



Munich Personal RePEc Archive

Future of Mid-Day Meals

Dreze, Jean and Goyal, Aparajita

Center for Development Economics, Delhi School of Economics

2003

Online at <https://mpra.ub.uni-muenchen.de/17386/>
MPRA Paper No. 17386, posted 19 Sep 2009 14:19 UTC

Future of Mid-Day Meals

Spurred by a recent Supreme Court order, many Indian states have introduced cooked mid-day meals in primary schools. This article reports the findings of a recent survey which suggests that this initiative could have a major impact on child nutrition, school attendance and social equity. However, quality issues need urgent attention if mid-day meal programmes are to realise their full potential. Universal and nutritious mid-day meals would be a significant step towards the realisation of the right to food.

JEAN DRÈZE, APARAJITA GOYAL

In mid-1995, the government of India launched a new 'centrally-sponsored scheme', the National Programme of Nutritional Support to Primary Education. Under this programme, cooked mid-day meals were to be introduced in all government and government-aided primary schools within two years. In the intervening period, state governments were allowed to distribute monthly grain rations (known as 'dry rations') to schoolchildren, instead of cooked meals. Six years later, however, most state governments were yet to make the transition from dry rations to cooked meals.

The Supreme Court gave them a wake-up call on November 28, 2001, in the form of an order directing all state governments to introduce cooked mid-day meals in primary schools within six months.¹ Once again, most state governments missed the deadline, and even today, some states (notably Bihar, Jharkhand and Uttar Pradesh) are yet to comply. Nevertheless, the coverage of mid-day meal programmes has steadily expanded during the last two years, and cooked lunches are rapidly becoming part of the daily school routine across the country (see Map).

Two years after the Supreme Court order, it is worth examining what mid-day meals have achieved and how they can be improved. Tamil Nadu's experience suggests that well-devised school meals have much to contribute to the advancement of elementary education, child nutrition, and social equity. However, these achievements depend a great deal on the quality aspects of mid-day meals. Ramshackle mid-day meal programmes can do more harm than good.

To illustrate, consider the primary school in Bamhu (Bilaspur district, Chhattisgarh). The mid-day meal there is prepared in a soot-covered classroom using a makeshift stove, next to the swarming pupils. The cook struggles with inadequate utensils and takes help from young children for cutting the vegetables and cleaning the rice. According to the teacher, no teaching takes place after lunch as the classroom turns filthy. He wishes mid-day meals would be discontinued.

Bamhu is an extreme example, and it is important to arrive at a balanced assessment of the state of mid-day meals in India today. This was the main purpose of a recent survey initiated by the Centre for Equity Studies (hereafter CES), New Delhi. This article presents a summary of the main findings.

Case for Mid-day Meals

Before examining the findings of the CES survey, it may be useful to recall the diverse personal and social roles of mid-day meals. Briefly, the case for mid-day meals can be made from

at least three crucial perspectives: educational advancement, child nutrition, and social equity.

Each of these objectives, in turn, has different aspects, some more ambitious than others. To illustrate, one basic contribution of mid-day meals to educational advancement is to boost school enrolment. Going beyond that, mid-day meals may be expected to enhance pupil attendance on a daily basis (and not just annual enrolment). School meals may also enhance learning achievements, insofar as 'classroom hunger' undermines the ability of pupils to concentrate and perhaps even affects their learning skills. Finally, a well-organised school meal can have intrinsic educational value, in addition to what it contributes to the routine learning process. For instance, school meals can be used as an opportunity to impart various good habits to children (such as washing one's hands before and after eating), and to educate them about the importance of clean water, good hygiene, a balanced diet, and related matters.

Similarly, the nutritional objective of mid-day meals has several layers, ranging from the elimination of classroom hunger to the healthy growth of school children.² In many respects, a mid-day meal programme is (potentially at least) a nutritionist's dream: the children come every day, on their own, and they eat whatever is given to them. This makes it possible not only to raise their intake of calories and proteins, but also to provide nutritional supplements such as iron and iodine, which need to be ingested in small doses over a period of time. Mid-day meals also provide an excellent opportunity to implement nutrition programmes that require mass intervention, such as deworming.³ Available experience indicates that these interventions are highly effective: for instance, a combination of mass deworming with vitamin A and iron supplementation can significantly enhance children's nutrition for as little as Rs 15 per child per year.⁴

The contribution of mid-day meals to social equity also has a variety of aspects. For instance, mid-day meals help to undermine caste prejudices, by teaching children to sit together and share a common meal. They also foster gender equity, by reducing the gender gap in school participation, providing an important source of female employment in rural areas, and liberating working women from the burden of having to feed children at home during the day. To some extent, mid-day meals also reduce class inequalities. Indeed, in contemporary India, children enrolled in government schools come mainly from disadvantaged families. Thus, mid-day meals can be seen as a form of economic

School Enrolment Goes Up

support to the poorer sections of society. More importantly perhaps, mid-day meals facilitate school participation among underprivileged children. This is likely to reduce future class inequalities, since lack of education is a major source of economic disadvantage and social marginalisation. In short, despite their innocent garb, mid-day meals are a significant challenge to the prevailing inequalities of caste, class and gender.

Much of this paper is devoted to a closer examination of these potential benefits of mid-day meals. We shall also discuss some possible adverse effects, such as the disruption of classroom processes and the risk of food poisoning. The practical achievements of mid-day meals, we shall argue, depend a great deal on adequate attention being paid to quality issues.

Mid-day Meal Routine

The CES survey took place between January and April 2003 and covered three states: Chhattisgarh, Rajasthan and Karnataka.⁵ Within each state, three districts were selected, keeping in view the need for balance between different agro-climatic and socio-economic zones (Table 1). In each of these nine districts, nine villages were selected through random sampling. The field survey involved detailed interviews with teachers, parents, cooks and others in these 81 sample villages, with a focus on qualitative as well as quantitative data. Further details of the survey methodology are given in the Appendix.

The good news is that mid-day meals are in place in each of the three sample states. In 76 of the 81 sample schools, the investigators found that mid-day meals were being served regularly. In the five problem schools, temporary bottlenecks of one sort or another had arisen (Table 2). For instance, in one school of Karnataka, rice delivery was irregular, allegedly due to tensions between local teachers and the civil supplies department. In another school, located in Chhattisgarh, the sarpanch was accused of failing to cooperate with the smooth implementation of the mid-day meal scheme.

Leaving aside these sporadic incidents, mid-day meals seem to follow a well-rehearsed routine in most schools. All the sample schools have a cook, who prepares the mid-day meal after obtaining the grain and other ingredients from the teacher or sarpanch. Infrastructural facilities (cooking shed, water supply, utensils, and so on) vary a great deal between different states and districts, and leave much to be desired in many cases. Yet, the mid-day meal usually materialises at mid-day, and children seem to enjoy the lunch break.

Informal observations suggest that food quantities are adequate for young children. Indeed, second helpings are usually allowed, and a majority of cooks reported that some food tends to be left over after the mid-day meal. In Rajasthan, the menu is the same day after day: 'ghoogri', a gruel made of boiled wheat mixed with 'gur', with oil and peanuts added in some cases. In Chhattisgarh, lunch usually consists of rice with 'dal' or vegetables, with some variation over the week. Karnataka provides the most varied and nutritious menu: aside from rice with 'sambhar', school children there often enjoy other items such as vegetables, 'pongal', lemon rice and even sweets like 'kshira' and 'sajjitha'. Some poor households in Karnataka described the mid-day meal as 'festival food', at least compared to what they eat at home.

Earlier research on primary education in rural India suggests that mid-day meals enhance school participation, especially among girls. One recent study estimates that the provision of a mid-day meal in the local school is associated with a 50 per cent reduction in the proportion of girls who are out of school [Drèze and Kingdon 2001]. Early evaluations of the mid-day meal programmes initiated in response to the Supreme Court order also point in the same direction. For instance, in a survey of 63 schools in Barmer district, Reetika Khera (2002) found that female enrolment at the primary level was 36 per cent higher in September 2002 than in September 2001. Similarly, a recent survey of 26 villages in Sikar district (Rajasthan) found that school enrolment had sharply risen after mid-day meals were introduced, with an average increase of 25 per cent. In some 'alternative schools' located in deprived hamlets, enrolment nearly doubled after the introduction of mid-day meals.⁶

These findings should be considered as preliminary and tentative, based as they are on relatively informal survey methods, but they do add to a rapidly growing body of evidence suggesting that mid-day meals have a major impact on school participation, particularly among girls.⁷ The CES survey, too, suggests that school enrolment in the sample villages shot up after mid-day meals were introduced.

This observation is based on comparing school enrolment in July 2002 with the corresponding figures one year earlier, before mid-day meals were introduced (Table 3). Taking the 81 sample schools together, Class-1 enrolment rose by 14.5 per cent between July 2001 and July 2002, with a particularly impressive jump (19 per cent) for girls. There is a striking break here from the trend increase in school enrolment (about 2 per cent per year in the nineties, for India as a whole), and the bulk of this break is likely to reflect the impact of mid-day meals.

Before we proceed, two qualifications are due. First, the enrolment figures emerging from school registers are known to be unreliable. More precisely, these figures tend to be 'inflated', because teachers face various incentives (if not direct pressures) to exaggerate.⁸ However, this problem does not invalidate the observation that there was a large increase in enrolment between 2001-02 and 2002-03, as long as the 'inflation factor' remains more or less constant over time. The levels of enrolment may well be exaggerated in both years, but the inflation factor per se does not explain why enrolment increased so much in a single year, immediately after mid-day meals were introduced.

Second, we are not claiming that the increase in Class-1 enrolment between 2001-02 and 2002-03 was exclusively due to mid-day meals. Other factors may have played a role, too. In

Table 1: Survey at a Glance

	Chhattisgarh ^a	Rajasthan	Karnataka ^b
Date of survey:	April 2003	February 2003	Feb-March 2003
Sample districts:	Bilaspur, Dhamtari, Raigarh	Banswara, Churu, Tonk	Bellary, Gulbarga, Raichur
No of sample schools:	27	27	27
No of sample households:	95	106	45

Notes: ^a In Chhattisgarh, the survey was confined to non-tribal areas, as our interest was in 'new' mid-day meal programmes (tribal areas in Chhattisgarh have had mid-day meals for several years).

^b In Karnataka, the mid-day meal programme was confined to 7 districts at the time of the survey. The sample districts were selected from that list.

Rajasthan, for instance, the introduction of mid-day meals took place around the same time as the launch of 'Shiksha Aapke Dwar', a new scheme aimed at expanding the reach of primary education. It is, thus, difficult to disentangle the specific effects of the two initiatives. The fact remains, however, that programmes such as Shiksha Aapke Dwar have been introduced at regular intervals in the sample states during the nineties, without ushering anything like the surge in enrolment that appears to have occurred in 2002-03. It would be a surprising coincidence if mid-day meals turned out to have been introduced precisely at a time when other programmes started having unprecedented effects on school enrolment. The precise effects of mid-day meals on school enrolment await further evidence and analysis, but meanwhile, the hypothesis that they did have a major effect on school enrolment in 2002-03 is highly plausible.⁹

Note also that the 'mid-day meal effect', such as it is, reflects the transition from 'dry rations' to cooked lunches, and not the introduction of cooked lunches in a situation where children get nothing in the first place. Indeed, prior to the introduction of cooked mid-day meals, children were getting dry rations, and the incentive effects of these rations are incorporated in the baseline enrolment figures. It is quite remarkable that the simple act of cooking and serving food on the school premises, instead of giving take-home rations to the pupils, should have major positive effects on school participation.

Table 3 also gives statewide enrolment figures. These should be interpreted with caution, given the small sizes of the state-specific samples (27 schools in each case). In the case of Chhattisgarh and Rajasthan, the increase in overall Class-1 enrolment is driven by sharp increases in female enrolment: 17 per cent and 29 per cent, respectively. For boys, the increases are much smaller (5 and 7 per cent), though still well above 'trend'. This gender contrast is in line with earlier research, suggesting that female education is particularly responsive to school incentives.¹⁰ In Karnataka, however, the gender contrast is reversed. This 'anomaly' may reflect the small size of the sample, combined with large margins of error for individual schools.

For Rajasthan, the survey findings can be compared with official data on school enrolment, kindly supplied by the education department (Table 4). The official figures confirm that the introduction of mid-day meals was followed by a big jump in Class-1 female enrolment: 17 per cent in the sample districts, and 18 per cent in Rajasthan as a whole. For boys, official data suggest that there has been little change between 2001-02 and 2002-03.¹¹

There is also much informal evidence that mid-day meals have enhanced daily school attendance (and not just annual enrolment). School records are of little help here, because teachers have a tendency to mark most pupils as 'present' irrespective of the actual attendance. However, qualitative data point firmly in the direction of a significant improvement in daily attendance. Many parents, for instance, reported that mid-day meals had made it much easier for them to send their children to school in the morning. Children need less coaxing and cajoling, as they now look forward to going to school.¹² Most teachers also felt that mid-day meals had raised daily attendance, especially among young children.¹³

Some teachers also pointed out that mid-day meals make it easier to retain pupils after the lunch break. Earlier, children used to go home for lunch and many did not return. Now, they stay on the school premises and classes resume smoothly after the mid-day meal. The fact that mid-day meals enhance school

attendance in the afternoon contrasts with the common argument that mid-day meals 'disrupt' classroom activity and interfere with the teaching process. We shall return to this.

End of Classroom Hunger

Assessing the impact of mid-day meals on child nutrition is beyond the scope of the CES survey. Given the rudimentary nature of the menu, it would be naïve to expect mid-day meals to have a dramatic nutritional impact on their own.¹⁴ However, two nutrition-related achievements do emerge from the survey.

First, mid-day meals facilitate the elimination of classroom hunger. Many Indian children reach school on an empty stomach in the morning, either because they are not hungry at that time or because their parents are too busy to arrange an early morning breakfast.¹⁵ In the absence of a mid-day meal, pupils often become hungry after a few hours and find it hard to concentrate. For instance, one headmaster in Bellary district (Karnataka) reported that before mid-day meals were introduced "the children of agricultural labourers used to lose interest and fall asleep around mid-day, because they were hungry". This problem is now largely resolved.

Second, in the more deprived areas, where some children do not get two square meals a day, the mid-day meal is a protection against hunger in general. This year, for instance, mid-day meals have helped to avert an intensification of child undernutrition in many drought-affected areas. Similarly, poor households such as those headed by widows or landless labourers value the assurance of a free lunch every day for their children. The contribution of mid-day meals to food security and child nutrition seems to be particularly crucial in tribal areas, where hunger is endemic. It is no wonder that, in the CES survey, parental appreciation of mid-day meals was highest among tribal communities. As Phoolji Damore, a tribal parent in Banswara district (Rajasthan), put it: "We have to toil hard for our daily bread, and it is good that our children get at least one meal to eat because sometimes we don't have any food."

Learning to Share

Aside from promoting school attendance and child nutrition, mid-day meals have an important socialisation value. As children learn to sit together and share a common meal, one can expect some erosion of caste prejudices and class inequality.¹⁶

Of course, it is also possible for mid-day meals to be a tool of reinforcement rather than erosion of prevailing social inequalities.

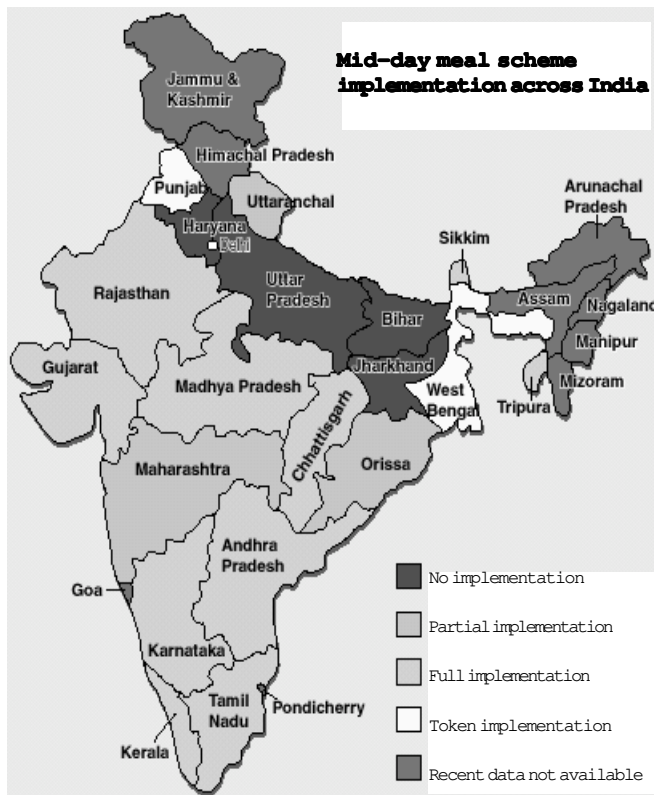
Table 2: Reasons Why Mid-Day Meals Are Irregular in Some Schools

Chhattisgarh (2 schools) : Sarpanch does not cooperate.
Rajasthan (1 school) : No money for firewood.
Karnataka (2 schools) : Rice delivery is irregular.

Note: In all other schools (76 out of 81 sample schools), mid-day meals are being served regularly.

Table 3: Percentage Increase in Class-1 Enrolment between 2001-02 and 2002-03

	Boys	Girls	Total
Chhattisgarh	5	17	11
Rajasthan	7	29	18
Karnataka	28	1	14
Three states combined	10	19	14.5



For instance, during the pilot survey in Rajasthan, we came across one village (Patelon ki Bhagel in Rajsamand district) where dalit children were asked to drink in their cupped hands while other children used common glasses. This is an abominable instance of caste discrimination in the classroom, which defeats the socialisation role of mid-day meals.

How common is caste discrimination in the context of mid-day meals? The CES survey suggests that open discrimination is rare. For instance, we did not find any cases of separate sitting arrangements, or of discriminatory practices such as those observed in Patelon ki Bhagel. Pupils of all social backgrounds seem to be quite happy to sit together and share the same food. Parents, too, claim to welcome the arrangement in most cases. Teachers confirmed that parents rarely objected to their children sharing a meal with children of other castes. And among disadvantaged castes, very few parents felt that their children had ever been victim of caste discrimination in the context of the mid-day meal (Table 5).¹⁷

These responses, however, do not rule out subtle forms of caste prejudice and social discrimination. While open objections to the mid-day meal on caste grounds were rare, upper-caste parents were often sceptical of the scheme and even actively opposed it in a few cases. Some upper-caste parents send their children to school with packed food, or ask them to come home for lunch. Whether this is a manifestation of caste prejudice (as opposed to class privilege) is not always clear, but the caste factor is likely to play a part in many cases.

Further, there does seem to be much upper-caste resistance to the appointment of dalit cooks.¹⁸ In Karnataka, half of the cooks in the sample were dalits, and this arrangement seems to have gained fairly wide social acceptance. In Chhattisgarh and Rajasthan, however, cases of dalit cooks were largely confined

to schools with no upper-caste children. We also noted instances of active parental resistance to the appointment of dalit cooks. For instance, we were told that in village Kolu Pabuji of Jodhpur district, an irate rajput parent had thrown sand in the mid-day meal after finding out that the cook was a meghwal woman.¹⁹

These findings do not detract from the general socialisation value of mid-day meals. In a sense, they even enhance it: if upper-caste parents initially resist mid-day meals, there is much value in overcoming that reluctance. There are strong indications that the caste barriers, such as they are, tend to weaken quite rapidly over time.²⁰

Gender Aspects

Aside from helping to defeat caste prejudices, mid-day meals also contribute to gender equity. For one thing, mid-day meals reduce the gender gap in education, since they boost female school attendance more than male attendance. As mentioned earlier, this is consistent with independent evidence suggesting that female education is particularly responsive to school incentives. As the PROBE report notes (with reference to north India): "Parents are not generally opposed to female education, but they are reluctant to pay for it. School meals could make a big difference here, by reducing the private costs of schooling."²¹

Another way in which mid-day meals contribute to gender equity is by creating employment opportunities for poor women. In the sample schools, a large majority (68 per cent) of the cooks are women, and most of them come from underprivileged backgrounds.²² This is not surprising, since the work is fairly demanding and salaries are low. In addition, the scheme guidelines often state that priority should be given to disadvantaged persons when cooks are appointed. In Karnataka, for instance, there are clear guidelines for the selection of cooks and these are reflected in the survey data: all cooks there are women, half are dalits, and about one fourth are widows.

There is another important way in which mid-day meals contribute to the liberation of working women: when children get a hot meal at school, mothers are free from the burden of having to feed them at home in the middle of the day. This feature is especially relevant for widowed mothers, who often work outside the house without the benefit of any domestic support. As Sudan Mati, a 35-year old tribal woman from village Bankighat (district Bilaspur, Chhattisgarh), explained: "Since our child has started getting food at school, we don't need to worry about him going hungry, and I don't need to come back after half a day's work to prepare his lunch."

Having said this, it should be mentioned that the contribution of mid-day meals to the empowerment of women has been diminished by the unfair if not exploitative conditions under

Table 4: Further Evidence on School Enrolment in Rajasthan

Sample Villages (Survey Data)	Percentage Increase in Class-1 Enrolment between 2001-02 and 2002-03	
	Sample Districts (Official Data)	All Rajasthan (Official Data)
Girls	29	17
Boys	7	-1
Total	18	7.5

Note: The first column is based on survey data for 27 sample villages, located in three districts. The second column is based on official figures for these three sample districts. The third column gives the corresponding figures for Rajasthan as a whole.

which many cooks are employed. Three quarters of the cooks complained that their salaries were overdue and in many cases the delays exceeded three months. In Chhattisgarh and Rajasthan, the cooks' responsibilities are not clearly defined and, in the absence of a 'helper', many of them end up with a heavy work burden involving not only preparation of the meal but also serving the food, fetching water, collecting fuel, cleaning the utensils, and so on. In Rajasthan, even their salaries are not well defined, and they have to be content with whatever can be spared for them from the meagre cash resources allocated to 'conversion costs' (see below). It is only in Karnataka that cooks seem to have relatively fair and well-defined terms of employment, and to be paid regularly.

Two Counter-Arguments

Mid-day meals are not without their critics and detractors. Some of the criticisms are easy to dismiss, such as contrived arguments from high-caste parents whose real concern is that the mid-day meal is a threat to the prevailing social hierarchy.²³ However, there are also serious criticisms to consider.

A common charge is that mid-day meals are a health hazard, because they are not prepared in hygienic conditions. This argument should not be lightly dismissed, but the survey evidence points to a more nuanced assessment of the problem. Pupils do feel unwell from time to time after consuming the mid-day meal: about 10 per cent of the parents said that this had happened to their children at least once during the preceding twelve months. The problem is especially common in Rajasthan, where 'ghoogri' is served day after day. *Ghoogri* needs to be boiled for several hours, and is often hard to digest when it is under-cooked.

On the positive side, 90 per cent of the children never had any problem, and the indispositions experienced by the other 10 per cent were not serious in most cases. The incidents usually occurred in the early days of the mid-day meal programme, when quality safeguards were lacking and the situation appears to have improved over time.²⁴ The lingering cases of occasional indigestion at school carry little weight against the enormous health gains (present and future) that may be expected from better education and reduced hunger in the classroom. The real message here is not that mid-day meals should be discontinued, but that greater attention should be given to the quality aspects of the programme. For Rajasthan, there is also a more specific message: diversifying the menu would be helpful.

Another common argument against mid-day meals is that they disrupt classroom processes. Some media reports even suggest that teachers have been asked to spend their precious time cooking instead of teaching. In fact, cooks have been appointed in all the sample schools and we did not encounter any case where the teachers doubled as chefs. But many teachers did spend a fair amount of time in organising and supervising the mid-day meal. And mid-day meals can certainly disrupt classroom processes when the infrastructure is inadequate. For instance, in schools with no cooking shed, the mid-day meal is often cooked very close to the space where children are meant to be studying. Not surprisingly, teachers in these schools often complain that the sight and smell of hot food has distracting effects on the pupils. Similarly, when the cook does not have a 'helper', pupils are sometimes mobilised to cut vegetables, fetch water or collect firewood.

In one important respect, however, mid-day meals have positive rather than negative effects on classroom processes: they make it easier to reconvene the classes after the lunch break (notwithstanding Bamhu's contrary experience in this respect). When children are sent home for lunch, many of them do not come back, especially if the distance is large. Today, according to a large majority (78 per cent) of the teachers interviewed, afternoon attendance is more or less the same as morning attendance.

In short, the fact that mid-day meals are potentially disruptive in some respects is not an argument for discontinuing them. Rather, it is another pointer to the need for qualitative improvement. If adequate facilities are available, classroom activity can be readily insulated from the cooking process.

Organisational Concerns

In each of the three sample states, there were serious problems relating to the infrastructure and logistics of mid-day meals. The main problems are briefly discussed below.

Kitchen facilities: In a majority of schools, there is no proper kitchen facility (Table 6). Food is often cooked in the open, in a makeshift shed, or in a classroom. Only Karnataka is making serious efforts to build kitchens in all primary schools (31 per cent of the sample schools already have one). Aside from inviting dust and dirt, open-air cooking distracts the attention of the students. Using classrooms for cooking purposes is even more inappropriate. Similar remarks apply to storage facilities.

Table 5: Perceptions of Caste Discrimination

	Yes ^a	No ^a
Headteachers' responses		
"Have any upper-caste parents ever objected to their children sharing a meal with children of other castes?"	3	97
"Have upper-caste children ever expressed unhappiness about sharing a meal with children of other castes?"	1	99
Parents' responses		
"Do you have any objection to children of different castes sharing a common meal at school?"	4	96
"Do you feel that your children have ever experienced any discrimination at school, at the time of the mid-day meal, because of their caste?"	1	99

Note: ^a As a proportion (per cent) of valid responses.

Table 6: Infrastructural Facilities

(Percentage distribution of sample schools)

1 Cooking premises	
Open space	40
Temporary shed	30
Constructed kitchen	17
Cook's house	10
Other	3
Total	100
2 Storage space for grain	
School building	68
Sarpanch's house	16
Storage shed in school premises	6
Cook's house	4
Other	6
Total	100
3 Source of drinking water ^a	
Handpump, tap or tank on school premises	56
Water is brought from outside in matkas or other containers	34
Children go to the nearest source	19
No arrangement at all	1

Note: ^a Figures add up to more than 100 per cent because responses are not mutually exclusive.

Cooking utensils: Shortage of utensils was also a common problem in the sample schools. Some state governments have made a budgetary provision for cooking utensils, but the amounts are small and the funds are often held up. As a result, many schools are constrained to rely on meagre utensils donated by the sarpanch or charitable villagers. Aside from other consequences, inadequate kitchen facilities and utensils tend to sap the motivation of the cooks.

Plates: There is a similar issue with lunch plates. Children are usually expected to bring plates or bowls from home and this arrangement is perhaps difficult to avoid. Some parents, however, are reluctant to let children take plates or bowls away from home, for fear of losing them. It is also worth noting that some poor parents simply don't have a spare container. In Rajasthan, many children were found to be eating on pieces of paper torn from their notebooks if not textbooks.²⁵

Fuel: Arrangements for fuel are another area of concern. In Chhattisgarh and Rajasthan, firewood is the main source of fuel, while Karnataka has more streamlined fuel arrangements involving cooking gas and stoves. In Rajasthan, fuel expenses are included in the standard 'conversion costs' of 50 paise per child per day (more precisely, five rupees per kilogram of grain). Since there is no separate provision for fuel, the cooks have to improvise, and most of them simply collect firewood. Among 27 cooks interviewed in Rajasthan, only 8 were receiving fuel (or a fuel allowance in cash) from the panchayat or teachers. In the primary school of Sunara village in Tonk district, food had not been served for ten days for lack of firewood.

Water: Almost half of the headteachers in the sample schools felt that drinking water arrangements were 'inadequate'. This usually meant that there was no source of drinking water on (or close to) the school premises. In this respect, the situation was somewhat better in Chhattisgarh, where water was being provided under a separate scheme, 'Jan-Nal', run by the health department. Most schools there had a working handpump, and 85 per cent of the headteachers felt that water facilities were adequate.

Helpers: Only a third of the sample schools had appointed helpers to assist the cook. In large schools, especially, the cook often expressed the need for a helper. In Karnataka, most cooks have a helper, and many schools also have an appointed 'organiser', who is in charge of mid-day meal logistics, accounts, inventories, etc. This is a great relief not only for the cook but also for the teachers, who are spared additional duties.

Monitoring and supervision: Mid-day meals are loosely supervised and formal monitoring arrangements are sparse. While official guidelines call for different committees and officers to monitor the scheme periodically, checks are sporadic. Parents and teachers in the sample villages reported that there had been only token visits, if any, by the block education officer or other inspectors. Supervision is somewhat tighter in villages with an active village education committee or (in the case of Karnataka) 'school development and monitoring committee'. In general, lack of supervision opens the door to a range of problems such as petty corruption, logistic delays, and poor hygiene.

Logistic delays: While grain delivery seems to be fairly regular, there were widespread complaints of delayed cash payments. Cooks' salaries are often delayed for months, and many teachers and sarpanchs also complained that they had to advance money from their own pockets when there was no cash to pay for vegetables and related inputs.

Corruption and theft: Instances of petty corruption were reported

in some of the sample villages. One example is the 'leakage' of grain between the FCI godowns and the schools, or the furtive replacement of high-quality grain with low-quality grain by enterprising intermediaries. Another common allegation is that the sarpanch or cook appropriates some of the food meant for school children. Unreliable as they are, these claims are unlikely to be baseless.²⁶ Note, however, that mid-day meals are almost certainly less vulnerable to corruption than 'dry rations'. The latter often fail to materialise for months at a time, something we did not observe anywhere in the case of mid-day meals.²⁷

Regional Contrasts

There are sharp contrasts in the quality of mid-day meals across the country. At one end of the spectrum, Tamil Nadu has served nourishing school meals with clock-like regularity for more than 20 years. At the other end, mid-day meals are still nowhere to be seen in states like Bihar and Uttar Pradesh, despite Supreme Court orders.

These contrasts are not fully reflected in the CES survey, confined as it is to three sample states. Nevertheless, important regional variations emerge. To start with, the quality of school-meal programmes is significantly better in Karnataka than in Chhattisgarh or Rajasthan.²⁸ In fact, Karnataka's distinction is not confined to mid-day meals, and applies to the schooling system generally. For instance, a majority of schools in Karnataka have more than two teachers as well as more than two classrooms, a rare occurrence in Chhattisgarh or Rajasthan (Table 7). The classroom environment also tends to be more stimulating in Karnataka. In line with this positive track record, Karnataka has made comparatively good progress in building a sound infrastructure for mid-day meals: most cooks enjoy the assistance of a 'helper', and a substantial proportion of schools (31 per cent) already have a *pacca* kitchen. In contrast, the mid-day meal infrastructure in Chhattisgarh and Rajasthan is still highly inadequate: most cooks have to manage on their own in the most challenging circumstances, without elementary facilities such as a helper, kitchen or proper utensils. Many other findings suggest that the mid-day meal programme is both more efficient and more equitable in Karnataka than in the other two sample states.

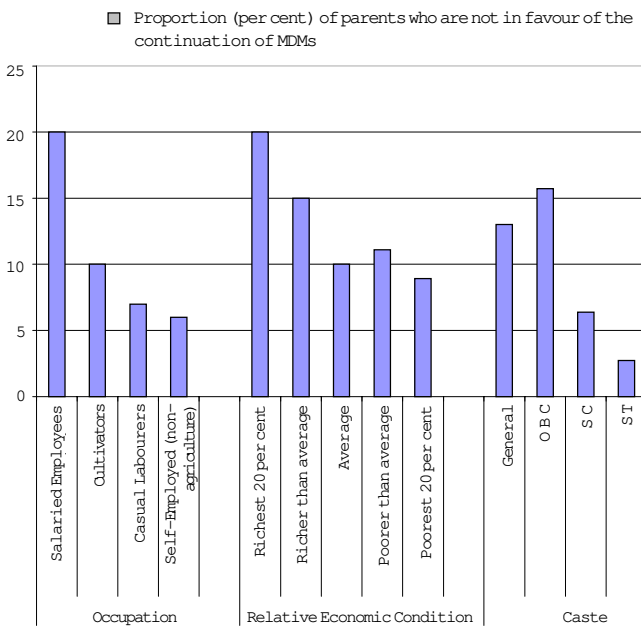
Table 7: Inter-state Contrasts

(Per cent of sample schools with given features)

	Chhattisgarh	Rajasthan	Karnataka
General school infrastructure			
More than two classrooms	41	48	73
More than two classrooms and more than two teachers	18	30	61
Mid-day meal arrangements			
Cook has been appointed	100	100	100
Mid-day meals are served regularly	93	96	93
Menu varies from day to day	30	19	96
At least one "helper" appointed	21	0	85
Pacca kitchen is available	18	7	31
Headteacher's perceptions			
Grain quality is "fair" or "above average"	92	100	85
Grain delivery is regular and timely	93	100	50
MDM has boosted pupil enrolment	70	83	75
MDM has enhanced pupil interest in studies	66	70	72
Some parents have opposed the MDM	19	8	4
Some parents oppose all-caste school meals	0	7	0

MDM = mid-day meal

Chart 1: Parental Views on MDMs in Different Social Groups



Having said this, it is interesting that Rajasthan fares best in terms of food logistics and monitoring. For instance, all schools in Rajasthan reported timely delivery of grain, and teachers invariably described the quality of grain as 'fair' or (more frequently) 'above average'. Similarly, responses from parents and cooks suggest that interruptions in the delivery of mid-day meals are extremely rare. There is a useful lesson here about what can be achieved with adequate political will, even in a state like Rajasthan that is widely (and perhaps unfairly) perceived to belong to the infamous BIMARU set. In Rajasthan, the state government took an early decision to implement the Supreme Court order of November 2001. In fact, it was the first state to do so, among those where no mid-day meal scheme was in place at that time.²⁹ A high-level monitoring committee closely supervised the programme from the beginning, and the progress of mid-day meals was also watched by the 'right to food campaign'. The timely delivery of good-quality grain, even in remote schools, seems to be a reflection of this unambiguous commitment to mid-day meals.

The main problem in Rajasthan is that, in spite of the state government's declared commitment to mid-day meals, money is too short. The government of Rajasthan spends only 50 paise per child per day on recurring costs, compared with more than one rupee per child per day in Karnataka (see next section). As a result, basic facilities are sorely lacking. Lack of money is also the main reason why most schools in Rajasthan continue to serve *ghoogri* day after day, instead of varying the menu. An important opportunity has been missed to enhance children's nutrition by providing a more substantial diet.

Finally, in Chhattisgarh the provision of mid-day meals seems to be somewhat half-hearted, both financially and politically. The picture emerging from qualitative accounts of the field survey is one of deficient arrangements and scant monitoring, and this is corroborated, in many respects, by the survey data. For instance, among 13 cooks who reported that food ran short 'from time to time' (as opposed to 'rarely' or 'never'), 10 worked in Chhattisgarh. Similarly, out of nine schools where there was no

trace of any 'record of inventory', five were located in Chhattisgarh. The state government has not even issued clear guidelines for the management of the programme at the village level. Casual implementation is likely to be one major reason why mid-day meals in Chhattisgarh have failed to catch the imagination of schoolteachers. Nearly half of them felt that mid-day meals 'disrupt classroom processes'. And close to one third of the sample teachers in Chhattisgarh were opposed to the continuation of the scheme, compared with only 10 per cent or so in both Karnataka and Rajasthan.

Except for this significant kernel of opposition, mid-day meals are quite popular in each of the three sample states. Generally, parents and teachers have positive perceptions of the impact of mid-day meals (Table 8). A large majority of teachers, for instance, feel that mid-day meals have boosted pupil enrolment and enhanced children's interest in studies. The feedback from parents is even more positive, especially among underprivileged groups such as 'scheduled castes and scheduled tribes'. Further, there is overwhelming public support for the continuation of the scheme (Table 9).³⁰

Looking more closely at parental views in different social groups, it is only among privileged castes and classes that a significant degree of opposition to mid-day meals can be found (Chart 1). For instance, Jat parents interviewed in Churu district (Rajasthan) had little enthusiasm for mid-day meals. They felt that the food being served at school was not up to their own standards, and that the same resources would be better used in improving the quality of school education. Some of them also had reservations about all-caste meals. By contrast, there was almost unanimous support for the continuation of mid-day meals among poor households, casual labourers, and members of the scheduled castes and tribes. The tremendous popularity of mid-day meals among disadvantaged sections of the population is one of the strongest arguments for consolidating and expanding this initiative.

Comparative Costs

Differences in the quality of mid-day meals across states reflect, in part, corresponding differences in budgetary allocations. We have already noted, in particular, that lack of funds has stringently constrained an otherwise promising mid-day meal scheme in Rajasthan. Against this background, a little more should be said about the costs of mid-day meals. Two types of costs are involved: fixed costs and recurring costs.

Fixed costs are one-time expenses on infrastructure and equipment such as cooking sheds, gas stoves, storage facilities,

Table 8: Perceptions of Teachers and Parents

1. Proportion (per cent) of headteachers who report that: ^a		
MDM has boosted pupil enrolment		76
MDM has enhanced pupil interest in studies		69
MDM disrupts classroom processes		34
MDM has met with some opposition in the village		10
2. Proportion (per cent) of parents who feel that: ^a		
	All parents	SC/ST only
Quality of food is satisfactory	86	88
MDM makes it easier to persuade children go to school	76	88
Children look forward to the MDM	66	75
MDMs should continue	91	96

Note: ^a As a ratio of valid responses. The response rates were high (more than 90 per cent in each case), and care was taken to avoid 'leading questions'.

utensils, etc. These expenses are borne by the state government. In Rajasthan, there is no mention of any expenditure on infrastructure and equipment in the official guidelines, and it seems that this matter is left to local initiative, with dismal results as we saw earlier. In Karnataka, the state government allocates Rs 35,000 per school for all fixed costs. In Chhattisgarh, the government provides Rs 800 per school for the purchase of utensils; drinking water facilities are provided separately, under the health department's Jal-Nal scheme.

Recurring costs, for their part, include the following:

(a) *Cost of grain*: This is borne by the central government, which supplies grain (wheat or rice) in kind, based on the number of pupils enrolled.

(b) *'Conversion costs'*: These include the cost of additional ingredients (vegetables, spices, oil, etc), fuel, and other incidental expenses involved in cooking the meal. Conversion costs are borne by the state government.

(c) *Salaries*: Cooks and helpers usually receive a fixed monthly salary. In Rajasthan, however, the cook's emoluments are merged with conversion costs, under a fixed allowance of Rs 5 per kilogram of grain. Salaries are paid by the state government.

(d) *Health supplements*: Some states, e.g. Karnataka and Tamil Nadu, provide health supplements as part of the mid-day meal programme. These include iron and deworming tablets, vitamin supplements and other basic micronutrients. Karnataka has a budget of Rs 12 per child per year for these health supplements.

(e) *Transport*: The central government makes a fixed contribution (Rs 50 per quintal) to the cost of transporting grain from the local FCI godown to the schools. This is often far from adequate. The remaining transport costs are spread between the state government, panchayats and schools. In some states, transport costs are not fully covered, often compelling the mid-day meal organisers and teachers to make ad hoc arrangements for this purpose.

Table 10 presents a comparative summary of recurring costs in the sample states. Clearly, budgetary allocations vary a great deal between different states, with Karnataka spending more than twice as much as Rajasthan. Karnataka's relatively high unit costs (Rs 1.34 per child per day) reflect both (1) comparatively nutritious meals, and (2) enhanced staff norms. There is a clear hint here that budgetary allocations in Chhattisgarh and Rajasthan need to be raised.

It is also worth noting that even 'revamped' mid-day meals would not be a major burden on public finances. Taking Karnataka's relatively high unit costs as a benchmark, the recurring costs of a national mid-day meal programme covering all children enrolled in government and government-assisted schools would add up to approximately Rs 2,900 crore per year.³¹ This is just a little over 0.1 per cent (one tenth of 1 per cent) of India's GDP, or 10 per cent of the current 'food subsidy'. The price tag seems small, bearing in mind the wide-ranging social benefits of mid-day meal programmes.

Epilogue in Tamil Nadu

The field survey in Chhattisgarh, Karnataka and Rajasthan was supplemented with informal visits to nine primary schools in rural Tamil Nadu. Here again, three districts were covered (Kancheepuram, Nagapattinam and Dharmapuri). The basic patterns were much the same everywhere and they are likely to reflect the general situation in the state.

It was a joy to observe the mid-day meal in Tamil Nadu – a living example of what can be achieved when quality safeguards are in place. Each school had a cooking shed and a paid staff of three: a cook, a helper, and an 'organiser' who looks after logistics and accounts. Most of them were women, and we were impressed with their competence and self-confidence. The organisers claimed that the mid-day meal had been served on time every day since the inception of the scheme in 1982. In Tamil Nadu, mid-day meals are provided every day of the year, including holidays.

The menu also seems more nourishing than in Chhattisgarh, Rajasthan or even Karnataka. There is rice and 'sambhar' every day, but different vegetables are used over the week and there are regular supplements. On festival days, children get special food. The portions are adequate for young children, and everywhere we went, pupils clearly relished the whole affair. No-one recalled any case of food poisoning since mid-day meals started more than 20 years ago.

In Tamil Nadu, mid-day meals seem to enjoy all-round support from the village community. Even teachers, who tend to have various reservations in other states, strongly support the programme. With sound arrangements in place, the mid-day meal does not interfere with their teaching duties, and most of the teachers we met had a deep appreciation of the positive aspects of school lunches. As one of them put it, mid-day meals are conducive to 'improved education'.

Given the time-tested effectiveness of Tamil Nadu's mid-day meal programme, one is entitled to wonder why this experience has not been emulated more widely in other states. In this connection, it is worth noting that the unit costs of mid-day meals in Tamil Nadu are not particularly high. In fact, they are of the same order of magnitude as Karnataka's Rs 1.34 per child per day.³² As mentioned earlier, a national mid-day meal programme based on similar expenditure norms would be quite affordable.

Table 9: Mid-Day Meals are Popular

Proportion of respondents who favour the continuation of mid-day meals (per cent):

	Chhattisgarh	Rajasthan	Karnataka	All
Parents	86	94	93	91
Teachers	70	89	92	84
Cooks	88	93	100	94

Table 10: What Do Mid-Day Meals Cost?

(Estimated recurring costs, Rs/child/day)

	Rajasthan	Chhattisgarh	Karnataka
Conversion costs (cost of ingredients, fuel, etc.)	0.50	0.75	1.00
Cook's salary (and helper's salary, if any)	0.50	0.15	0.30
Health supplements (deworming, iron tablets, etc.)	0.00	0.00	0.04
Total "recurring costs" ^a	0.50 (0.50)	0.90 (0.75)	1.34 (1.00)

Note: These estimates do not include the imputed cost of grain (which is supplied without charge by the central government).

^a In brackets, official figures supplied by the Education Department, New Delhi. These appear to be underestimates, possibly because some of the relevant costs (e.g. cooks' salaries) are "shifted" to other schemes or departments.

Source: Calculated from survey data, and further information from government departments. Estimates of "unit" salary costs assume a school size of 130 pupils and 25 school days per month.

There is much scope for learning from Tamil Nadu's achievements at reasonable cost.³³

Which Way Now?

The experience so far clearly shows that mid-day meals have much to contribute to the well-being and future of Indian children. As things stand, mid-day meal programmes have many flaws, but the way to go is forward and not backward. With adequate resources and quality safeguards, mid-day meals can play a major role in improving school attendance, eliminating classroom hunger and fostering social equity.

Having said this, qualitative improvements are urgently required if mid-day meals are to achieve their full potential. The survey findings suggest a number of priorities for action.

First, financial allocations need to be raised. Shoe-string programmes like those of Chhattisgarh and Rajasthan miss a vital opportunity to promote important social goals at relatively low cost. With the programme in place, additional expenditure is likely to be very effective in enhancing the quality of the mid-day meals.³⁴

Second, the mid-day meal infrastructure calls for urgent improvement. All primary schools need a cooking shed, and most cooks need a helper. Many schools also require better utensils, storage facilities, water supply, and related facilities. Adequate infrastructure is particularly crucial to avoid the disruption of classroom processes, and also to ensure good hygiene.

Third, the monitoring system needs to be overhauled. Close supervision and regular inspections are essential to achieve higher quality standards. Better monitoring would also help to eradicate petty corruption, such as the pilferage of food by various intermediaries.

Fourth, the socialisation value of mid-day meals can be enhanced in various ways. Instances of social discrimination at school have to be firmly dealt with. Clear guidelines for the selection of cooks need to be issued and enforced. And the lunchtime routine can be used to impart various good habits to children, such as washing one's hands before and after eating.

Fifth, the issue of dalit cooks calls for specific attention. In areas with a conservative social outlook, such as rural Rajasthan, the appointment of dalit cooks is potentially explosive. Yet this is also an opportunity to break traditional prejudices and foster social change.

Sixth, there is a case for more varied and nutritious lunch menus. This is particularly so in Rajasthan, where children are tired of the everlasting 'ghoogri'. But the need to enhance the nutritional content of mid-day meals applies to all states, even Tamil Nadu.

Seventh, there is much potential for linking mid-day meals with related inputs such as micronutrient supplementation, health services and nutrition education. As discussed earlier, some of these complementary inputs (e.g., deworming combined with iron supplementation and vitamin A) can make a major difference to children's nutrition at negligible cost. Interventions of this kind have already been successfully initiated in some states, notably Gujarat and Karnataka, but much more can be done in this field. There is also much to learn here from Tamil Nadu, where school children enjoy regular health checkups and free treatment of illnesses such as anemia, worms or scabies.

Last but not least, the 'laggard' states need to be persuaded to initiate mid-day meals. This applies especially to Bihar,

Jharkhand, and Uttar Pradesh, where school attendance and nutrition levels are extremely low. The laggard states claim that their coffers are bare, but the experience elsewhere indicates that mustering the required financial resources is really a matter of political priorities. Indeed, it is hard to think of a better use of public funds at this time than the provision of nutritious mid-day meals in primary schools.

Universal and nutritious mid-day meals would be a significant step towards the realisation of the right to food. This is an important terrain of future engagement not just for the state, but also for social movements and indeed the public at large. The challenge is particularly relevant to anyone concerned with social equity.

Appendix

The Survey

The CES survey took place in three states: Chhattisgarh, Rajasthan and Karnataka. These were states where mid-day meal schemes had been introduced in 2002, in response to the Supreme Court order of November 28, 2001. In Chhattisgarh, mid-day meals had already been provided in tribal blocks for several years. The survey was confined to non-tribal blocks, since the purpose was to examine 'new' mid-day meal schemes. In Karnataka, the mid-day meal scheme was confined to seven northern districts at the time of the survey. The sample districts were selected from that list. In each state, three sample districts were selected informally, bearing in mind the need for a rough balance between different socio-economic and agro-climatic zones (in some cases, allowance was also made for opportunities of collaboration with local NGOs). Within each district, three blocks were selected in a similar manner.

Within each sample block, a list of villages with population between 500 and 1,500 was drawn based on census data. Within that list, three villages were selected at random, with sampling probability proportional to size. Thus, the survey covered 81 villages spread over 27 blocks, nine districts and three states.

The mid-day meal survey took place between January and April 2003. In each village, the survey began with an unannounced visit to the local primary school, followed by visits to the sample households. The survey teams were expected to interview: (1) the headteacher of the primary school; (2) an active member of the village education committee (VEC); (3) the person in charge of cooking the mid-day meal; and (4) a sample of four households. To select the households, the investigators were asked to go down the school register and select the first girl in the 'SC/ST' category, the first SC/ST boy, the first girl in the 'non-SC/ST' category, and the first boy in that category. This was to be done using the Class-1 register in the first village of each block, the Class-3 register in the second village, and the Class-5 register in the third village. In cases where a village had more than one primary school (or, more precisely, more than one schooling facility with primary classes), the sample school was to be chosen at random among the relevant schools. As it turned out, however, most of the sample villages had a single primary school.³⁵

In Karnataka, the survey was implemented with local NGOs in a 'participatory' mode, and this led to occasional departures from the formal guidelines. For instance, the selection of villages within each block was based on 'stratified' random sampling, with different stratification criteria in different blocks (e.g., education

level for one block, proportion of SCs in the population for another block). Similarly, the Karnataka teams decided to survey two households per village, instead of four. These minor departures from the formal guidelines are unlikely to have caused any major bias in the survey findings.

In addition to these village-level enquiries, the survey teams interviewed government officials at the block, district and state levels. The aim of these additional interviews was to achieve an understanding of the administrative and logistic aspects of mid-day meal schemes, and also to probe official perceptions of the achievements and failures of mid-day meals. [27]

Address for correspondence:
j_dreze@hotmail.com

Notes

[This paper summarises the findings of a field survey initiated by the Centre for Equity Studies, New Delhi. Sangita Ghosh, Reetika Khera, Neha, Bhanupriya Rao, A K Shiva Kumar and Veda Zacharia were closely associated with the study and we thank them for their valuable contribution. We are grateful to students of the Tata Institute of Social Sciences and activists of Mazdoor Kisan Shakti Sangathan for helping to conduct the pilot survey in Rajsamand district, Rajasthan. This study has also benefited from useful comments and suggestions from Farzana Afridi, Shabana Azmi, Anil Bordia, Sumit Bose, Swati Dhingra, Tara Gopaldas, Sharda Jain, Sunil Kumar, Preeti Oza, M D Pai, Biraj Patnaik, Janaki Rajan, A K Rajivan, Vimala Ramachandran, Manas Ranjan, Saraswathi Rao, Tejmeet Rekhi, Vivek S, Amar Saran, Amartya Sen, Bishnupada Sethi, Monika Sharma, Kavita Srivastava, Komal Srivastava, R C Tripathi and A R Vasavi, among others.]

- 1 This order came up in the context of a public interest litigation on the right to food, initiated by a writ petition submitted to the Supreme Court by the People's Union for Civil Liberties, Rajasthan. The text of the order is as follows: 'We direct the state governments/ union territories to implement the mid-day meal scheme by providing every child in every government and government-assisted primary school with a prepared mid-day meal with a minimum content of 300 calories and 8-12 grams of protein each day of school for a minimum of 200 days. Those governments providing dry rations instead of cooked meals must, within three months, start providing cooked meals in all government and government-assisted schools in half the districts of the state (in order of poverty), and must within a further period of three months extend the provision of cooked meals to the remaining parts of the state.'
- 2 On the nutritional impact (actual and potential) of mid-day meal programmes in India, see Rajivan (1991, 2001, 2003), Brahman (2003), Chandrasekhar (2003), Gopaldas (2003), Mathew (2003), among others; also Nutrition Foundation of India (2003a) and the literature cited there.
- 3 Worms undermine children's nutrition by ingesting vital micronutrients, and also by causing diarrhoea. Deworming individual children is of little help, since worm conditions are highly infectious. Mass deworming is essential [Gopaldas 2003].
- 4 On this, see particularly Gopaldas (2003), Gopaldas and Gujral (1994, 1996), and earlier studies cited there as well as in Nutrition Foundation of India (2003a, 2003b).
- 5 In Karnataka, the survey was restricted to the northern region, as mid-day meals were yet to be introduced in other parts of the state at that time. Throughout this paper, 'Karnataka' should actually be read as 'north Karnataka'.
- 6 Drèze and Vivek (2002), based on a presentation made by a Sikar-based NGO at a meeting of Akal Sangharsh Samiti, Rajasthan, September 2002.
- 7 For further evidence, see also Sethi (2003). This study focuses on Rayagada district (Orissa), where cooked mid-day meals have been provided since 1995. The author finds evidence not only of an increase in Class-1 enrolment, but also of improved 'retention' throughout the primary cycle.
- 8 On this issue, see, e.g. PROBE Team (1999), pp 91-93.
- 9 Media reports published soon after the beginning of the 2002-03 school year (July 2002) suggest that mid-day meals were the main driving force behind the surge in school enrolment in rural Rajasthan. According to

Soni Sinha (2002), for instance: "While the administration claims the increase [in enrolment] is because of its push for primary education, villagers say the main attraction is the free mid-day meals the children get in government-run schools." School meals were particularly attractive at that time because of the severe drought conditions prevailing in Rajasthan.

- 10 See, e.g. PROBE Team (1999), Drèze and Kingdon (2001), and earlier studies cited there.
- 11 According to a personal communication from Sunil Kumar, secretary to the chief minister in Chhattisgarh, Class-1 enrolment in Chhattisgarh rose by 19 per cent for girls and 9 per cent for boys between 2001-02 and 2002-03. This is highly consistent with our survey findings (Table 3).
- 12 A few parents also observed that young children not enrolled in school often joined their siblings for the mid-day meal, and that this was a useful form of initiation to the schooling process.
- 13 For similar findings, see also Ramachandran (2003).
- 14 In an experiment aimed at simulating 'the general run of school meal programmes in the country', Agarwal et al (1987) found that such programmes 'did not result in any measurable improvement in physical growth, stamina or mental functions' (p 78). However, as discussed earlier, there is evidence that nutritious mid-day meals combined with micronutrient supplementation do have a major impact on child nutrition.
- 15 The full extent of this phenomenon is yet to be rigorously investigated, but it does seem to be very common, judging from recent studies of 'classroom hunger' in underprivileged neighbourhoods of Delhi (Janaki Rajan, State Council of Educational Research and Training, Delhi, personal communication) as well as in deprived areas of rural India [Ramachandran 2003]. According to one recent survey, 40 to 50 per cent of children attending MCD schools in Delhi go to school on an empty stomach in the morning (Tejmeet Rekhi, Institute of Home Economics, Delhi University, personal communication). Similarly, in a recent inspection of primary schools in deprived villages of Punjab, the investigator found that classroom hunger was driving some school children to eat chalk and even ink tablets (Monika Sharma, Lal Bahadur Shastri National Academy of Administration, Mussoorie, personal communication).
- 16 Psychological studies suggest that caste consciousness among Indian children tends to develop around the beginning of the primary-school age group. Efforts to impart egalitarian values at that particular age are therefore likely to be rewarding. For further discussion, see Singh (1988), and the literature cited there.
- 17 Similar responses were also obtained from members of the 'village education committee' (VEC), in villages with active VECs.
- 18 In this paper, the term 'dalit' refers to members of the scheduled castes or scheduled tribes.
- 19 Even in Karnataka, there are significant pockets of upper-caste resistance to the appointment of dalit cooks. This came to light in the context of the recent extension (in July 2003) of mid-day meals to the southern part of the state, which is said to be more conservative in this respect than the northern region. In village Chikkaturvekere of Tumkur district, some children apparently had to go through purifying rituals after eating food prepared by a dalit cook at school. Opposition to dalit cooks was also reported in a number of other villages, and even led to children being withdrawn from school in some cases [see e.g. Menon 2003 and S Rao 2003].
- 20 The preceding comments apply not only to caste but also to religion. At a time of growing communal tendencies around the country, there is much value in teaching pupils to share a meal with children of other religious communities.
- 21 PROBE Team (1999), p 97.
- 22 In Rajasthan, more than 50,000 needy women are employed under the mid-day meal programme [Bhardwaj 2003:1]. This is not a small contribution to women's earning opportunities, in a society where an overwhelming majority of women have little access to gainful employment.
- 23 Judging from recent experience, most mid-day meal programmes go through an initial phase of vocal criticism from various quarters, including opposition parties, sceptical teachers, and a section of the media. Even Tamil Nadu's mid-day meal programme, widely appreciated today, 'was initially scorned and attacked' [Pratap 2003].
- 24 It is also worth noting that upset stomachs are not a new thing in rural India. Had the same parents been asked whether their child had ever developed a stomach ache after the evening meal during the preceding 12 months, it is far from clear that the percentage of affirmative answers would have been less than 10 per cent (the proportion applying to mid-day meals). Stomach aches after the school meal are perhaps relatively

- conspicuous because they tend to happen to many children at the same time, but they are not necessarily more common than stomach aches at home.
- 25 Tamil Nadu is apparently making arrangements to provide one stainless plate and one tumbler to each school child each year [Dhananjayan and Chandran 2003:8].
 - 26 In Jaipur, organisations such as Bharat Gyan Vigyan Samiti (BGVS) have been monitoring the delivery of grain in primary schools located in slum areas. Weighing scales were provided to these schools, to enable them to check the weight of grain sacks being delivered. In many cases, the sacks were found to weigh 45 kgs or so instead of the stipulated 50 kgs (Komal Srivastava, BGVS, personal communication).
 - 27 There is plenty of evidence of large-scale corruption in the distribution of dry rations. See e.g. PROBE Team (1999), pp 96-97, Mahendra Dev (2003), pp 40-41 and Rana and Das (2003), p 14.
 - 28 On Karnataka's positive achievements in this field, see also Vimala Ramachandran (2003).
 - 29 The government of Rajasthan also deserves some credit for introducing cooked mid-day meals in 'second-track' schools (such as 'shiksha karmi' schools and Rajiv Gandhi Pathshalas) at the same time as in formal primary schools, soon after the Supreme Court order.
 - 30 For similar observations, see Ramachandran et al (2003). As the authors note (pp 12 and 17): '...the community and teachers were all praise for the mid-day meal programme in Karnataka and the mid-day meal programme in Andhra Pradesh that commenced on January 1, 2003... No wonder the Supreme Court's judgment on serving cooked meals in school instead of distributing dry rations was welcomed by parents and children.'
 - 31 Assuming 200 school days in a year and 108 million children enrolled (official figure supplied by the Education Department, New Delhi). This estimate does not include the imputed cost of grain. At market prices, the latter would add about 80 paise per child per day to the recurring costs. However, market prices probably exaggerate the real 'opportunity cost' of foodgrain stored by the Food Corporation of India.
 - 32 Official data supplied by the Education Department (New Delhi) put recurring costs in Tamil Nadu at 45 paise per child per day, but this is almost certainly an underestimate (see also Table 10). Data collected from our nine sample schools in Kancheepuram, Nagapattinam and Dharmapuri suggest that recurring costs in Tamil Nadu are roughly the same as in Karnataka, and probably a little lower.
 - 33 Another relatively successful experience, well worth emulating (particularly in terms of the combination of mid-day meals with micronutrient supplementation and deworming), is that of Gujarat; see e.g. Gopaldas (2003) and Ravi (2003).
 - 34 Financial assistance from the central government would be of great help in this respect. On August 15, 2003, the prime minister announced that mid-day meals would be extended to Class 10 as a national programme. Bearing in mind the fate of many earlier announcements made on August 15, it would be naive to expect this announcement to be implemented in a hurry. But at least it provides a basis for insisting on central assistance to mid-day meal programmes. It is also possible to invoke the recommendation of the 'Abhijit Sen Committee report', calling for the central government to bear half of the cash costs of mid-day meal programmes initiated by state governments [Government of India 2002:6 and 24].
 - 35 In Chhattisgarh and Karnataka, all but one or two of the sample schools were ordinary, government primary schools. In Rajasthan, nine of the sample schools were government primary schools, seven were 'Rajiv Gandhi pathshalas', seven were 'shiksha karmi schools' and four were schools of 'other' types.

References

- Agarwal, D K, S K Upadhyay, A M Tripathi and K N Agarwal (1987): 'Nutritional Status, Physical Work Capacity and Mental Function in School Children', Scientific Report 6, Nutrition Foundation of India, New Delhi.
- Bhardwaj, R K (2003), 'Mid-Day Meals in Rajasthan', paper presented at a workshop on Mid-Day Meal Programmes in Schools in India convened by the Nutrition Foundation of India, New Delhi, August 1.
- Brahmam, G N V (2003): 'Evaluation of Mid-Day Meal Programme in the States of Andhra Pradesh, Karnataka, Orissa, Tamil Nadu, Kerala and Gujarat', paper presented at a workshop on Mid-day Meal Programmes in Schools in India convened by the Nutrition Foundation of India, New Delhi, August 1.
- Chandrasekhar, Usha (2003): 'Nutritious Meal Programmes of Tamil Nadu: Our Experiences', paper presented at a workshop on Mid-Day Meal Programmes in Schools in India convened by the Nutrition Foundation of India, New Delhi, August 1.
- Dhananjayan, N and Chandran (2003): 'Origin and Growth of the Nutritious Noon Meal Programme in Tamil Nadu', paper presented at a workshop on Mid-Day Meal Programmes in Schools in India convened by the Nutrition Foundation of India, New Delhi, August 1.
- Drèze, Jean, and Geeta Gandhi Kingdon (2001): 'School Participation in Rural India', *Review of Development Economics*, 5.
- Drèze, Jean, and S Vivek (2002): 'Hunger in the Classroom', *Food and Nutrition World*, sample issue; also published in abridged form in *Hindustan Times*, October.
- Gopaldas, Tara (2003): 'Gujarat's Improved Midday Meal Helps Children Learn', *Nutriview*, 2003/2.
- Gopaldas, T, and S Gujral (1994): *Educability before Education: A Nutrition-Health Education and Sensitisation Handbook*, Tara Consultancy Services, Baroda.
- (1996): 'The Pre-Post Impact Evaluation of the Improved Mid-Day Meal Programme, Gujarat', mimeo, Tara Consultancy Services, Baroda.
- Government of India (2002): *Report of the High Level Committee on Long-Term Grain Policy*, Department of Food and Public Distribution, New Delhi.
- Government of Rajasthan (2003): 'Mid-Day Meals in Rajasthan', mimeo, Panchayati Raj Department, Jaipur.
- Khera, Reetika (2002) 'Mid-Day Meals in Rajasthan', *The Hindu*, November 13.
- Mahendra Dev, S (2003): 'Right to Food in India', Working Paper 50, Centre for Economic and Social Studies, Hyderabad.
- Mathew, Minnie (2003): 'Food for Education', paper presented at a workshop on Mid-Day Meal Programmes in Schools in India convened by the Nutrition Foundation of India, New Delhi, August 1.
- Menon, Parvathi (2003): 'Untouchable Lunch?', *Frontline*, August 1.
- Nutrition Foundation of India (2003a): 'Mid-Day Meal Programmes in Schools in India: The Way Forward', background papers circulated at a workshop on Mid-Day Meal Programmes in Schools in India held at the India International Centre, New Delhi, August 1.
- (2003b): 'A Report of the Workshop on 'Mid-Day Meal Programmes in Schools in India'', mimeo, Nutrition Foundation of India, New Delhi.
- Pratap, Anita (2003): 'Strike Against Hunger', *Outlook*, August 18.
- PROBE Team (1999): *Public Report on Basic Education*, Oxford University Press, Oxford.
- Rajivan, Anuradha K (1991): 'Weight Variations among Preschoolers: An Analysis of Evidence from Rural Tamil Nadu', PhD thesis, University of Southern California.
- (2001): 'Nutrition Security in Tamil Nadu' in Mahendra Dev et al (eds), *Social and Economic Security in India*, Institute for Human Development, New Delhi.
- (2003): 'Combating Malnutrition: Impact Issues in Tamil Nadu', mimeo, New Delhi.
- Ramachandran, Vimala (2003): 'Snakes and Ladders: Factors that Facilitate or Impede Successful Primary School Completion', mimeo, Educational Resource Unit, New Delhi.
- Ramachandran, V, K Jandhyala and A Saihjee (2003): 'Through the Life Cycle of Children', mimeo, New Delhi; forthcoming in *Economic and Political Weekly*.
- Rana, K and S Das (2003): 'The State of Primary Education in Jharkhand', mimeo, Pratichi Trust, Santiniketan.
- Rao, Bhanupriya (2003): 'Notes from the Mid-Day Meal Survey in Kumbhalgarh', mimeo, Centre for Equity Studies, New Delhi.
- Rao, Saraswathi (2003): 'Mid-Day Meals Implementation in Karnataka: Details Gathered from Press Reports', mimeo, ActionAid India, Bangalore.
- Ravi, J (2003): 'Mid-Day Meal Scheme in Gujarat', paper presented at a workshop on Mid-Day Meal Programmes in Schools in India convened by the Nutrition Foundation of India, New Delhi, August 1.
- Sethi, Bishnupada (2003): 'Mid-Day Meal Programme and its Impact in Improving Enrolment in Rayagada District', mimeo, Lal Bahadur Shastri National Academy of Administration, Mussoorie.
- Singh, Amar Kumar (1988): 'Intergroup Relations and Social Tensions' in Janak Pandey (ed), *Psychology in India: The State-of-the Art. Volume 2: Basic and Applied Social Psychology*, Sage, New Delhi.
- Sinha, Soni (2002): 'Schools Fill Up as Drought Grips Rajasthan', *Indo-Asian News Service*, August 2.