

Scaling up Primary Education Services in Rural Tamil Nadu: Public Investment Requirements and Reform

Nirupam Bajpai, Ravindra H. Dholakia and Jeffrey D. Sachs

Abstract

We attempt to address two key questions in this paper: 1) In terms of state-wide scaling up of rural services in the area of primary education, what will it cost financially and in terms of human resources to scale-up these services in all the rural areas of the state? And 2) what policy, institutional and governance reforms may be necessary so as to ensure proper service delivery? As is well known, merely constructing more schools, for instance, is not going to be enough; higher public investments in these areas needs to be accompanied by systemic reforms that will help overhaul the present service delivery system, including issues of control and oversight, for example.

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Nirupam Bajpai presented this paper to Dr. Manmohan Singh, Prime Minister of India, Montek Singh Ahluwalia, Deputy Chairman, Planning Commission of India, K S Sripathi, Chief Secretary, Government of Tamil Nadu, V K Subburaj, M Kutralingam, Principal Secretary, School Education, R. Palaniswamy, District Collector, Villupuram, and M Rajendran, District Collector, Tiruvannamalai.

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Key Recommendations

On an All-India level, there are roughly 200 million children in the 6-14 age group, of which only 120 million are in schools and net attendance in the primary level is estimated to be merely 66 percent of enrolment. However, Tamil Nadu has India's highest student enrolment rate in primary (up to Grade V) and upper primary level (up to Grade VIII) education.

The drop-out rate in primary and upper primary schools in Tamil Nadu was also among the lowest in India. The drop out rate in primary schools fell from 4 percent in 2006-07 to 1.2 percent. Tamil Nadu recorded close to 100 percent Gross Enrolment Ratio (GER) at primary and upper primary levels. Rural areas of Tamil Nadu do not have any severe shortfall in terms of physical facilities and access of population to primary education is pretty good. The problem, however, is more in terms of improving the quality of services being provided in public schools. In general terms, while it seems that DPEP and SSA have been quite successful in enlarging the coverage of primary schools, however, it is the quality of teaching and learning in the rural public schools in the state that is in need of the most attention.

The additional requirement of financial resources is Rs. 4.5 billion in Tamil Nadu to scale up the rural services in primary education. On a per capita basis, this works out to Rs.67. While rural Tamil Nadu has already the physical infrastructure in place, it requires some additional effort to maintain and improve the existing infrastructure. Tamil Nadu is placed far better than the northern states like UP, MP and Rajasthan in terms of physical infrastructure or even the southern states, such as Karnataka and Andhra Pradesh. This is not surprising because the state has been spending considerably higher amounts per capita than most states for the past several years. In 2007-08 budget, Tamil Nadu allocated Rs.84.3 billion or Rs.1,260 per capita. The additional effort required as per our estimate is, therefore, only 5.3% over two years. It is definitely not a very tough target for the state to achieve.

Tamil Nadu needs to pay greater attention to two key aspects: one, to get all the children from the poor families and special focus groups, such as girls and children from the SC and ST communities that are out of school into school and two, to strive much harder to attain and sustain higher levels of quality in their primary schools. While the former may require measures, such as higher levels of financial incentives for poor parents to send their children to school, improved quality and quantity of the mid-day meals being provided, and wide-ranging awareness programs, the latter may require drastic changes in the learning methods and techniques, making classroom activities more experimental and enjoyable for the children, improved teacher training, and of course upgrading the school infrastructure.

We recommend the following areas for much greater attention: school infrastructure, including more classrooms, a kitchen room, separate toilets for girls' in all the schools and a boundary wall for every school, curriculum and instructional resources, stricter control over and improved oversight of teachers' improved and rigorous teachers' training, and improved quality and quantity of mid-day meals.

There is a technical hitch in budget making at the state level. It is widely known that most of the revenue expenditure on education consists of teachers' salaries. However, this is considered a non-plan expenditure item in the state budget. In the overall environment of severe resource

crunch and constant pressure under Fiscal Responsibility and Budget Management (FRBM) concerns even at the state level, the non-plan expenditures are always the easy targets for the cuts. That is how, sanctioned posts of teachers in primary and secondary schools are allowed to remain unfilled for years leading to the serious scarcity of teachers in the public schools. Currently, these vacancies are filled on ad hoc temporary basis by para-teachers who are paid almost one-fourth or less of the salary of a regular teacher.

Another powerful solution to the problem of resources is to encourage private participation in building and running schools. As the draft Approach Paper of XI Plan (2006) suggests, the weaker sections of the society can be given coupons and thereby a choice of choosing the school for their kids. This can take off a lot of financial burden from the government. We have seen that in the private sector schools, the number of teachers per school, classrooms per school, students per teacher, and students per classrooms are far better than the public schools. The government needs to take a policy stance to positively encourage private schools to expand their scale and area of operation by providing appropriate incentives, establish inspection norms, admission criteria and procedures, etc. The idea is for the government not to withdraw, but provide competent and qualitative benchmarks for the private schools through their illustrative presence in different areas. The expansion of employment of teachers and helpers can largely take place in the private sector if proper policies are followed to allow some of the public primary schools to be taken over by the private management.

To improve the quality of regular teachers, annual grant for 20 days training is recommended. For para-teachers, annually 30 days of training is suggested.

There is an urgent need to streamline the administration for providing caste certificates to all SC/ST and OBC families. If the government thinks that these families need concessions and subsidies/incentives, they must first be properly identified and certified so that they do not have to incur disproportionate resources to obtain such certification. Otherwise, the scheme becomes wasteful, discriminating and unjust for the real target group.

For public schools, the teachers must stay in the respective village itself and not in a radius of a 5 or 10 kms. This is because once a distance of 5 or 10 kms is allowed, it becomes almost impossible to monitor whether it is 5 kms, or 50 kms, in practice.

Every primary public school should maintain a small garden/compound and should have a helper to take care of cleaning, cooking, gardening, etc.

Notebooks and pencil/pen should also be provided free to children besides textbooks. These subsidies may be targeted to SC/ST/OBC/BPL family children only and not be made available indiscriminately.

Private schools need to be properly supervised and inspected regularly for the quality of their education services and physical infrastructure.

Grants for repairs/maintenance and facilities to schools should be determined by the size of the school and needs of the schools.

Government administration needs to be sensitive to teachers' conditions and be efficient in disbursing salaries to them when transferred.

State governments can think of collecting small fees from the non-target group population to provide better facilities like library, play ground with toys and sports equipments, small laboratory equipments for conducting experiments prescribed in their environment textbooks, etc.

In terms of furniture, the schools need to be better equipped. They should have one steel cupboard per classroom, a table and a chair per classroom, and a table and three chairs for the office room. Currently none of these are available. Moreover, students in rural areas may not sit on benches in the government schools, but can certainly sit on carpets. Similarly, separate toilets for boys and girls should be constructed on an urgent basis in every school.

Para-teachers should be given rigorous training for 30 days in a year and should be paid the same allowance (Rs.70 / day) as the regular teachers. Moreover, they should also be given the teaching contingency on par with regular teachers (Rs.500 p.a.) on completion of one academic year.

Labor laws need to be reformed. The total number of leaves in a year that a regular teacher is entitled to is far in excess of what can be tolerated in an essential service like primary education. Moreover, the practice of having half-a-day casual leave also doubles the number of casual leaves effectively. This contributes to teachers' absenteeism, insincerity and irregularity ultimately discouraging students and harming the cause of education. Such laws need immediate revision.

With regard to the Panchayati Raj Institutions, (PRIs) and their ability to deliver, the following questions need to be looked into: Has the power and authority that has been devolved to the PRIs on paper actually reached the people? Do they understand their duties/responsibilities on the one hand and their authority on the other? Do the PRIs have the capacity to manage schools? Are there regular (on an on-going basis) and comprehensive capacity building programs in place? And are any measures being undertaken to ensure that the caste and patriarchy do not prejudice effective management at the local level?

We suggest an education sector strategy for India that is based on the objectives of the Sarva Siksha Abhiyan (SSA) not only at the national level, but also more importantly at the state and district levels. States and districts should strive hard to attain the goals laid out in the SSA, especially for the laggard states and districts, with particular focus on the 150 most backward districts of the country. Based on SSA's national goals, state governments should announce targets for education to be met at the state and district levels by the year 2010.

We suggest that the central government should plan to convene a meeting of Chief Ministers and Education Ministers of all Indian States in 2009 to discuss how the states will meet the education targets of SSA. This meeting will allow states to present their most successful initiatives, so that all states can adopt "best practices" in public education.

Scaling up Primary Education Services in Rural Tamil Nadu: Public Investment Requirements and Reform¹

Nirupam Bajpai, Ravindra H. Dholakia and Jeffrey D. Sachs²

This report is based on the work undertaken during Year IV of a four-year project on scaling up primary education services in rural India. The report focuses on Tamil Nadu. Villupuram district was taken up for an in-depth study. Furthermore, detailed questionnaires were administered in five villages in the district that were distinct from each other and representative of the different conditions so that these could be reasonably extrapolated to the district.

We attempt to address two key questions in this report:

- 1) In terms of state-wide scaling up of rural services in the area of primary education, what will it cost financially and in terms of human resources to scale-up these services in all the rural areas of these two states? And
- 2) What policy, institutional and governance reforms may be necessary so as to ensure proper service delivery? As is well known, merely setting up more primary schools, for instance, is not going to be enough; higher public investments in these areas needs to be accompanied by systemic reforms that will help overhaul the present service delivery system, including issues of control and oversight, for example.

¹ This report is based on the work undertaken for a project entitled 'Scaling up Services in Rural India' that is housed at the Center on Globalization and Sustainable Development (CGSD) of the Earth Institute at Columbia University. CGSD is grateful to The William and Flora Hewlett Foundation for providing financial support to this project and especially thanks Smita Singh, Program Director, Global Development, and Karen Lindblom, Program Officer for discussions and their keen interest in this project.

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The authors are grateful to L K Tripathi, Chief Secretary, Government of Tamil Nadu and District Collectors – Brajendra Navnit of Villupuram district and Satyabrata Sahoo of Tiruvannamalai district for useful discussions. The authors are also grateful to Puja Thakker, Public Health Foundation of India (PHFI) for field work and research assistance. We are also thankful to Shreekant Iyengar and D.T.Chakravarthy, for providing valuable support in field survey of households and health facilities by supervising the operation, collation of data, tabulation and preparing notes based on discussions and observations. Rajul Patel also helped in the data entry work.

I. Introduction

The draft Approach Paper of the 11th Five Year Plan (2006a) in India states, “A central part of the vision of the 11th Plan must be to extend access to essential public services such as health, education, clean drinking water, sanitation, etc., which are currently denied to large parts of our population especially in rural areas. The provision of good quality of education is the most important equaliser in society and it is time we launched a major effort in this area” (p.75). It considers the essential public services of health and education as critical inputs determining the growth potential of the economy in the long term. The Approach Paper to the 11th Plan (2006b) clearly asserts that “Governments at different levels must ensure provision of these services” (p.2). However, the draft Approach Paper (2006a) also recognises on p.46 a need to enable people with appropriate entitlements to choose between public and private schools by promoting some competition to increase efficiency and effectiveness of the services. The Planning Commission, thus, considers the problem of scaling up of primary education services in the rural areas as not only of critical importance in the long term growth strategy, but also has an open mind about the modality of its provision. It has shown awareness about several problems associated with the service delivery in this sector (see p.4 and pp. 45-47), and has explicitly recognised that in this sector, the major problem is of quality rather than of quantity *per se*. Only then, the proposed shift of emphasis from outlays to outcome would be meaningful.

Primary education cannot be considered a public good because it does not meet the theoretical criteria of non-rivalry in consumption, non-excludability and externality. However, in most of the developing societies it is considered as a merit good because its universal consumption has a high intrinsic value determining the physical quality of life in the society. The Planning Commission in India (2006a), moreover, considers it as an important equaliser and a determinant of future growth. The vulnerable section in this context is generally/traditionally defined in terms of criteria of social backwardness and, therefore, constitutionally recognised scheduled caste (SC) and scheduled tribe (ST) population is specifically focused for all such programs. However, closer examination of literacy and enrolment rates among these classes does not support the hypothesis of lower access of the vulnerable section as per social criteria (the SC and ST population) to the primary education services.

Table 1 gives us the overall enrolment ratios and percentage enrolment of the SC and ST children along with the estimated Gross Enrolment Rate (GER) for the SC and ST population in the primary education for each of the states and union territories of India. The GER for SC and ST categories had to be estimated based on the percentage of their enrolment in the total and their share in the relevant age-groups in the population. We find from the table that the estimated GER for SC and ST population in the country is considerably greater than the one for total population in almost all major states. Therefore, the Planning Commission’s assumption and hence the argument about lack of access to primary education services for the vulnerable section can be valid only if the vulnerable section in the society is defined in terms of the economic criteria, i.e. the economically poorer section. It is this section which particularly faces the problem of access to the primary education services (see Dholakia and Iyengar, 2008).

There is a strong case for its public provisioning or budgetary support for provisioning. In this context, the present paper attempts to estimate the efforts needed to scale up primary education services in the rural areas of Tamil Nadu both in financial and physical resources required and changes in policies, institutions and practices needed. In the next section we briefly discuss the status of primary education services in Tamil Nadu with emphasis on rural areas. The third section discusses the results of our sample survey of households, and the fourth section describes the findings of our primary school survey. The fifth section attempts estimates of the financial and human resources required for scaling up the primary education services in rural Tamil Nadu. The sixth and final section concludes the paper with our recommendations for improving the delivery of the service in rural Tamil Nadu.

State/UT	Overall GER	Overall NER	% Total Enrolment of children in		Estimated GER [@] for	
			SC	ST	SC	ST
Andaman & Nicobar Islands	70.83	55.37	0.04	8.9	NA	291.51
Andhra Pradesh	96.84	75.28	19.4	10.4	106.57	126.3
Arunachal Pradesh	153.94	110.58	0.98	74.2	281.41	168.48
Assam	96.65	88.84	10.2	15.6	142.08	118.08
Bihar	92.44	84.13	16.2	1.3	92.03	130.77
Chandigarh	72.55	59.31	13.4	0.08	45.1	NA
Chhattisgarh	131.48	NA	14.3	34.1	151.82	138.58
Dadra & Nagar Haveli	123.73	93.82	3.6	69.6	268.13	116.47
Daman & Div	85.7	70.11	4.1	12.1	92.99	88.7
Delhi	89.57	65.81	12.8	0.52	58.98	NA
Goa	54.12	48.17	2.7	5.6	68.77	NA
Gujarat	100.3	78.89	7.4	19.1	100.99	117.06
Haryana	57.9	38.08	33	0.36	89.42	NA
Himachal Pradesh	110.53	87.29	29.7	5.5	123.63	141
Jammu & Kashmir	94.4	75.86	9.2	14.3	118.2	111.06
Jharkhand	123.58	63.66	14.8	33.6	144.41	155.76
Karnataka	93.58	83.97	21.2	8.1	108.49	101.43
Kerala *	102.41	83.54	11.3	2.2	125.5	187.04
Lakshadweep	87.39	69.33	3.7	95	NA	84.91
Madhya Pradesh	129.76	94.22	17.5	25.3	142.57	148.68
Maharashtra	96.82	79.32	14.5	12	128.22	112.81
Manipur	132.1	102.27	3.1	41	157.41	148.35
Meghalaya	132.83	94.01	1	93.3	288.48	140.87
Mizoram **	155.76	117.66	0.47	97	NA	156.46
Nagaland **	133.13	110.38	1.9	94.7	NA	138.21
Orissa	117.38	94.05	20.4	26.3	138.52	124.67
Pondicherry	79.54	56.66	17.4	0.07	74.99	NA

Punjab	65.34	51.78	51.2	0.16	102.00	NA
Rajasthan	112.72	81.52	20.4	15.5	126.17	133.4
Sikkim	138	94.54	7.5	36.8	190.98	240.15
Tamil Nadu	118.58	93.92	24.8	2	137.73	190.37
Tripura **	133.4	121	18.5	41.5	139.30	152.3
Utter Pradesh	107.27	97.74	27.7	0.69	135.66	NA
Uttarakhand	97	83.32	27.5	3.9	136.26	118.63
West Bengal	104.45	82.76	28.5	6.7	121.83	114.18
India	103.77	84.53	18.95	9.56	113.16	110.58
* Data not fully reported in 2005-06. Hence these pertain to 2003-04						
** Technically NER cannot Exceed 100. NER above hundred may be because of the in-migration of 6-11 years from the surrounding areas.						
@': Estimated on basis of overall GER, percentage SC and ST enrolment in primary schools and proportion of SC and ST population in the 5-14 age group. Estimated GER = [(% of SC or ST enrolment) / (% of SC or ST population in relevant age-group)] * overall GER						
<i>Source: Dholakia and Iyengar (2008)</i>						

II. Primary Education in Tamil Nadu – Status Report

Tamil Nadu is geographically the 11th largest state in India with an area of 130,058 square kilometres accounting for 4% of the national area. It has a long coastline extending up to 1000 kms. Climatically the state falls into a semi – humid and a semi – arid zone. As per Census 2001, Tamil Nadu is one of the better off states in India in terms of high overall literacy rate of 73% and also a high female literacy rate of about 65%. Thus, an inquiry into the existing primary education service and its distinguishing features in the state becomes relevant.

Tamil Nadu has an impressive coverage of habitations in rural areas with schooling facilities at primary stage within one kilometre. In 2005, 99% of rural habitations had already been covered. Since the state runs the *Sarva Shiksha Abhiyan* (SSA or Universal Education Campaign) quite successfully, the goal of providing physical access (availability) of a primary school in almost every square kilometre is achieved by now. The issues are, however, of the quality of the facility and the services, besides ensuring that children do not remain out of school. In December 2005 an independent education survey (ASER) was conducted by an NGO called Pratham. The ASER results show that only 1.2% of the children between 6 and 14 years were out of school in Tamil Nadu against only 4.2% in All-India. As per ASER literacy survey, Tamil Nadu has one of the lowest percentages of out of school children and ranked 5th after Kerala, Goa, Himachal Pradesh and Pondicherry. Thus, Tamil Nadu does not have a problem of attracting children to school and retaining them. However, the problem exists relatively among girls than the boys. In 2005-06, the proportion of girls in total enrolment in the Primary Schools was 48.3% and remained more or less the same for upper primary schools. The overall gross enrolment rate for primary education was

118.6% while the net enrolment rate was only 93.9% in Tamil Nadu³. Thus there is a problem of late entry of children to school and also of 6% children not enrolling in the primary schools. *Table 2a* provides the information about the type of schools with enrolment and *Table 2b* about comparison of schools in Tamil Nadu in 2005-06. These tables summarise the current situation of schools and several of their problems in Tamil Nadu.

It can be seen from *Table 2a* that there is hardly any substantial difference in the average size of a government school between the urban and the rural areas in Tamil Nadu. On the other hand, the average size of the private schools in urban areas is larger than that in the rural areas. The size of private schools is considerably greater than that of the government schools for all types in both urban and rural areas in the state. However, for the integrated schools having primary, upper primary, secondary and higher secondary section, this difference is not significant.

Table 2a: Type of Schools and Enrolment in Tamil Nadu, 2005-06							
Type of Schools	Govt. or Pvt.	All Areas			Rural Areas		
		Schools	Enrolment	Average Enrolment Per School	Schools	Enrolment	Average Enrolment Per School
Primary only	Govt.	24201	2222427	91.8	22640	1974234	87.2
	Pvt.	9715	1491522	153.5	6585	819920	124.5
Primary with UP	Govt.	6534	1683155	257.6	5857	1438460	245.6
	Pvt.	2580	1036805	401.9	1673	567841	339.4
Primary, UP & HS	Govt.	2146	577228	269.0	1914	505095	263.9
	Pvt.	2307	686184	297.4	1350	365721	270.9
UP only	Govt.	1658	714874	431.2	1307	530183	405.6
	Pvt.	2432	1342502	552.0	1014	466609	460.2
UP & HS	Govt.	0	0	-	0	0	-
	Pvt.	1	0	-	1	0	-
No response	Govt.	0	0	-	0	0	-
	Pvt.	0	0	-	0	0	-
Note : P=Primary; UP=Upper Primary; HS=Higher Secondary; Govt.=Government; Pvt.=Private							
<i>Source: State Report Card 2006</i>							

³ Gross Enrolment Rate (GER) is defined by considering total enrolment in the primary schools as a percentage of population in the age group of 6-11 years; while Net Enrolment Rate (NER) considers enrolment in the age group of 6-11 years.

Table 2b: Selected Characteristics of Schools in Tamil Nadu, 2005-06					
Sr. No.	Characteristics	Type of Schools			
		Only P	P+UP	P+UP+HS	Only UP
1	% of Single classroom schools	7.6	0.7	1.1	0.3
2	% of Schools with <i>pucca</i> Buildings	54.3	41.7	62.1	60.6
3	% of Schools with No Buildings	0.05	0.0	0.01	0.0
4	% of Enrol. in Schools w/o Buildings	0.0	0.0	0.1	0.0
5	% of Schools with Girls' Toilets	44.7	66.5	83.8	84.9
6	% of Schools w/o Toilets	42.8	43.1	53.9	49.6
7	% of Single Teacher Schools	4.7	0.5	1.3	0.7
8	% of Enrol. In Single Teacher Schools	2.1	0.2	0.6	0.2
9	% of Schools with SCR>60*	4.3	9.0	6.6	5.6
10	% of Enrol. In Schools with SCR>60*	10.9	16.6	27.7	0.2
11	% of Enrol. In Schools w/o Blackboard	3.1	3.0	5.7	6.8
12	% of No Female Teacher Schools	10.1	4.6	4.0	2.6
13	% of Schools with Pre-primary Section	16.9	12.3	31.3	0.0
14	% of Girls' Enrolment	48.7	48.7	48.2	46.7
15	% of Schools with Students ≤ 50	35.1	1.9	3.2	3.1
16	% Schools with PTR $> 100^*$	0.5	1.4	2.5	2.6
17	% of Schools Established since 1994	15.0	6.8	36.8	11.9

* Note : SCR = Students Classroom Ratio; PTR = Pupil Teacher Ratio

Source: Same as Table 1.

Table 2b shows that only about 54% of the primary schools and 42% of the elementary schools have *pucca* buildings. However, only 0.05% of primary schools are without a school building. This is because there are a large number of schools (25% primary schools and 52% elementary schools) with multiple type of building i.e. with more than one type of building – *pucca*, semi *pucca*, *kachha*, etc –in the same school. The major infrastructural shortfall in the primary schools in Tamil Nadu is lack of toilets in general and girls' toilets in particular. Schools without any female teachers are quite low with about 10% in the primary and 5% elementary section. There is a serious problem of small schools with students less than 50 accounting for almost one-third of all primary schools in the state. As against this the proportion of single teacher schools in the state is only about 5% in the primary schools. Schools with pre-primary section are not very popular in Tamil Nadu so far. Special efforts are required in this direction to enhance quality of education and learning in the state.

Physical infrastructure in terms of classrooms and their quality is important in attracting pupils to school. Table 3 provides the data in this regard by types of schools. Only primary schools in Tamil Nadu have on an average about 4.17 classrooms. Only 7.6% of the schools have a single classroom. If these schools run in two shifts, the problem of multiple standards using the same classroom simultaneously may be easily solved. This can ensure quality education. Moreover, these classrooms are also not in

good condition in the state. Almost 18% of the classrooms require minor repairs and about 5% require major repairs. Thus, although new schools and new buildings may not be required in big number in the state, significant repairs besides additional rooms need to be constructed.

Table 3: Classrooms and their Conditions by Types of School, Tamil Nadu 2005-06

Sr. No.	Specification	Type of Schools				
		Only P	P+UP	P+UP+HS	Only UP	UP+HS
1	No. of schools	33916	9114	4453	4090	1
2	No. of classrooms (CR)	141536	81077	48630	91403	1
3	No. of other rooms	26254	14817	15385	24809	0
4	No. of CR needing Minor Repair	24910	12972	4425	7769	0
5	No. of CR needing Major Repair	7077	4540	1362	3473	0
6	Av. No. of CR per school	4.2	8.9	10.9	22.3	1

Source: Same as Table 1.

Table 4: Teachers in Rural Schools, Tamil Nadu 2005-06

Sr. No.	Specification	Type of Schools				
		Only P	P+UP	P+UP+HS	Only UP	UP+HS
1	No. of Teachers in Govt. schools	67103	44300	18724	32529	0
2	No. of Teachers in Pvt. schools.	56205	31806	27966	51312	3
3	No. of Regular Teachers	121960	75574	45739	82123	3
4	No. of Para Teachers	1348	532	951	1718	0
5	No. of Total Teachers	123308	76106	46690	83841	3
6	% of Trained Teachers (Males)	84.9	69.4	37.9	31.8	0
7	% of Trained Teachers (Females)	63.1	68.5	27.5	27.7	0
8	Regular Teachers Per School (Govt.)	2.7	6.7	8.5	19.3	0
9	Regular Teachers Per School (Pvt.)	5.8	12.3	11.9	20.6	3
10	Enrol. Per Regular Teacher (Govt.)	30.0	32.8	27.6	16.6	0
11	Enrol. Per Regular Teacher (Pvt.)	14.6	17.9	13.3	9.3	0

Note : P=Primary; UP=Upper Primary; HS=Higher Secondary; Govt.=Government; Pvt.=Private

Source: Same as Table 1.

Another major problem with existing primary schools in Tamil Nadu is of availability of teachers in general and of female teachers in particular. *Table 4* provides teacher related relevant data for schools in rural area. It can be seen from the *Table 4* that average number of regular teachers in government primary schools in rural Tamil Nadu is only 2.7. Single teacher Primary Schools are only about 4.7% (see *Table 2*), which includes private schools and primary schools in urban areas, too. Since government schools are known to have less number of teachers in rural areas as compared to the private schools, it implies that a majority of the government primary schools in rural Tamil Nadu have only two regular teachers. Thus, although the government primary schools in rural Tamil Nadu have about three to four classrooms, there are only two

regular teachers with 5 standards running simultaneously. These schools therefore, somewhat lack a proper learning environment and the quality of education suffers as a result. The student-teacher ratio, which is on an average 30 in government primary schools of Tamil Nadu, is also not very favourable. The table clearly brings out that the physical learning environment indicators are far better for the private primary schools. It is not surprising if parents prefer to send their children to private schools. It only shows that parents highly value educational quality and learning environment provided to their children. For any exercise of scaling up rural primary education services, the teacher-school ratio, student-teacher ratio and classroom-school ratio cannot be ignored. Rural Tamil Nadu faces problems on at least two of these three fronts. The transition rate, however, of primary to upper primary level for students in Tamil Nadu is as high as 92% and very low drop out rate.

The standard response of the government to reduce drop-out rate, increase attendance, retention, and transition rates is to provide incentives to children besides free education and the mid-day meal schemes. Accordingly the government of Tamil Nadu provides various incentives in terms of providing free textbooks, stationery, uniform and attendance related incentives for the children in the primary and upper primary government schools. *Table 5* provides the number of beneficiary children in the primary and upper primary schools in Tamil Nadu in 2005-06.

Table 5: Number of Beneficiaries of Various Incentives, Tamil Nadu, 2005-06				
Incentives	Primary		Upper Primary	
	Boys	Girls	Boys	Girls
Text-Books	2539471	2428604	1764213	1649375
Stationery	316488	361950	426497	431966
Attendance	17808	68817	130212	148874
Uniform	1990119	1891938	959832	903430
<i>Source: Same as Table 1.</i>				

In Tamil Nadu, textbooks are distributed free to all children in the primary and the upper primary classes. Stationery like notebooks, pencil, eraser, etc. is distributed free to children belonging to SC/ST. Attendance incentives in terms of freeships are given to the students belonging to SC/ST groups in upper primary and secondary schools to encourage them to study in the school and continue studies. Uniforms are given free to most of the students in primary and to SC/ST/OBC students in upper primary on selective basis.

III. Findings of Household Survey, 2008

The basic purpose of conducting a sample survey of the poor households in rural areas of the two states was to get some feel about: (i) the household expenditure on primary education by the poor; (ii) the reasons why enrolment of children is not cent percent; and (iii) the extent of the benefits of the incentives provided by the government actually reaching the weaker section. One district from the state was selected as a representative

of the state conditions for our study. The sample survey of the poor households was purposive. We surveyed 281 poor households in Villupuram district of Tamil Nadu. The average size of the household among the poor households surveyed by us was 4.6. Average annual family income in our sample households was Rs.45,516. The land ownership was 46% among the sample households and the cattle ownership was 37%. Average cattle per poor household were nearly 3 with relatively greater cattle ownership among the land-owning households. Considering the lower income levels, looking after the cattle is an important activity for those households in Villupuram. Generally the children, largely boys, are driven to this activity even if they have to sacrifice attending schools.

The weaker section households in Villupuram have significant access to electricity. About 98% of the poor households in Villupuram have electricity in their residence. This was found to be much better than the other southern states of Karnataka and Andhra Pradesh. Moreover, they get electricity for about 20 hours a day and for all 7 days of a week. Availability of electricity could be a major factor in determining literacy. If electricity is not available to poor households, their literacy rate could be substantially lower because the learning and reading environment at home would then be seriously lacking.

The literacy rate among the poor households was about 64% in our sample. In terms of drinking water, about 93% of the poor households had access to tap or hand-pump in Villupuram. There is no practice of filtering or boiling the drinking water before use among most of the households. None of the households in our sample reported toilet facility on their premises. Drainage, sewerage or waste removal facilities did not exist in the surveyed households. Thus, the poor households in the rural Tamil Nadu suffered from complete lack of sanitation related infrastructural facilities.

The extent of illness and morbidity prevailing among the poor households in the rural areas of Tamil Nadu is about 18% with the incidence of hospitalisation being 3%. This is significantly lower than what we found in the northern states of Madhya Pradesh (MP), Uttar Pradesh (UP) and Rajasthan and also is relatively lower than the southern states of Karnataka and AP (Bajpai et al., 2005, 2006 and 2008). Higher morbidity and sickness among the poor households would obviously discourage children from attending schools either because they need to take rest to get cured or they need to substitute the sick member of the family in his/her routine work.

In our sample, we had only 1.37 children (0-15 years) per household and the proportion of children in population was 30%. The children in the school-going age were 25% of the sample population in the district and about 91% of children in this age-group attended school. *Table 6* provides the distribution of children either not attending the schools or very irregular in attending the schools by the most important reason.

Findings of the sample survey reported in *Table 6* show the importance of poverty and related other reasons discussed above for the non-attendance of the school. It can be seen from the table that household activity among girls and the 'other reasons' among boys account for a large percentage in our sample. 'Other reasons' include the distance of

the school, grazing cattles, helping on family farms, sickness of other family members, etc. Distance of the school is more relevant for upper primary and secondary schools, because primary schools are generally available within one kilometre radius of the habitations.

Table 6: Number of Children by Reason for Non-Attendance and Irregularity in Attending School in Villupuram (in %)

Sr. No.	Reasons	Villupuram District		
		Boys	Girls	Total
1	Household Activity	3.85	52.38	25.53
2	Employment	46.15	47.62	46.81
3	Others	50.00	-	27.66
	All	100	100	100

Source: Household Sample Survey, 2008.

The per capita income in our sample households worked out at Rs.9868 and the average household income was Rs.45516. They were found to spend on an average Rs.909 or 2% of the household incomes on education. The average cost of a school going child was found to be Rs.941 in sample households. In Villupuram, we found that almost 87% of the children in the poor households went to the government schools with only 13% going to the private schools. For the families sending their children to the government schools, average expenditure is about Rs.369. On the other hand, the families sending their children to the private school spend an average of about Rs.2277. In our sample survey, we did not find a very sharp preference for boy or girl child and their treatment for education at primary stage.

Our discussion with families during the survey revealed that people do recognize better facilities, quality and learning environment in the private schools compared to public schools. However, the cost of education in the private schools and the incentives offered in the public schools make it economically unaffordable for the poor to enrol their children in the private schools. As the draft Approach Paper of 11th Plan (2006) suggests, if an effective choice is given to the poor at the same cost, they would invariably prefer private schools over the public schools. This raises questions about the incentives given to children and families by the public schools, because they contribute to perpetuating the basic inefficiency and putting them to effective disadvantage for higher learning and future prospects.

Regarding incentives offered to children in the government schools, 86% children in the poor households in Villupuram received the benefit of the midday meal. Textbooks are another major incentive offered in the public schools and about 99% poor children in Villupuram received the benefit. The children in private schools also receive textbooks from the school. However, they are not distributed for free and are charged as a part of the fees. Over and above these benefits, children of the poor households in Villupuram also received substantial benefits of school uniform (84%) and about 36% of the children also received school supplies. The incentive of cash subsidy was received by a very few number of children (only 3%) among the poor households. Thus, the benefits

of free textbooks, free uniforms and mid-day meals do actually reach almost all public primary school going children from the poor families in rural Tamil Nadu.

IV. Findings of Sample Survey of Schools

During April 2008, sample survey of households in Villupuram district, we simultaneously conducted a sample survey of 38 schools in the district. We surveyed the schools in and around the selected villages and *talukas*. The types of schools selected and the questionnaire used for the survey are given in Appendix B. The purpose of the survey was to better understand the issues relating to quantity and quality of infrastructure, specific problems faced by schools, the cost of furniture, equipments and facilities, the problems of teachers, etc. Although the survey was formally conducted with a questionnaire, we collected considerable information through discussion and observation.

Table 7 summarises physical infrastructure and manpower position of the surveyed schools. All the public and private schools in Villupuram had their own building (except one private school in rented premises). The private schools in the district have almost double the number of classrooms on an average compared to the public schools. Average area in square feet was also higher in the private schools than in public school though not in proportion to the number of classrooms. The average number of toilets per school was only 1 in public schools, 2 in private-aided schools and 4 in private schools. We found 25% public schools in Villupuram without toilet/urinals. This proportion in the private schools in the districts was zero. It is indeed surprising how the public schools could be allowed without such basic facilities.

There was at least one blackboard per classroom in both the public and private schools in the district. However, the availability of desks/benches and chairs were considerably higher in the private schools than in the public schools. Both the types of schools in the district had on an average one teacher per classroom. 100% of their teachers in both public as well as private schools were trained and qualified. The distinguishing feature of the public and private schools in the state was that almost 3 teachers per private school stayed/lived in the village itself compared to only 1 teacher per public school as well as the private aided school. This does have a definite impact on the quality of instruction and care in the primary education of children in rural areas. The size of the private schools in the state was found to be almost double the size of public schools in terms of enrolment.

However, the pupil-teacher ratio was not very different in the two types of schools. What is worth-noting is that the number of administrative staff was considerably higher in the public school than in the private schools considering the number of classrooms, enrolment or teachers. Thus, public schools appeared to be more bureaucratic than the private schools in the state. It is surprising to find more girls per boys in the public schools than in the private schools although there was no explicit preference for either sex among the poor households. Thus, cost considerations seemed to weigh in favor of boys in the general population.

Table 7:- Infrastructure and Manpower in Government and Private schools in Villupuram			
	Government Schools	Private Schools	Private Aided School
Infrastructure			
Total Number of Schools	24	11	3
No.of Schools with own building	24	10	3
No.of Schools without building	0	0	0
No.of Schools with rented building	0	1	0
Avg No. of rooms	6	10	6
Avg No. of classrooms	4	7	5
Avg area in square feet	2696	2851	2450
Avg No. of toilets	1	4	2
No.of Schools without Toilet/Urinals	6	0	0
Avg. No.of Desks/Benches	13	31	8
Avg. No.of Chairs	6	17	14
Avg. No.of Blackboards	7	10	8
Manpower			
No. of Teachers (per school)	4	8	4
No. of Qualified Teachers (per school)	4	8	4
No. of Teachers staying in village(per school)	1	3	1
No. of Teachers staying outside village(per school)	3	5	3
No. of Admin. Staff (per school)	3	2	3
Avg No. of Students Enrolled/School (M)	64	129	64
(F)	61	90	62
No. of pupils per teacher	30	27	31
No. of Girls per 100 Boys (girls: boy ratio)	94	70	97
<i>Source: Sample survey of schools, 2008</i>			

We may now consider the cost aspects of the infrastructure and administration of the surveyed schools in the Villupuram district. *Table 8* presents the findings. It can be seen from the table that the capital cost items like toilets and desks were less costly in the private schools than in the public schools, but construction of a classroom was more costly in the private schools than in the public schools in the district. The recurring cost, however, differed. The private and the public schools provided almost the same

maintenance cost, but the administrative costs were substantially more in the private than the public schools. Like in the northern states (MP, UP and Rajasthan) and in the southern states (Karnataka and AP), we found that in Tamil Nadu too, the average salary of a teacher in the public school was substantially higher than in the private school – 6.5 times in public schools and 9 times in private aided schools! A part of the difference is explained by the training or qualifications of the teachers and availability of local employment, but a large part of the difference could be simply the rent earned by the unionised government teachers. The private schools reflect more closely the market rate of wages determined by the relative scarcity of resources.

Table 8:- Capital and Recurrent costs of public and private schools in Villupuram			
Capital Cost(Rs.)	Government Schools	Private Schools	Private Aided School
Classroom	111529	118125	100000
Toilet & Urinals	25000	12000	10000
Black board (1 unit)	300	500	600
Desk (1 unit)	1238	1086	2000
Chair (1 unit)	357	355	350
Mid-day Meals (Utensils)	15000	-	15000
Recurrent Cost(Rs.)			
Maintenance/classroom (Per Year)	2000	1900	2500
Black Board	80	90	125
School Administration cost	3900	8800	4750
Mid-day Meals (per student per day)	3	-	3
Monthly Salary per teacher	10270	1579	14167
Text Books	145	-	120
<i>Source: Sample survey of schools, 2008</i>			

The textbooks used by students in the private and public schools in Tamil Nadu are different. This is because most of the private schools follow English medium whereas the government schools follow the Tamil medium. However, the private schools use syllabus formally approved by the government of Tamil Nadu for primary schools. Therefore, the difference between the two types of schools reflects on the delivery and effectiveness of the service rather than any fundamental difference of syllabus. However, the textbook prescribed for the primary classes in various subjects need a critical look. We have attempted a cursory content analysis of the textbooks used by the government primary schools keeping in view the rural audience. *Appendix C* provides its description and our comments for the available textbooks. In general terms, we have found that it was good to introduce English as a subject from the first Grade/Standard, but that the

level of difficulty increasing sharply and suddenly from third standard could be extremely discouraging for both students and teachers in the rural areas. Moreover, there are no Tamil to English translations given in the textbooks which could be helpful for both the teachers and the students in the rural areas. Level of abstraction in Mathematics is not very carefully raised. The subject matter in the social science textbooks is not very logically designed. There are sudden changes in the subject matter in the 5th standard. Principles of Science are relatively more emphasised in the current textbooks.

Some qualitative findings and specific relevant observations from our survey in Villupuram both from public and private schools are as follows:

- All the government primary schools were operating in the government owned official buildings. Most of the schools had sufficiently well maintained buildings, but in some of the schools the buildings were not maintained and were not in a usable condition. One of the schools was found to be having extremely old building not repaired for quite a few years. The school compound was also not clean. However, these schools did report to have received funds for renovation of the building.
- During the survey some of the government schools were undergoing renovation and construction of the school buildings. In one such school it was found that the students were shifted temporarily to an old small building with a single room which was not only unusable, but was also unsafe for the students. This definitely raises questions on the decisions of the school administration and the officials.
- The private schools had relatively better infrastructure than that of the public schools not only in terms of the quantity, but also the quality. However, some of the private schools were found to be working in extremely small and congested buildings. One of the schools was found to be having very small classrooms without sufficient lighting and ventilation. The building of the school also appeared to be quite old and in a bad shape. It is indeed surprising as to how these schools have been given permissions to operate when they are being inspected regularly according to the school authorities.
- It was found during the visit that several government schools did not have proper toilet/urinals facility for the students. 16 (66%) government schools did not have boys' toilet and 9 (38%) did not have girls' toilet. There were 6 (25%) schools that did not have any of the toilets/urinals. This problem was largely due to the fact that in most schools, the toilets were not in usable conditions due to insufficient water supply in the toilets and poor maintenance. One of the schools reported that they received funds for construction of classrooms, but no separate funds were provided to build toilets which did not exist in the school. The private schools, however, did not have such a problem. Most of the private as well as the private aided schools had sufficient number of toilets and urinals separate for both boys and girls.

- The government schools were also found to be having scarcity of classrooms. 14 (58%) of the government schools had lesser number of classrooms than the number of standards. For this reason most of the government schools (83%) had a system of multiple classes being held in the same classroom simultaneously. In private schools this problem was much less. Only 3 (28%) schools had the system of multiple standards in the same classroom. Also one of the private aided schools had this system as it was a single classroom school.
- Some of the schools reported that the village *panchayat* had stopped paying the electricity bills and the teachers had to pay it from their own pocket. Such administrative inefficiencies on part of the government authorities can cause problems for teachers and students affecting the smooth functioning of the schools.
- None of the government primary schools and the private aided schools charged any fees from any students in the primary section. The private aided schools, like the government schools, received all the financial support for the functioning of the school from the government. They were owned and managed by private entities/individuals. The fee charged by the private schools in the primary section was on an average Rs.100 per month from each student. However, this fee did not include the transportation and examination fee which is charged separately.
- The public and the private aided schools reported a complete coverage of students under the free textbooks and uniform distribution in the primary section. This finding corroborates with our findings of the household survey. The cash subsidy incentive, according to the schools, was given only to the girls of the SC and ST population. However, we did not find it to be effectively reaching the households in our sample.
- The scheme of mid-day meals was being effectively implemented by all the public and private aided primary schools in Villupuram. The administration of the mid-day meals in Tamil Nadu is independent of the school management. It is being directly handled by the BDO (block development officer). Each school is supposed to have a mid-day meal organiser who takes care of the regular supply of food grains, vegetables, etc. The system of mid-day meal organiser was indeed helpful as it reduced the teacher's burden of administering the same and they could devote their time to teaching activity. However, it was found during the survey that most of the organisers are allotted to more than one school for the mid-day meal management.
- The government of Tamil Nadu has recently introduced the system of ABL (activity based learning) for the students of class 1 to 4 in the primary section. Apart from the regular textbooks, the teachers use the ABL material which mainly consists of picture cards for all the subjects in these classes. This system also included use of low level blackboards for students so that they could also learn by themselves. During the survey we found that all the schools had received the ABL material and had the low level blackboards. The teachers in the public and private

aided schools had also received the required in-service training for use of this system.

- The government has also introduced two new schemes for the students of primary as well as for the secondary classes. They are: (i) Computer training for the students which include basic computer literacy for all students and use of computer games for learning different subjects, and (ii) Conducting audio visual classes for the students for the subjects like English and general science. It includes teaching the pronunciations of simple words and sentence formations in English and, simple scientific experiments to understand the basic concepts of science. These schemes, however, appeared more useful and relevant only for the secondary classes rather than the primary.

Estimating Required Scaling-up Efforts

The millennium development goal about literacy is to make primary education universal. The net enrolment rate in the population 6-11 years should be made 100%. For our purpose, it becomes an effective target for scaling up effort. Besides, the quality of the inputs should also improve to deliver the service with outcome orientation. The *Census of India, 2001* provides population of states by rural-urban residence and five year age-groups. By making appropriate adjustments and assuming the annual growth rates of 0.8% for rural Tamil Nadu we get 4.9031 million children in the age-group 6-11 years in October 2005 and 5.0619 million in October 2009.

As a second step, we consider the crucial 4 parameters (ratios), viz., enrolment per classroom (E/CR); classrooms per school (CR/S); teachers per classroom (T/CR); and enrolment per teacher (E/T). For physical quantity of infrastructure and quality of primary education, these four parameters are very important. Their existing and desirable average values in rural Tamil Nadu are presented in *Table 9*.

Table 9: Selected Parameter Values for Rural Tamil Nadu, 2005-06				
Values	Enrol./CR	CR/School	Teachers/CR	Enrol./Teacher
Existing Values	25.25	5.17	1.05	24.07
Desirable Values	26	5	1.18	22

Source: Tables 1, 3, and 4 above; and our discussions and Survey, 2008

Table 9 addresses the basic problems of primary educational services in rural areas of Tamil Nadu. Government schools in Tamil Nadu are close to the desirable values in enrolment per classroom as well as classrooms per school. However, the availability of teachers per classroom is lower than the desirable values. In order to improve the quality of primary education in Tamil Nadu, we have considered these aspects while fixing the targets for the parameter values. *Table 10* provides our estimates of the gap between the required and existing levels of services in primary education in the rural areas of the state. This is done in two steps: (1) estimating the gap in 2005-06 with existing values of parameters; and (2) estimating the gap in 2009-10 with desired (target) values of parameters.

Sr.No	Year	Schools	Enrolment	Teachers	Classrooms
1	2005-06 (Existing)	36755	4800455	199414	190150
2	2005-06 (Required with existing Parameters)	37541	4903081	203677	194215
3	2005-06 (Gap = (2) – (1))	786	102626	4263	4065
4	2009-10 (Required with Desired Parameters)	38938	5061873	230085	194687
5	2009-10 (Gap = (4) – (1))	2183	261418	30671	4537

Major thrust of the envisaged action on improving the physical learning environment in primary school as seen from *Table 14* is to increase teachers per classroom and reducing enrolment per teacher in Tamil Nadu. A school must have at least 5 effective classrooms and 6 effectively available teachers to run standards 1 to 5. Given the fact that a number of rural schools in the state have lesser number of classrooms than the number of standards, it is necessary that they have 5 classrooms per school on an average. In case, this is not possible for some reasons, they can run the school in two shifts – standard 1 to 3 in the afternoon and standard 4 and 5 in the morning. This would in itself substantially improve the learning environment and also the quality of education imparted.

We may now estimate the financial resources required to scale up primary education services in rural Tamil Nadu. We have considered only one regular teacher per new school proposed, the rest being para-teachers. This is because the regular teachers generally do not stay in the villages, whereas the para-teachers being locals are invariably from the same village. Moreover, we have considered revised pay-scales for the regular and para-teachers in anticipation of the 6th Pay Commission’s recommendations (see, Srikrishna, et al. 2008). We also take note of the major repairs, minor repairs and toilets needed in the existing schools in the two states and provide for the same. A helper per school is also provided for cooking, cleaning, gardening, etc. *Table 11* provides details for our estimates for rural Tamil Nadu.

Tables 11 shows that additional requirement of financial resources is Rs. 4.5 billion in Tamil Nadu to scale up the rural services in primary education. On per capita basis, it works out to Rs.67. While rural Tamil Nadu has already the physical infrastructure in place, it requires some additional effort to maintain and improve the existing infrastructure. Tamil Nadu is placed far better than the northern states like UP, MP and Rajasthan in terms of physical infrastructure (see Bajpai et a., 2005 and 2006). This is not surprising because the state has been spending considerably higher amount per capita than the northern states for past several years. In 2007-08 budget, Tamil Nadu allocated Rs.84.3 billion or Rs.1260 per capita. The additional effort required as per our

estimate is, therefore, only 5.3% over two years. It is definitely not a very tough target for the state to achieve.

Table 11: Additional Expenditure Requirement for Scaling-up Rural Primary Education in Tamil Nadu					
Sr. No.	Item	Remarks/Details	Unit Cost (Rs.000)	No. of Units Required	Cost in Rs. Million
1	Classrooms	Average unit cost including extension	105.84	4,537	480
2	New schools + toilets + furniture – classrooms	Furniture – Rs.15,000* Toilets – Rs.32,000* Existing school w/o building	116.9	2,183 + 15	255 + 1.7
3	Major repairs	Per classroom	22.1	9,923	714
4	Minor repairs	Per classroom	11	32,358	109
5	Toilets	1 unit = 1 boys' + 1 girls'	33.1	15,754	521
	Total Capital Cost		-		2,081
6	Maintenance	Utilities + colour + garden	16.5	38,938	642
7	Regular Teacher	New Regular teachers @Rs.11,000 p.m.	132	2,183	288
8	Para-Teachers	@ Rs.3,000 pm	36	28,488	1026
9	Teaching contingency	To each teacher	0.55	30,671	17
10	Training stipend – Regular Teachers	For Regular Teachers @Rs.100 for 20 days / year.	2.0	2,183	4
	– Para Teachers	@ Rs.100 for 30 days / year	3.0	28,488	85
11	Helper	Cleaning, gardening, cooking and general	6.62	38,938	258
12	Textbook + stationary	To all students	0.11	261,418	29
13	Scholarship	To all BPL and SC+ST+OBC students	0.33	104,567	35
	Total Recurring Cost				2,384
	Total cost				4,465
	Per Capita basis	66.89mn is estimated rural population of TN for (October) 2009-10 (Per capita cost in Rs.)			
	–Capital Cost		-		31
	–Recurring Cost		-		36
	–Total Cost		-		67

Total Cost	-	-	67
<i>Note: *Formula unit for school includes 3 tables + 6 chairs + 3 cupboards + 3 wooden blackboard + 4 hanging blackboard; and toilet unit include 1 toilet each for boys and girls.</i>			
<i>Source:- Tables 1, 2, 3,4,and 10 and our Survey, 2008</i>			

V. Recommendations

As we have discussed in the paper, rural areas of Tamil Nadu do not have severe shortfall in terms of physical facilities and access of population to primary education. The problem is more in terms of improving the quality of services in public schools. The basic physical infrastructural facilities like water, electricity, classrooms, toilets, etc., are very important determinants of the learning environment. All such facilities need to be adequately and urgently provided. This requires a multi-departmental or “integrated” approach. If coordination among education, health, power, construction (PWD), roads, transport departments, is not possible at a higher level, education department will have to take responsibility of all these activities and provide a comprehensive solution.

There is a technical hitch in budget making at the state level. It is very well-known that most of the revenue expenditure on education consists of teachers’ salaries. However, this is considered a non-plan expenditure item in the state budget. In the overall environment of severe resource crunch and constant pressure under Fiscal Responsibility and Budget Management (FRBM) concerns even at the state level, the non-plan expenditures are always the easy targets for the cuts. That is how, sanctioned posts of teachers in primary and secondary schools are allowed to remain unfilled for years leading to the serious scarcity of teachers in the public schools (see *Table 10*). Currently, these vacancies are filled on *ad hoc* temporary basis by para-teachers who are paid almost one-fourth of the salary of a regular teacher (see, *Table 11*). This is a reasonable solution to save public resources by effectively reducing the average cost of the teacher and simultaneously ensuring the presence of teachers in the rural schools since the para-teachers would be locals from the village. Another “solution” to convert the salaries of teachers into a plan expenditure item and living with the problem of high fiscal deficits is not a desirable one and should not be acceptable to the government and the business community.

Another powerful solution to the problem of resources is to encourage private participation in building and running schools. As the draft Approach Paper of XI Plan (2006a) suggests, the weaker sections of the society can be given coupons and thereby a choice of choosing the school for their kids. This can take off a lot of financial burden from the government. We have seen that in the private sector schools, the number of teachers per school, classrooms per school, students per teacher, and students per classrooms are far better than the public schools. The government needs to take a policy stance to positively encourage private schools to expand their scale and area of operation by providing appropriate incentives, establish inspection norms, admission criteria and procedures, etc. The idea is for the government not to withdraw but provide competent and qualitative benchmarks for the private schools through their illustrative presence in different areas. The expansion of employment of teachers and helpers as visualised in *Table 11* can largely take place in the private sector if proper policies are followed to allow some of the public primary schools to be taken over by the private management.

To improve the quality of regular teachers, annual grant for 20 days training is provided. For para-teachers, annually 30 days of training is recommended. The rate of stipend also needs regular upward revision.

There is an urgent need to streamline the administration for providing caste certificates to all SC/ST and OBC families. If the government thinks that these families need concessions and subsidies/ incentives, they must first be properly identified and certified so that they do not have to incur disproportionate resources to obtain such certification. Otherwise, the scheme becomes wasteful, discriminating and unjust for the real target group.

For public schools, the teachers must stay in the respective village itself and not in the radius of a 5 or 10 kms. This is because once a distance of 5 or 10 kms is allowed, it becomes almost impossible to monitor whether it is 5 kms, or 50 kms, in practice.

Every primary public school should maintain a small garden/ compound and should have a helper to take care of cleaning, cooking, gardening, etc.

Primary schools should have effective 5 classrooms and 6 teachers or should run in two shifts to ensure availability of separate classroom for every standard.

Textbooks need to be modified and contents of syllabus made more oriented to the rural children.

Notebooks and pencil/pen should also be provided free to children belonging to BPL families. These subsidies may be targeted to BPL family children only and not be made available indiscriminately to non-BPL families.

Private schools need to be properly supervised and inspected regularly for the quality of their education services and physical infrastructure.

Grants for repairs/maintenance and facilities to schools should be determined by the size of the school and needs of the schools.

Government administration needs to be sensitive to teachers' conditions and be efficient in disbursing salaries to them when transferred.

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APPENDIX A

Methodology of Sample Survey of Households in Tamil Nadu

The basic objective of the present study was to assess the prevailing conditions of primary education and health facilities in terms of quantity and quality in the rural areas of Tamil Nadu. The adequacy of these services had to be considered from the perspectives of the access of vulnerable sections of the society. A sample survey of households was conducted to get this perspective.

It was decided to survey some households in a district to represent broadly the conditions in the state. The Villupuram district in Tamil Nadu was selected for the purpose in consultation with the state and the Planning Commission officials. In order to select a sample of households for a detailed survey to reflect conditions of the vulnerable sections in the rural areas of the district, it was necessary to select economically poorer households from different parts of the district. We, therefore, selected five *Tehseels / Talukas* (or blocks) of Villupuram district, and then, selected one medium sized village from each of those *Tehseels* for detailed survey. Since *Tehseel* is the second level of the administrative unit, selecting 5 *Tehseels* in the district would capture geographical diversity in the district.

Selection of villages depend on several criteria, viz., overall literacy rate, female literacy rate, percentage of scheduled cast / tribe population, worker population ratio, sex-ratio, average size of households, and absolute number of households. The main consideration was that the selected village should reflect the conditions of rural areas of the *Tehseel* as closely as possible on all these counts. All the same, the selected village should not be too large or too small. We could consider all these aspects while selecting the villages because *Census of India, 2001* readily provided data on all these aspects by villages. *Table A-1* provides data on all these variables for the list of selected *Tehseels* and villages in the Villupuram district for the year 2001. It can be seen from the table that the aggregate of the

Table A – 1: Sample villages selected for Villupuram (TN)

Level	Name	No. of HH	Total Population	Total Population - Males	Total Population - Females	ST Population	SC Population	Literate Population	No. of Literate Females	Working Population	Average Members/ HH	% Literate Population	% Literate Female	% ST Population	% SC Population	WPR	Sex Ratio	SC +ST %
DISTRICT	Villupuram	544609	2533456	1277415	1256041	740441	61687	1347727	537783	1297445	4.6519	0.5320	0.4282	0.0243	0.2923	0.5121	0.9833	0.3166
TALUK	Gingee	77901	346849	173616	173233	70823	6945	193423	78453	183935	4.4524	0.5577	0.4529	0.0200	0.2042	0.5303	0.9978	0.2242
VILLAGE	Siyappundi	211	988	490	498	0	0	399	141	567	4.6825	0.4038	0.2831	0.0000	0.0000	0.5739	1.0163	0.0000
TALUK	Tindivanam	70543	326265	163780	162485	111213	4558	180646	73588	158009	4.6251	0.5537	0.4529	0.0140	0.3409	0.4843	0.9921	0.3548
VILLAGE	Vadampundi	231	1020	517	503	326	63	507	197	535	4.4156	0.4971	0.3917	0.0618	0.3196	0.5245	0.9729	0.3814
TALUK	Vanur	30076	142492	72740	69752	50340	1612	84688	34660	64606	4.7377	0.5943	0.4969	0.0113	0.3533	0.4534	0.9589	0.3646
VILLAGE	Ottai	306	1396	716	680	624	22	703	268	779	4.5621	0.5036	0.3941	0.0158	0.4470	0.5580	0.9497	0.4628
TALUK	Tirukkoyilur	66371	325936	164888	161048	97024	2297	165944	64820	165765	4.9108	0.5091	0.4025	0.0070	0.2977	0.5086	0.9767	0.3047
VILLAGE	Aviyur	354	1644	827	817	249	0	1035	405	1014	4.6441	0.6296	0.4957	0.0000	0.1515	0.6168	0.9879	0.1515
TALUK	Sankarapuram	68913	328412	166368	162044	82921	41654	152354	59740	173254	4.7656	0.4639	0.3687	0.1268	0.2525	0.5276	0.9740	0.3793
VILLAGE	Sembarampattu (P)	524	2366	1185	1181	1216	15	1342	542	1202	4.5153	0.5672	0.4589	0.0063	0.5139	0.5080	0.9966	0.5203
Total of Selected Villages		1626	7414	3735	3679	2415	100	3986	1553	4097	4.5597	0.5376	0.4221	0.0135	0.3257	0.5526	0.9850	0.3392

5 selected villages from each district compares very well with the rural district in terms of all these characteristics.

At the second stage, we had to select households from the weaker section in each village for the survey. It is important, therefore, to identify households belonging to the vulnerable section. As per the instructions of the government of India, the government of Tamil Nadu conducted a detailed census of all households in the rural areas to identify economically weaker section. It was called the BPL census and was conducted in 2002-03 by respective school teachers at village level. The survey collected information on land and other asset holding, physical living conditions, broad consumption items, literacy, source of livelihood, condition of children, etc. Based on the survey data, points were awarded to each household. The scheme of awarding points to households on the basis of possible responses to the 13 different questions in their survey is presented in *Table A-2*.

Before going to the field we obtained the BPL house lists of all the selected villages in the state. The government had decided about the aggregate cut-off to identify the BPL families. The first cut-off was decided to be 15 or lower points for the poor of poor (POP) families being the weakest on all fronts. Further, another cut-off was decided at 25 points which included families between the two scores, not weak on all fronts but still are considered poor. We have selected the sample mainly from the POP families. However, in order to fulfil the required sample size we have also included families from the poor category by setting our cut-off to 18 points. We have added three points in order to cover the families that were relatively weaker among the poor section.

Given the objective of our sample survey, we chose a purposive sample only from the weaker section of the rural society in the Villupuram district in Tamil Nadu. It was decided to survey about 250 households from the district⁴.

⁴ The ideal sample size is given by $S = (z^2 \cdot p \cdot q / \alpha^2)$ where z and α are respectively the standard normal variate at the required confidence level and the significance level; and p and q are probabilities of required variate. Considering $z = 1.96$, $\alpha = 0.05$, $p = 0.8$ and $q = 0.2$, sample size (S) works out to be 246.

Table A-2: Scheme of Awarding Points on Possible Responses in the BPL Survey, Tamil Nadu						
Sr. No	Questions	Points				
		0	1	2	3	4
1	Land (in Ha.)	No land	<1 non-irrigated <0.5 irrigated	1-2 non-irrigated <0.5 irrigated	2-5 non-irrigated 1-2.5 irrigated	>5 non-irrigated >2.5 irrigated
2	House type	No house	<i>Kachcha</i>	Partial <i>kachcha</i>	<i>Pukka</i>	City like
3	Cloths (per person)	<2	2-3	4-5	5-9	>10
4	Meals a day	<1	One but sometimes less	Once sufficient	Two but sometimes less	Sufficient food available
5	Toilet facility	Open space	Common toilet w/o water supply	Common toilet with water supply.	Common toilet with water supply & sweeper.	Personal toilet.
6	Consumer durables: TV, Elec. Fan, Pressure cooker, Radio.	None	Any one	Any two	Any 3 or all	All and more
7	Literacy level of most educated member of family.	Illiterate	5 th standard	10 th standard	Diploma	Professional
8	Labour situation in the family.	Bonded labour	Women & child labour	Only adult women labour.	Only adult man labour.	Other
9	Source of livelihood	Agricultural labour	Farmer	Rural artisan	Salary	Other
10	Situation of children	Do not go to school & employed	Going to school and employed	Not going to school and not employed	Going to school but working.	Going to school and not working.
11	Type of debts	For daily use from non-insti. sources.	For agriculture from non-insti. sources.	For other use from non-insti. sources.	Only insti. Sources	No debts.
12	Reason for staying away from family.	Accidental work	For seasonal employment	Any other type of employ.	Not staying away.	Any other reason.
13	Requirement of aid.	For employment	For self-employment	For training and skill addition.	For housing.	Aid not required.

Source: BPL Survey, 2002-03.

In Villupuram district there were a total of 1584 households in the selected villages out of which 802 households belonged to the weaker section as per 18 points cut-off. We selected a total of 281 households, i.e. 17.7% of the total households from each of the selected villages. Our sample of 281 households represents 35% of the 802 households belonging to the weaker section in these selected villages. *Table A-3* provides the distribution of the total and sample households in the selected villages in the district.

We conducted the sample survey during April, 2008. While selecting the families for our sample survey it was important to avoid very small households without children below 14 years and women considering the purpose of the survey. We collected information from selected households through a structured questionnaire (given below for ready reference).

Table A-3: Distribution of Total and Sample Households by Selected Villages in Villupuram					
District	Tehseel/ Mandal	Village	Total HH.	Weaker Section HH with Points \leq 18	
				Total	Sample
Villupuram	Gingee	Siyapoondi	161	53	30
	Tindivanam	Vadapoondi	359	151	63
	Sankarapuram	Sembarampattu	557	256	98
	Tirrukkovilur	Aviyur	213	114	38
	Vanur	Ottai	294	228	52

Source: BPL Survey and the methodology described in the Text.

Household Questionnaire (Tamil Nadu)

(For "Scaling up Services in Rural India" project by the Earth Institute, Columbia University sponsored by Hewlett Foundation.)

Village: _____ Tehsil: _____ District: _____

Head of HH: _____ (M/F); Investigator:

_____ Date: _____

A. 1 BPL Score _____; 2. Size of HH: _____

2. Land owned _____ (Ha./Acre/_____)

3. Caste: SC/ ST/ OBC/ Muslims/Others;

B. 1. No. of Animals/ Cattle: _____

Buffalo: _____; Cows: _____; Bullocks: _____; Goats & Sheep: _____;

Donkey: _____;

Camel: _____; Poultry: _____

2. How far do you take them for grazing? _____ km. 3. Who takes them?

C. **Information on HH Amenities:**

1. Is the HH electrified? Yes/ No.

2. Electricity available for _____ days/week and _____ hrs./ per day

3. Source of drinking water:

Winter: Tap/ Well/ Public Well/ Public Hand pump/ Pond/ Canal/ Other (
)

Summer: Tap/ Well/ Public Well/ Public Hand pump/ Pond/ Canal/ Other (
)

Monsoon: Tap/ Well/ Public Well/ Public Hand pump/ Pond/ Canal/ Other (
)

4. Distance to the source of drinking water: _____ k.m. 5. Who fetches drinking water? _____ 6. Do you filter water? Yes/ No
7. Do you boil the water? Yes/ No.
8. Facility for Latrine and Toilet: Exclusive/ Common/ Open space
9. Sewerage: Underground/ Covered path/ Open path/ No system
10. Drainage: Underground/ Covered path/ Open path/ No system
11. Road cleaning and waste removing facility: Yes/ No; _____ times per week.

D. Information on HH Members:

Sl. No	Questions	Member							
		1	2	3	4	5	6	7	8
1	Name								
2	Relation with Head of HH.								
3	Sex (M/F)								
4	Age (yrs.)								
5	Level of education.								
6	Enrolled in school? (Y/N)								
7	Gainfully employed (Y/N)								
8	Earnings per month. (Rs.)								
9	Hospitalisation last year (Y/N)								
10	Any major sickness last year								
11	How many days in the year for the sickness?								
12	For how many days was treatment								

	taken?								
13	From where? (Public/ Private)								
14	At what cost? (Rs. /p.a.)								

E. Health Related Information:

a) Maternal Health:

1. # of deliveries performed in the HH: _____ so far.
2. # of children survived: _____ (out of the above)
3. # of children died during the delivery: _____
4. # of deliveries attended by *Dai*: _____
5. # of deliveries in hospital: _____; Govt. _____; Private: _____
6. Did the mother get antenatal checkups? Yes/No; _____ times.
7. Did the mother receive any injection / vaccination? Yes/No;
Any medicine? Yes/No
8. Did the mother die at the time of delivery? Yes/No; which delivery?

9. Was THE delivery attended by a *Dai* / Nurse/ doctor? Yes/No

b) Infants' Health (below 1 year):

1. Is the infant looked after regularly by any health worker? Yes/No;
How often?
_____/week; Examination? Yes/No; Weight? Yes/No; Medicines?
Yes/No

2. Are you aware about supplementary feeding programme/ *Anganwadi* workers /

Any govt. programme for your infant? Yes/No; Which ? -

3. Any emergency so far? Yes/No; What? _____

c) Child Health:

1. # of children surviving below 5 years: _____

2. # of children died within one year of birth: _____

3. # of children died before reaching 5 years of age: _____

4. Did the children receive immunisation/ vaccination/ *Tika*?:
Yes/No

5. Do children (below 5 yrs.) suffer from:

○ Fever: Yes/No; _____ times/year.

○ Stomach related: Yes/No; _____ times/year.

○ Malaria: Yes/No; _____ times/year.

○ Respiratory Disease: Yes/No; _____ times/year.

D) Medical Facilities:

1. Are you satisfied with existing medical facilities in your village?
Yes/No

2. Do you go to the Govt. PHC/ CHC/ Town Referral/ Private Doctor/ *Tantrik*?

3. When you visit, is the doctor available? Yes/No

If No, what do you do? / Go to private doctor/ *Tantrik*/ Nothing.

4. Reasons for not visiting Govt. Health Facility:
 Absence of Doctors and medical personnel? Yes/NO;
 Medicines not available? Yes/NO;
 Poor quality of service? Yes/NO;
 Poor infrastructural Facilities? Yes/NO;
 Attitude/Behaviour of the doctors and medical personnel?
Yes/NO
 Distance to the Health Facility? Yes/NO;
 Congestion/Overcrowding in the Health Facilities? Yes/NO.
5. What is the distance you travel for medical facility? _____ k.m.
6. On the whole, how do you rate the medical facilities available to you? By Govt. _____; by Private Sector: _____
 (Excellent - 5; Very good - 4; Good - 3; Fair - 2; Poor - 1; Very poor - 0)
7. Is there a VHW working in the village SC? Yes/No.
 Is she from the same village? Yes/No.
8. According to you, with presence of VHW (Village Health Worker),
- i) Has the working of the SC improved due to the VHW?
Yes/No.
 - ii) Is there any improvement in your use of services of government health facilities? Yes/No.
 - iii) What kind of services do you receive from the VHW?
 Delivery? Yes/No ; Ante-Natal Care? Yes/No ;
 Post-Natal Care? Yes/No ;
 Immunization of Children? Yes/No.

- iv) When does the VHW come to your place?
Voluntarily/ When approached/ Does not come at all
- v) What kind of information does the VHW Provide you provide you with? Very useful/ Somewhat useful/ Not so useful.

9. Was there any delivery in the household during the last one year?
Yes/NO

- i) If Yes where was it conducted? Govt Hospital/ Private Hospital/ Home.
- ii) Did the VHW accompany the mother to the hospital?
Yes/NO
- iii) Do you have any idea of any incentives provided by government for conducting delivery at the Govt. Health Facilities? Yes/No.
- iv) Did the mother receive any money from the government before the delivery? Yes/NO ? or After Delivery?
Yes/NO

If Yes how much? Rs. 500? Yes/NO; Rs. 700? Yes/NO;
Rs.3000? Yes/NO (before delivery) _____(no. of

times)

Rs.3000? Yes/NO (after delivery) _____(no. of

times)

- v) How much time did it take to reach you? _____.

10. Are there any pregnant women in the HH? Yes/NO

If *Yes* do they receive any financial assistance (money) from the Govt. ? Yes/NO.

Do they receive Ante-Natal Care from VHW? Yes/NO

F. Education Related Information

Number of children eligible for schools (>5)

	1	2	3	4
Age				
Sex				
Going to school? (Govt./ Pvt./ No)				
Distance to school in k.m.				
Is cash subsidy given (Rs. / No)				
School uniform given? (Y/N)				
Text books given? (Y/N)				
School supplies given? (Bag, notebook, pencil, etc.) (Y/N)				
Mid-Day meal given? (Y/N)				
Food grains given? (Y/N)				
Transport provided? (Y/N)				
Library available? (Y/N)				
Sports facilities available? (Y/N)				
Attending the school regularly? (Y/N)				
Does teacher come regularly? (Y/N)				
If not attending school, why? @				
Are you satisfied with the school facilities? (Low/Medium/High)				
What is the cost of studying in Rs./p.a.				
Fees				
Private Tuition				
School supplies & text books				
@ HH activities - HH; Employment - Em; Sickness - Sk; Marriage - Ma; No interest - Ni; Irregularity of teachers - It; Behaviour of teacher - Bt; Others - Ot (specify).				

APPENDIX B

Sample Survey of Primary Schools in Tamil Nadu

It was decided to conduct a detailed survey of selected sample primary schools in rural areas of the Villupuram district. During our field visit in april, 2008 for conducting the sample survey of households we decided to cover primary schools in and around the selected villages. There were 3 different types of primary schools – regular Government Primary Schools (GPS), Private Primary Schools (PPS) and Private Aided Primary schools. *Table B-1* gives the number of all these schools we covered for detailed investigation in the district.

Sr. No.	Type of Primary Schools	Villupuram
1	GPS (Government Primary School)	24
2	Private Primary Schools (PPS)	11
3	Private Aided School	3
	Total	38

Although we had a formal school questionnaire of 4 pages (give below for ready reference), we followed discussion mode with the headmaster or the principal teacher of the school and others associated with the school.

School Questionnaire (Tamil Nadu)

(For "Scaling up Services in Rural India" project by the Earth Institute, Columbia University sponsored by Hewlett Foundation.)

Village: _____ Tehsil: _____ District: _____ State: _____

Head of the school/principal: _____ Investigator: _____

Type of school: (A) Panchayat / District Panchayat / District Admn. / Private
: (B) Pre-primary / Primary/ Secondary/ Higher Secondary

Building : Own/Rented /Donated; Number of Rooms _____;
Total sq. feet: _____

A. Information Regarding Staff and Students in primary section (Stds. I to V) last year

Sl. No.	Particulars		Primary	Remarks
1	Number of students enrolled (Stds. I to V)	M		
		F		
2	Number of students with cash subsidy.	M		
		F		
3	Fees charged per student (Rs.)	M		
		F		
4	Number of Teachers	M		
		F		
5	Number of qualified Teachers	M		
		F		
6	Reduction in number of Teachers due to:	Death		
		Retirement		
		Resignation		
7	Number of Administrative			

	staff			
8	Salary bill of teachers per month (Rs.)			
9	Salary bill of Administrative staff per month (Rs.)			

B. Information Regarding Infrastructure in the primary school:

Sl. No	Particulars		No. of Units	Capital Cost / Unit (Rs.)	Recurrent and O&M Cost / Unit (Rs.)
1	Classrooms				
2	Blackboard				
3	Desk/Bench				
4	Chairs				
5	Toilet	Male			
		Female			
6	School Administration				
7	School mid-day Meals (Y/N)				
8	Transportation Facilities (Y/N)				

C. Information about costs incurred for students

Sr No.	Particulars	No. of Units	Recurrent and O&M Cost / Unit (Rs.)	Remarks
1	Textbooks			
2	Uniform			
3	School Supplies (Slate-pen, exercise books, pens, pencils etc.)			
4	Examination Related Cost			

D. Dropout and Completion Rates:

How many standards are there in the school? : _____

How many rooms are there in the school? : _____

E. Information Regarding Teacher's presence and working:

How many teachers stay in the village? : _____

How many teachers stay outside the village? : _____

What proportion of the year does the school normally function? :
20%/40%/60%/80%/100%; For how many days/ years? _____ days.

Are there multiple classes being handled by one teacher? Y/N

If yes, details: _____

Is the school managed by the Village Panchayat? : Y/N

If yes, are there any problems? Enumerate.

Will the situation improve if the management and oversight functions are shifted to District Panchayat / District Administration? Y/N

Explain.

- If it is a private school, syllabus and text-books are the same/different from the government schools.
- Is there a system of failing students in the Primary Section? Yes/No.
- Are there examinations in each Primary standard? Yes/No.
- What is your opinion on Teachers' Performance Appraisal?
Principal:

Teachers:

- What is your opinion about parents' attitude on the primary education of their sons and daughters here?
- Is there a specific bias against girls' education? Yes/No; Why?

- How the learning / educational requirements of migrants / nomadic tribes' children met? _____

Any special schemes for them? (Details):

**F. Information to be sought from Teacher's Training College/
Educational Authority:**

Particulars	Capital Cost per unit (Rupees)	Recurrent cost per unit (Rupees)	Norms
Teacher's pre-service training			
Teacher's in-service training			
Curriculum development			
Making a new Classroom			
Transport Facility			
Toilets			
Student-Teacher Ratio			
Mid-day Meal			
Others			

G. Investigator's Comments/ Observations/ Notes:

APPENDIX C

Content Analysis of Government Primary School Textbooks of Tamil Nadu

Standard / grade	No of books	Name of the Books	Pages including
I	4	Tamil English Maths Environmental Science	87 73 91 57
II	4	Tamil English Maths Environmental science	103 73 107 91
III	5	Tamil English Maths Science Social Science	126 95 137 109 121
IV	5	Tamil English Maths Science Social Science	97 89 105 91 101
V	5	Tamil English Maths Science Social Science	146 91 197 109 139

Tamil		
Standard	Content in brief	Observation
Standard I	Rhymes, stories and regional poems. Usage of objects, Basic Verbs, Reading and writing Tamil alphabets and number, Sanskrit letters adopted in Tamil. Value of money, Common Greetings. Identifying alphabets and number from pictures.	Importance given to learning of Tamil reading and writing rather than speaking.
Standard II	Regional rhymes and stories about morality, patriotism and self motivation. Listening and doing Adjusting ability. Group formation and learning. Pictorial representation of animals and vehicles, identifying pictures and writing the respective words.	Revision of class I with more of writing work for the students. Syllabus is relatively longer than the 1 st standard.
standard III	Wild animals, games, Introduction of Grammar, Comparative degree, colours and their Tamil names. Proverbs, History of Tamil Nadu, Life during Night, travelling, Regional Poetry, Counting.	Syllabus designed to enhance the thinking ability. Exercises are lengthy and elaborate. More efforts needed from the students.
Standard IV	Lessons based on conversation in known and unknown situations, developing, listening and presenting conversation. Poems of old literature or classic Tamil. Self learning method is introduced.	Basic writing skills are emphasized. A sudden increase in the difficulty level of the syllabus and the introduction of self learning can be difficult for the rural students.
Standard V	Classic Tamil poetry. Lessons covering regional historical conversations and Tamil history, Tamil Leaders and their sacrifices.	Emphasis on teaching loyalty towards Tamil state and the rights and duties. Certain degree of maturity of the students assumed.

English		
Standard	Content in brief	Observation
Standard I	Introduction to Alphabets and their pronunciations, simple rhyming words. Listening and repeating jingles, Common greetings, Human body parts, Responding to common questions, Picture identification along with their words.	Emphasis on pre-writing and pre-reading training. Comprehension of letters and elementary words for future usage.
Standard II	Simple words and sentences, rhymes. Simple commands and permissions, simple expressions and actions, Days of a week, name of objects. Small and capital letters.	Emphasis of developing basic communicating ability. No Tamil translations are given in textbooks and hence can be difficult not only for the students but also for teachers in the rural areas to understand.
Standard III	Understanding adjectives, vowels and consonants and their usage, Reciting rhymes with intonation, Learning to read with simple words, picture reading, Writing dictation, understanding and using punctuations. New words of different objects, reading simple dialogues and stories.	Introduction of writing through practice exercises of words, sentences. A marginal increase in the difficulty level with introduction of elementary grammar.
Standard IV	Longer stories and poems, Grammar lessons, use of conjunctions, phrases. Writing longer sentences, jumbled sentences. Quantities of things. Wild animals. Map reading.	Further improvement in reading and writing ability along with the understanding of grammar. Logically follows the earlier standard.
Standard V	More poems and stories. Essay writing. Making sentences. Use of adverbs, prepositions, singular and plural. Identifying colours, objects, behaviours and expressions. Learning about common tools. Class conversations with peers. Reading of newspaper headlines.	Significant increase in the level of difficulty. Greater efforts needed from students and teachers in rural areas.

Mathematics		
Standard	Content in brief	Observation
Standard I	Identifying, counting and writing numbers up to 99, counting days. Addition and Subtraction of one digit numbers. Recognizing coins.	Use of pictures for counting makes it easy for children to understand.
Standard II	Counting two digit numbers and Addition & Subtraction. Descending, Ascending order of two digit numbers Introduction to three digit numbers.	Exercises are simple enough and relevant. Problem solving through games. Rural background and examples not emphasized.
Standard III	Revision previous standard. Numbers and their words. Descending, Ascending order. Addition and Subtraction of 4 digit numbers. Division and Multiplication up to 2 digit numbers. Introduction of perfect squares of one digit numbers. Clock reading. Months of the calendar years.	Lengthy content. More efforts needed from the teachers and students in rural areas.
Standard IV	Numbers up to 10000 and problems of addition and subtraction. Units of measurement, area of square, rectangle, and triangle. Problems of time. Concept of interest.	The level of abstraction greater. Could be difficult for the students and teachers in rural areas to understand and communicate.
Standard V	Ascending and descending order of 4 and 5 digit numbers. Addition and subtraction of 3 and 4 digit numbers from 5 digit numbers, multiplication of two digit numbers with 5 digit numbers. Concept of profit and loss.	Exercises are heavy and lengthy. A good understanding of basics and fundamentals needed for the teachers to communicate.

Science		
Standard	Content in brief	Observation
Standard III	Introduction to senses, Identifying parts of a human face, colours Scientists and inventions, Vitamins and vegetables. Parts of plants, types of animals. Universe, the sun, the moon, lunar and solar eclipses. Geography and environment.	Basic understanding of the scientific concepts through use of pictures. Relevant exercises for all lessons for better understanding and memorizing. Emphasis on memory than understanding.
Standard IV	More about Parts of a human body (internal and external) i.e. lungs, heart, kidney. Scientists and inventions. Parts of plants and their importance, fertilization of the fruits and seeds. Herbivorous and carnivorous animals. Three states of matter. More on nature and environment, pollution – air, water and sound.	Revision of the earlier standard and increase in the details of the concepts. Logically follows from standard 3 textbooks. More abstract compared to the age of students particularly in the rural areas.
Standard V	Animals and plants living in water, reptiles. Concepts of electricity, gravitation, force, magnetic force. Sunlight and its importance. Uses of various inventions by scientists. Sun and its planets. Introduction to metals, mainly iron and allied products and fossil fuels such as coal. More on the parts of a plant (root, leaf, stem and flowers, fruits).	Content is vast. The level of details further increases. More efforts are needed from teachers and students in the rural areas.

Social and Environmental Science		
Standard	Content in brief	Observation
Standard I	Parts of human body. Cleanliness. Relationships (kinship), behavior with elders and respect. Identifying neighbors. Regional festivals. Looking after gardens, names of plants. Names of birds and animals and their younger ones. Water and its uses.	No separate textbook for science. Focus on basic understanding of social environment and some scientific concepts. Systematic in approach and Quite interesting and relevant for rural children.
Standard II	More about parts of body, keeping the body fit. Cordial relationship with neighbors, Regional and national festivals. Animals and their usefulness to human kind. Gardening and its uses. Non living things. Importance of shelter. Importance of cleanliness. Rain water, preserving water. Affects of population. Sky and celestial body. Introduction about public places i.e. banks, post office etc.	Increase in the amount of details. Further understanding of related concepts of social environment. Logically follows from Standard 1.
Standard III	Introduction to various layers of government system. Duties and functions of the local administration, police etc. Maps of state and India. Identifying the district in the state map and state in Indian map. Road maps of district. History of civilization, ancient cultures and living. Types of families (joint and nuclear). Functioning of banks, hospitals, post office etc.	Shift in focus from surrounding social environment to city, district, state and nation. Introduction to new concepts with increase in abstraction. Separate textbooks available for teaching science.
Standard IV	Detailed explanation on local government bodies. The Indian culture, art and music. Indian states and union Territories and their culture and traditions. Rights and duties of individuals. Importance of nature and its uses, Keeping environment clean, the climatic changes.	The focus is on understanding the basic history and geography of the nation. Logically follows the textbook of earlier standard.
Standard V	History of the British rule in India. Importance of independence and republic day. Leaders and famous personalities of India. Rights and duties of individuals. Modes of transportation.	A sudden change in the contents. A greater effort is required from the teachers to make the students understand.

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