incomes throughout the rural class structure, and in contrast to the conclusions drawn for the decade 1973-4 to 1983-4 (namely that income inequality was declining) relative income inequality is increasing. This is a result of investment in the non-farm economy by the agrarian elite, most notably

¹³13. Low outliers being the landed poor in Veerasambanur and the richer households in Vinayakapuram (perhaps fallen on hard times between the household Census in September 1993 and the expenditure and consumption survey, 6 months later?); high outliers comprising the richer households in Nesal village.

in so-called informal financial institutions, transport, construction and rice milling (chapter 1-4). A similar trend (and likewise a conclusion different from that of the first decade) is evident in total real per capita consumption expenditure ¹⁴ **which has increased by a factor of 2.2 for landless labour (Rs 714) by two for poor producers (Rs 693) but by 3.2 for richer households (Rs 1,758).**

While in 1982-4 food expenditures amounted to 70 to 80 per cent of total expenditure throughout the expenditure distribution, conditions were radically changed by the 1990s. Only among landless labourers in Veerasambanur and Nesal does the relation remain. In other agrarian classes and villages the ratio is 50-60 per cent. Among the agrarian elite of Nesal it has actually fallen to 27 per cent, similar to average food expenditure patterns of developed countries such as France and Italy¹⁵. Again we find a recent, strong, growing social differentiation in expenditure relations and a social and geographical transition in expenditure patterns within and between villages.

¹⁴14 . While ten and twenty years ago this was obtained on a monthly basis, in 1993-4 this was collected for one month for each of the three seasons, and multiplied up accordingly. It is just possible that the relatively low expenditure of poor landed households is a result of this method.

¹⁵15 . In Britain with its industrial food culture, the proportion is even lower.

The cost of the diet (measured as the cost per 1,000 calories and deflated to 1973-4 prices) had increased during the first decade faster than had the general consumer price index (Appendix 1, Table 3); the average real cost of the diet increased by 50 per cent. Real food prices had increased and yet dietary diversification towards more expensive calories had also taken place. This was attributed to the income effect of the new agricultural technology. In 1993-4, the real cost of the diet per caput per day ranged inversely with class between Rs 0.13 and 0.3 (Table 7). Over the second decade, it declined by an average of about 65 per cent¹⁶. The decline in costs can also be observed from the real price of rice per kg in 1993-4 which ranged from greatly Rs 0.77 to 2.14 per kg (in 1973-4 prices) with a median 11 per cent below that of 1983-4. By and large, the cost per calorie varied directly with class, elites eating more costly fine quality, raw rice and poor households eating coarse quality, parboiled rice. The decline in rice prices will be affected both directly by the supply of rice at heavily subsidised administered prices through the PDS, but also by the deflationary effect of the PDS on open market rice prices.

¹⁶16 . All intervillage averages in this chapter are weighted by relative subsample sizes.

Household Energy and Protein Consumption

Food consumption in 1993-4 was reported in quantities for a preceding month. Conversion to nutrients made use of the factors in the classic food composition tables of Platt (1957). Conversion of household members by age and sex to male adult equivalents used the standard consumption co-efficients specified in Table 5 (HR91, p87). While between 1973-4 and the recovery year of 1983-4 average calorie consumption per person increased in about two thirds of cases, the gap between small and large farmers narrowed while that between small farmers and the landless widened. Average daily energy consumption per adult equivalent was about 1,900 calories in 1973-4, consistent with other estimates for the period and region¹⁷. By 1983-4, it was reckoned to be about 2,500 (Appendix 1, Table 4) but by 1993-4 it was 2,186 in the three villages. Table 8 updates the evidence. Over the second decade, daily calorie consumption had settled back : from 2,884 to 2,231 per capita for richer households and from 2,606 to 1,877 for poor peasant households. Calorie consumption in these households is very similar to that calculated for 1973-4. In many households, apparently low calorie consumption may not necessarily be want-induced. In landless labourer households, mean calorie consumption p.c.p.d. has increased from 1642 to a weighted average of 1700 - a 4 per cent increase over the decade. This is less than income and

¹⁷17 . See Harriss, 1979, 1991a for reviews of evidence.

expenditure trends, but at variance with that of other classes.¹⁸

With increases in real incomes, an increase in protein consumption could be expected. But, with the exception of landless households which register a slight increase, these remain roughly constant and considerably below the (differentiated) levels registered throughout all social classes by Ryan et al in the late seventies for 4 regions in south and central India.¹⁹

¹⁸18. The statistic for landless labour **excludes** the results for Nesal about which we have reservations which have not been resolvable (Table 8). Total calorie consumption there is 2891, 60% of which is **not** from rice - see Table 9. Either this staggering increase is strongly influenced by dependence on the PDS which liberates income for fruit (see Table 10) and/or this is the result of exceptional times of feasting for agricultural labour (a fact confirmed retrospectively by field investigators) and/or the data for this class is in error.

¹⁹19. In Veerasambanur and Nesal it appears that poor landed households consume less than landless labour households, while common convention and the evidence for ten and twenty years ago suggests otherwise, it is possible that consumption from own production was not correctly estimated in these villages. For detailed data on which a comparison of class specific protein consumption can be based, see Ryan et al. 1984, pp. 97-120.

In the first decade from 1973-4 the share of rice in total calories dropped by 25 to 50 per cent from three quarters to two thirds. Pinstруп-Andersen and Jaramillo (1991) argue that the absolute amount of rice consumed changed little, but was complemented by a more diversified diet. Table 9 shows that rice still provides two thirds to three quarters of total calories. The shares of calories from rice have risen across villages and classes. Table 10 breaks energy down according to its food origins (and may be compared with Appendix 1, Table 5). Here, intervillage variation in the type and extent of diversification is more strikingly apparent than is social differentiation in diet. Whereas ragi and pulses provide 21 to 28 per cent of calories in Vinayakapuram, and while the diets of Veerasambanur are much more widely diversified than 20 years ago but still dominated by rice, in Nesal, fruits and vegetables and to a lesser extent groceries and dairy products contribute materially to calorie consumption. This intervillage variation in dietary composition of nutrition is even more pronounced when protein is examined (Table 11). In particular, in Nesal village, negligible shares of protein appears to come from rice (2% contrasted with 60 to 70 per cent in the other two villages). This may be a result of the 'festival bias' discussed in footnote 18.

Energy Deficiencies

Malnutrition is a phenomenon most accurately ascertained at the individual level

by anthropometric measurement and clinical signs and symptoms. Food and nutrients supplies at the household level at a single point in time are only the roughest of indicators of household nutritional stress, let alone individual malnutrition. Nutritional stress may also occur in households without apparently low supplies due to intrahousehold allocative inequities (Harriss, 1991b).

In a separate study of the nutrition of households with children under 10 years of age in Veerasambanur and Dusi villages of North Arcot, carried out in 1983-4 as part of an evaluation of the PDS and NMS, comparisons were made between energy intakes at the household level and energy requirements (Harriss, 1991a).

The notion of requirement is controversial for four reasons:

- i) requirement levels established from reference populations seem to be set high in relation to energy consumed by them;
- ii) standard alterations to western requirements to cater for body weights, work and activity, pregnancy and climate in tropical conditions seem to result in exaggeratedly high norms;
- iii) there is inter-individual variation in requirements;
- iv) there may also be intra-individual variations in requirements. It is hypothesised that the human body adjusts its efficiency of energy metabolism in a benign, autoregulatory manner over a range of levels of energy supply. Adjustment may **also** take physiological and/or behavioural forms (Payne, 1994).

The choice of requirement is therefore somewhat arbitrary. The advantage of setting a 'low' requirement lies in its diagnostic accuracy. It is the more likely that nutritional stress will be felt by most or all members of households below a low requirement level²⁰. **We have used two concepts of requirement. The first is nutritional: 1.2 times the basal (resting) metabolic rate for adults (calculated per kg of body weight) for the average body weight of an adult male in Tamil Nadu. This is 1,700 calories. This can then be used as a standard by which to evaluate the energy supply of each household (once its members have been converted to adult equivalents). It can also be used to compare the results of the 1993-4 surveys with those of the survey of Veerasambanur and Dusi in 1983-4 (Harriss, 1991a, pp. 43-47). Second, in order to compare our results with those of Pinstrip Anderson and Jaramillo, we use their higher 'economists' standard of 80 per cent of the recommended daily allowance for an adult man, 2,400 calories (HR91 p94). This is 1,920 calories. The results are presented in Tables 12 and 13 respectively.**

1.2xBMR: In 1982-3, 7 per cent of elite households and 55 per cent of poorer landed and non landed households were estimated as having energy supplies below 1,700 per day per consumption unit. Table 12 for 1993-4 shows that one richer household in Nesal still falls into this category and the weighted

²⁰20 . But we have not been able to examine seasonal nutritional stress.

inter-village average for richer households is half that of ten years earlier. Between 17 and 35 per cent of poor peasant households have low energy supplies (the weighted average being 27 per cent) while 25 per cent of agricultural labourers fall into this category. A weighted average of 26 per cent of all types of poor household risks energy stress²¹. **The combined effects of real income increases, lower real food prices and access to the public distribution scheme have halved apparent nutritional stress between 1982-3 and 1993-4.**

80%RDA: In 1973-4, two thirds of small farmers, 56 per cent of agricultural labour households and 39 per cent of richer households consumed less than this requirement level. Agricultural labour households were better off nutritionally than were small producers. By 1982-3, the proportion of small farm households in apparent energy stress had dropped to 56 per cent and those in the other two groups remained about constant (Harriss, 1991 a). In 1993-4, 38 per cent of poor peasant households were below 80% RDA while 35 per cent of landless labour households suffered such stress. We see that much (about one third) of the energy stress identified by the less strict second criterion is of shallow intensity and is excluded by the use of the first. The shallower energy stress of poor peasants and landless labour appears to have dropped by about 35-40 per cent over the last ten years.

²¹21 . This statistic excludes Nesal. See endnote 18.

The Impact of Change in Incomes, Prices and Household Factors on Food Consumption

In this section, we examine the impact of income and price on nutrition. After Pinstrip-Andersen and Jaramillo, we modelled nutrition as a function of a vector of household, income and price variables and the analysis was disaggregated for two pooled subsamples, that of poor landed households and another of landless agricultural labour households. ²²

In each case we modelled nutrition in two ways:

- i) as total daily calorie consumption per adult equivalent (LCALPAD)**
- ii) as daily calories obtained from rice per adult equivalent (LRCALPAD)**

Independent variables were:

- i) household size (PERS)**
- ii) monthly income per adult equivalent (LY_PMPAD)**
- iii) prices in Rs per kg of the principal food items**
 - rice (LRICEPR)**
 - ragi (LRAGIPR)**

²²22 . Due to insufficient degrees of freedom and incomparable characteristics in the richer strata across villages, richer households were dropped.

vegetables (LVEGPR)

meat (LMEATPR)

groceries (LGROCPR)

For the analysis of the nutrition of landless households, the last two items were excluded as not only did they prove insignificant in a trial, but also they reduced the explanatory power of the regression (judged by R squared and F statistics). A logarithmic transformation provided superior fits (Appendix 2).

Poor landed peasants (Appendix 2, Tables 1 and 2): Income has little effect on total calorie consumption: the income elasticity of demand for total calories was 0.03 and income was insignificant as a determinant. By contrast it was highly significant for rice consumption with an elasticity of -0.26. A 1% rise in income leads to a drop in rice calories of 0.26% as consumers diversify their diets. Ten years ago income elasticities were calculated as much higher (that for total calorie consumption being 0.72 and for rice 0.9). There are two possible explanations for this phenomenon. One is that both total calories and rice consumption reach the flat part of the Engels curve. The second is that PDS supplies neutralise the effect of income, which is an important feature of a successful rationing system.

The rice price elasticity of total calorie demand was -0.48 emphasising the sensitivity of rice consumption to prices. Other products: ragi, vegetables, meat and groceries all had positive price elasticities and all except that for meat were

above unity and highly significant. While ragi and vegetables had negative cross price elasticities, groceries had a positive co-efficient showing that ragi and vegetables are substitutes and groceries are complements to rice consumption.

Household size has a positive but insignificant impact on calorie consumption.

The explanatory power of the models are high and significant.

Landless Agricultural Labouring Households (Appendix 2, 3 and Tables 2, 4):

The same cannot be said of the model for landless labour where almost all the variables are insignificant and the r-squareds and f statistics are low. For what they are worth the income elasticity of demand for total calories is 0.16 and for rice 0.09, which contrast strikingly with the respective co-efficients for 1983-4: 0.78 and 0.87. The various price elasticities of demand for total calories were generally below unity and highest for vegetables. Unlike the landed households the cross price elasticity of rice consumption and vegetable price is above unity (1.25) such that vegetables are a complement to rice while that for ragi is negative, ragi being a substitute, as it is for landed households. Household size exerts no effect on consumption, perhaps because it has reached a low limit, with little demographic variation in this class.

Income is thus only of significance to calories from rice in the class of poor

peasants, while **rice consumption in both sets is sensitive to rice prices²³**. If **income and prices are not very significant influences on total calorie availability at the household level, then something else must be**. We suggest **that this is the public distribution system, to which we turn**.

The Role of the Public Distribution System in Nutrition

Almost every household has access to the PDS both in entitlement and in practice (93 per cent in Nesal and the entire sample elsewhere ²⁴)²⁵. **The Fair Price Shops from which rice is retailed at controlled prices also sell sugar and kerosene at controlled prices and under ration. Details of access are presented in Appendix 3. Rice consumed varied from 122 kgs (in the households of poor peasants in Nesal) to 30 kgs per household per year (richer households in Vinayagapuram). By and large, this was lower than PDS consumption ten years' previously and well under the quota everywhere (Appendix 3, Table 1).**

²³23 . The reduced seasonality of prices has stabilised open market prices over the two decades - see the paper on yields at the workshop.

²⁴24 . However one ration shopkeeper gave evidence that 15 per cent of families in his ward were without cards.

²⁵25 . Swaminathan (2000a), following Parikh, finds that PDS coverage (1986-7) was 87% in Kerala, 55-60% in AP and Tamil Nadu but 2% in UP and Bihar.

While quotas were underutilised to the same extent by all social classes in Veerasambanur, in the other two villages, the richer households made less use of the PDS than did the poor. There was very considerable intervillage variation in access, Nesal, the most unequal, diversified and accessible village (with half the households in our sample) cornered no less than 86 per cent of the rice distributed in the three villages²⁶. The PDS played a far less important dietary role among the other half of our sample in the other two villages, where the bias was less markedly pro- poor. On average then, PDS rice made up 22 per cent of total calories and 35 per cent of calories from rice in the diets of richer landed households. It constituted 27 per cent of total calories and 39 per cent of rice calories in the diets of poor peasant households and 50 per cent of total calories²⁷ and 72 per cent of rice calories in the diets of landless agricultural labour. Here we have the explanation for the lack of effect of income and prices on nutrition. The subsidy was progressive: both absolutely and relatively less in the richer households than in the poor ones, where it represented a transfer of Rs 200- 350 per year²⁸.

²⁶26 . And with very similar trends for sugar and kerosene too.

²⁷27 . Excluding Nesal, see footnote 18.

²⁸28 . This was based on the fact of the issue price for common parboiled rice being Rs 2.5 in 1994, while a local (Arni Regulated Market) average open market price was Rs 5.50. Other estimates suggest that rice prices averaged Rs 1.50

The bulk of the subsidy went to the most developed and unequal village where it was heavily biased in favour of poorest households (See appendix 3, Table 2).

The PDS was evaluated by its users, as it was ten years' previously (Appendix 3, Table 3). The system has not changed much. Employees are not substantially more manipulative than a decade ago. Outside scarce periods, self-sufficient households may donate their ration cards to poor/client households. Only one household owned up to pledging its card to a shopkeeper in return for a loan. Interviews with PDS employees however revealed that pledging is common. In 1994, one village grocery shop had 10 cards from scheduled caste households to whom the shopkeeper had paid Rs 25-50 per card. That shopowner then purchased goods on ration (this time up to the full quota, which would be four times actual average offtake per household) and retailed them at open market prices. In all three villages, there were complaints from card holders about poor quality and about tricks with weights and measures. Other problems (adulteration in one, the sales of ration rice at open market prices) were not so widespread. In addition to rectifying these faults, people asked for higher quotas not only for rice but for other commodities traded under the Essential Commodities Act. They

higher than this, in which case the subsidy was accordingly greater.

revealed the political sensitivity of reductions in entitlement. Furthermore, certain other 'Essential Commodities' are also diverted for trade. Subsidised kerosene is resold from ration shops to substitute for diesel (the price of which is 3 times the price of kerosene) in oil engines, a process which damages them.

The experience of PDS employees was juxtaposed. By social background all were male, from landed, Caste Hindu households where agriculture was the main source of income. They had a higher social status than the bulk of their clients. One of three had paid a bribe to obtain the job. Supplies to their shops were timely but tended to be short, except for kerosene which was both delayed and short. Their own admitted chicanery with weights and measures was justified as compensating for transit losses or theft by Civil Supplies Corporation employees, typically of 5 kgs per 75 (or around 6 per cent). This is quite high but very similar to leakages reported ten years' ago²⁹. The sale of PDS rice at open market prices at the month end also helps Fair Price Shopkeepers to 'recoup losses'.

The delivery system of the PDS has not deteriorated noticeably and it

²⁹29. In a careful study of the PDS in Karnataka, Mooij (2000) put the systemic losses at about 10 per cent.

remains a redistributivist measure, important in the calorie base of the poor.

Access to the Nutritious (Noon) Meal Scheme

While a total of 78 children from 40 per cent of the households sampled ate the meals, our survey captured no pensioners taking this part of their pension entitlement. Access was gendered against girls throughout the age distribution but maximised in two physiologically sensitive age-ranges: first, in the pre-school cohort where half as many girls as boys ate the meal; and second, in adolescence, when two young women ate the meal for every three young men who did. Access was biased in favour of the assets-poor and low caste in all villages. No children from weaving households had access to the scheme because they were hard at work instead of being in school. While 55% of children from landless agricultural households took the meal, just 25% of children from elite households did (Appendix 4, Table 1). Although intended as a universal entitlement, the nutrition scheme turned out to be broadly socially redistributive. Holding class constant, the households where children ate the school meal (the calories from which were not included in the calculation of household consumption) had a lower average total calorie consumption than those where children were excluded. As was the case with the PDS, the subsidy on the NMS was progressive. It amounted to between Rs 45 and 57 per month for poor landed or landless households - the equivalent of twice or thrice the actual Rs benefit of the PDS and half the cash benefit of a pension. Depending on the number of children participating, it

supplied an additional 740-939 calories to poor households. In proportional terms, the bulk of the subsidy went to the poorest, most remote village - thereby complementing rather than supplementing the distribution of the PDS (Appendix 4, Table 2).

The Noon Meal Scheme was evaluated for us by parents of its users (Appendix 4, Table 3). It is hard to summarise the wide variety of responses. The Noon Meal ought to supplement food eaten at home. This was only the case (according to parents) in Veerasambanur while, in the other two villages, parents said it substituted for meals at home. An important proportion of poor households reported the NMS as enabling families to improve school attendance. In Vinayagapuram and Veerasambanur, parents in exactly those poor households where food was most needed reported low quality or quantity: 'very bad food', 'worms and weevils in food' and 'no vegetables or green food'. Caste discrimination and the appropriation of food by cooks was a quite common complaint - along with demands for improvements in quality and quantity, for monitoring by state officials and for the involvement of parents in advising on recipes.

Employees of the NMS described their experience of the scheme. Unlike ten years' ago, they are now 90 per cent caste Hindus, half from landowning families in which their income was a minor element and half from landless households

where this income mattered. They report caste interdining as a major achievement of the NMS. However they face systematic problems with raw materials. Supplies are fixed not on the enrolment record, but on 90 per cent of enrollment on school days and two thirds during holidays. This is intended to dam leakages but it means short supplies on occasions of complete enrolment when the 'feeding strength' increases. Over and above this, there are shortages in supplies at the point of offtake from the Civil Supplies depots. One estimate was Rs 250 per month, once more recouped by reducing the entitlement per person. Other problems for the smooth running of the NMS were the cash allocation for cooking fuel and for vegetables, the poor quality of the ingredients supplied and poor storage conditions - with rats a menace. Further problems for the organisers included delayed payments of salary.

The inspection of accounts, stocks and food quality is regular, politicised, but, unlike ten years' previously, apparently no longer lubricated by any 'commissions'. However, while older employees generally did not secure their posts corruptly, this is no longer always the case and bribes as high as Rs 7,000 were mentioned. Corruption is far from expunged from the system.

A second group of nutrition workers managed to combine the work on Tamil Nadu Integrated Nutrition Programme (described at the start and covering children aged 6 months to 3 years) with that on the Nursery/'*balwadi*' sector of

the Noon Meal Scheme (for children aged 2-5 years). Their comments on raw materials entirely confirm those of the noon meals organisers attached to schools³⁰. **By contrast, the one TNIP organiser interviewed is well motivated and also describes a well functioning system of monitoring and supplementation devoid of problems of corruption, theft, shortages and low quality.**

The Noon Meals scheme could be improved, according to those who run it, if the supply irregularities could be reformed. This however points not only to a lack of permanent incentives but also to criminal or corrupt transactions in the urban or non-local economy, which are by no means confined to the Civil Supplies Corporation but generalised (see chapter 4-1). No single institution of the state could easily be ‘cleaned’ or keep itself clean thereafter in isolation from others.

Energy from Alcohol

The consumption of alcohol is generally excluded from nutrition. Calories from alcohol are ‘empty’ of other nutrients. They are also expensive and confined to adult men. Their consumption is reputed to be a vice of low castes, a vice moreover in which the state has a keen interest since it generates a reliable current of revenue. In Tamil Nadu, this amounted to Rs 319 and Rs 413 crores in 1994-5

³⁰30 . So did the five cooks, helpers and ayahs etc.

and 1995-6 respectively.³¹ In earlier research, we learned that drinking was not simply a low-caste practice but was widespread. It also added to, or created, food stress. In 7% of households the outflow to the state in alcohol tax exceeded the subsidy from the state in PDS/NMS. In all food-stressed households, if the expenditure on alcohol had been diverted to the cheapest sources of calories and allocated to all family members according to requirements, food-stress could have been eradicated (Harriss, 1991, p. 53, p. 82).

In 1993-4, while about half the households had a drinker (Table 13), the proportions varied from one third among landless labour to two thirds among the rich. While there is wide inter-village variation in the social distribution of light drinkers (those known as ‘drinkards’ who consume less than one litre of spirit (arrack) per month), of the 42% of drinkers whose households are below the poverty line, some three quarters of them consume more than one litre per month.³² All the food stressed households (those in

³¹31 . Government of Tamil Nadu, 2001a.

³²32 . The village diaries tell us that liquor is sold in the villages illegally but openly. In 1993 a litre of arrack cost Rs 12. Arrack was commonly diluted with water (3 parts to one) and sometimes adulterated (e.g. with ‘chloride hydrate’) ‘for kick’. Liquor is also smuggled from Andhra Pradesh in 100 ml cellophane

which calorie consumption per adult equivalent was under 1,700 calories (1.2 BMR) per day) **had drinkers**, including 5 richer households in Veerasambanur. If the cost of this habit is added to total food expenditure, we find that alcohol made up 22% of the total food-and-drink budget in food-stressed landless households, 26% for poor peasants and 33% in (admittedly unusual) rich, food-stressed households. In household with drinkers but not in food-stress, the respective proportions were much lower - 7% and 6% - excepting rich households (where they averaged 44% owing to heavy consumption (>59 millilitres/day over the long term in 2 cases). If the average expenditure on alcohol in food-stressed households were translated into the cheapest source of calories from food grains, an additional 20 person-days of energy would be released. Among poor landed and landless drinking household the outgoings to the state in tax on alcohol (estimated at Rs 35/m) cut the net subsidy on the noon meal by two thirds.

packets via a marketing system in which fines on traders and bribes to the Excise Department and Police are institutionalised. Ex-servicemen and ‘professionals’ (teachers and officials) prefer Indian Made Foreign Liquor (IMFL) which is purchased (in local towns), for consumption and onward trade in the villages. Toddy is also tapped and fermented in local villages and plays an important role in village festivals and death ceremonies. In one of the three villages, there is also an illicit still, working at high capacity.

Conclusions

While real incomes increased over the two decades (by 2.8 for landless agricultural labour, 4.5 for poor peasants and 6 for richer households), they also became more highly unequal. In the richer group, dominated by Nesal village, this growing inequality led to a massive decline in the proportion of expenditure on food and was coupled with dietary diversification. Non-food disposable income will have increased in both absolute and relative terms because the cost of the diet, of calories from rice, and real rice prices have all dropped over the last decade by a factor slightly greater than their rise in the previous decade - leaving calorie costs at about their 1973-4 level. Calorie consumption has followed the same trend, except for that of landless agricultural labourers (apart from those of Nesal village) whose calorie consumption has gone up by 4 per cent.

Nutritional vulnerability (very low calorie supplies) has declined by a third over the last decade. Yet among the classes of poor household it averages 26 per cent.

³³ **Alcohol consumption exacerbates food-stress and eats into the net subsidies from the PDS and NMS.**

³³ 33 . The figure of 35% is consistent with the State-wide head-count estimate of poverty (based on a nutritional poverty line) for 1993-4: 33% (Government of Tamil Nadu, website, 2001b).

Policy Implications

It is argued that a state verging on bankruptcy cannot justify the maintenance of food subsidies when real agricultural wages are rising (Narayanan, 1996). We found that income and prices are only significant determinants of calorie consumption for poor landed peasants and not for other groups of poor households or for landless labour, whose food consumption is significantly affected by the PDS. The PDS works in a socially redistributive way and protects the food security of poor peasants and agricultural labour households. It provides 39 per cent of the rice calories for poor peasants and 72 per cent for agricultural labourers. On the other hand, these social benefits are disproportionately captured by one of the three villages, the largest, most accessible, most diversified village. And, through 'leakages', the mortgage of cards, sale of ration rice at open market prices, etc there is a non-trivial upwards and sideways redistribution of rice. The quality of the PDS and NMS has not improved, but it has not markedly deteriorated either. The interventions are themselves the targets of a multiplicity of interested attention (from theft - amounting to 6 per cent of grain and borne ultimately by the official 'targets', to bribes for employment, of up to Rs 7,000).

The public distribution system needs to be protected since poor agrarian classes use it to an extent that confounds the relationships between income

and consumption. If finer targeting were forced upon the Government of Tamil Nadu then to entitle the landless (who are more visible and conspicuous for targeting) to the neglect of the hardly landed, would, on these results and on strictly nutritional grounds, be inequitable. Targeting raises the costs of delivery. In addition there are many other costs of targeting listed by Swaminathan (2000a): errors of exclusion, the distortion of information, the stigmatisation of the eligible, loss of quality and the erosion of budget support. In a further longitudinal study of village evidence from Maharashtra, Swaminathan and Misra (2001) have found that as targeting has intensified, both the E- errors (of inclusion of the ineligible) and the F errors (of exclusion of the eligible) are on the increase. In addition, food and 'freedom from hunger' is a right (Alston, 1994), best guaranteed by the state with minimal targeting.

As for reform in the direction of self selection (which is known to minimise both administration costs and F-errors), the state, by its choice of rice for procurement and distribution, and 'the market', by the convergence of prices of superior and inferior grains, have forfeited the possibility of targeting by means of inferior, coarse grains.

To raise the entitlements of income-poor households by doubling the ration to 20 kgs while not allowing poor households to purchase less than the stipulated consignment, as happened in 2000-1 is not only inequitable and inefficient, it is an

act of political vandalism on the PDS itself. The much criticised operating costs, unprecedented levels of stockpiling of foodgrains and rank waste are the consequence of an anti-social issue policy combined with the political need for incentive pricing to producers of marketed surplus in NW India.

Although reform to the PDS needs to protect the consumption of poor people and although consumption of poor landed producers does not seem to have increased over the long term, real trends in incomes and prices suggest room for modest upwards adjustment of PDS issue prices.

If, as has been suggested, costs are to be reduced by targeting pre-school nutrition along the lines of TNIP-2 (the World Bank's project), or by engineering some convergence between the NMS and PDS (Narayanan 1996, p. 35), the special nutritional position of girls, which is deteriorating, may be rendered even more vulnerable. Pre-school girls may not be brought for nutrition monitoring; take-home food supplements are, once there, subject to social norms or allocation sometimes at variance with those advised by the state.

The Government of Tamil Nadu could protect the PDS as presently implemented by preserving a socially inclusive entitlement and only the crudest of targeting. However, to do so, it would have to look to ways of reducing tax evasion on those revenue heads which it controls so as to preserve or increase its revenue base.

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