FINANCING HUMAN DEVELOPMENT
MONOGRAPH SERIES

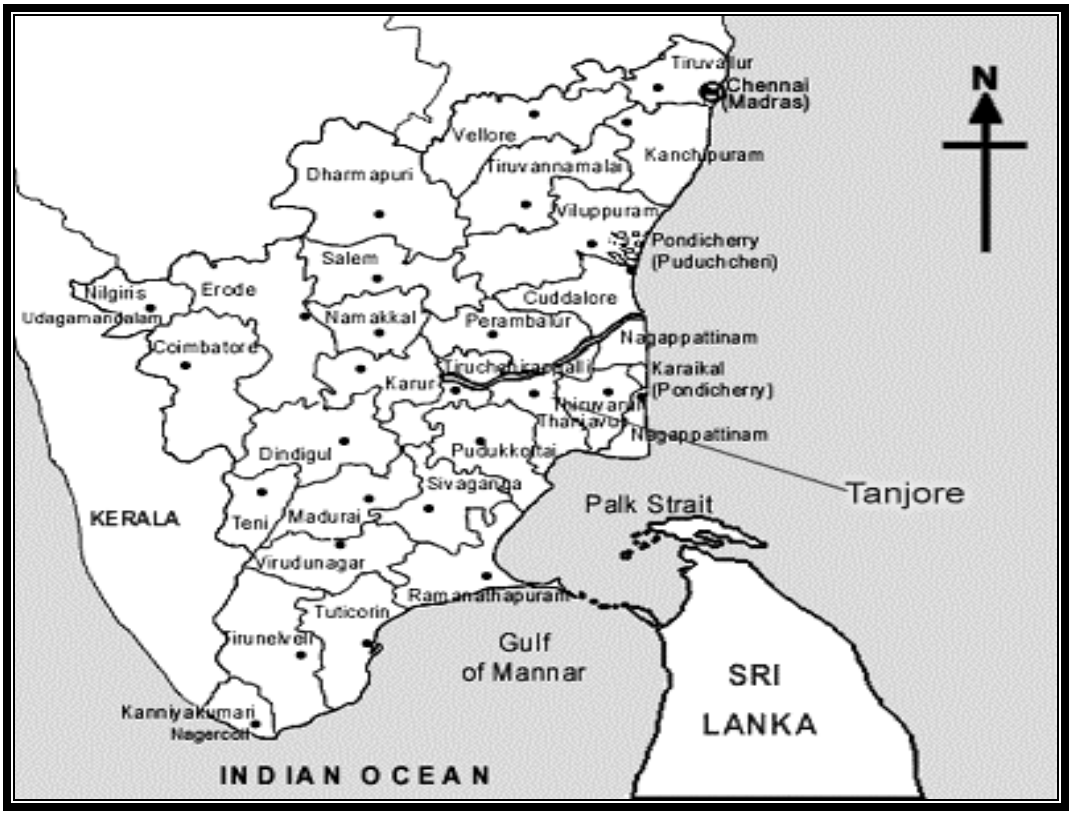
Financing Human Development in Tamilnadu: Consolidating and Building Upon Achievements

Tapas K. Sen
H. K. Amarnath
Mita Choudhury
Anit Mukherjee

National Institute of Public Finance and Policy
New Delhi

Financing Human Development in Tamilnadu: Consolidating and Building Upon Achievements

February 2008



Tapas K. Sen
H.K. Amarnath
Mita Choudhury
Anit Mukherjee

National Institute of Public Finance and Policy
New Delhi

Preface

This is the second study report prepared under the research project **Financing Human Development in India**, in progress at National Institute of Public Finance and Policy. This research project, in turn, is part of an umbrella programme being executed by the Planning Commission and sponsored by UNDP, India – **Strengthening State Plans for Human Development**.

The research for this study was carried out by a team led by Tapas K. Sen. Other members of the team included H.K. Amarnath, Mita Choudhury and Anit Mukherjee. Competent research assistance were provided by Sandeep Biswal, Narendra Jena, and Krishanu Karmakar. The Governing Body of the Institute does not take any responsibility for the contents of this monograph; such responsibility belongs to the authors only.

M. Govinda Rao
Director

Acknowledgements

This study reviews and makes financial projections for certain selected sectors that are considered important for human development in the state of Tamilnadu. The canvas is broad, and Tamilnadu is one of the eight states to be covered under the research project **Financing Human Development** within a given time period. Clearly, the parameters required a delineation of the issues covered, keeping in mind the focus of this project without missing the essentials.

The study team is happy to express its sincere gratitude to Seeta Prabhu and Suraj Kumar of UNDP India for the initial guidance provided to the team in defining the scope of the individual state studies in general and also specific suggestions for improvement of this particular study. Similarly, from the Planning Commission, R. Sridharan, Rajat Sachar, and Ragini Sahay have been highly supportive, for which we are grateful.

A study of this kind would not be possible without the complete co-operation of the government of the state concerned. In Tamilnadu, the Human Development Research Cell (HDRC) in the State Planning Commission was the nodal agency for facilitating work for this study and it fulfilled its role admirably. We express our deepest gratitude to the persons concerned in the HDRC – P.R. Bindumadhavan, Smita Nagaraj, Girija Vaidyanathan, T. Baskaran, T.V. Somanathan, G.N. Krupa, and Ravi Rajappan Pillai.

We also received the support of K. Gnanadesikan and his colleagues in the Finance department that greatly facilitated our work; our sincere thanks for the readily extended help.

We made demands on the time and patience of several other persons in various government departments like education, health, rural development, housing and water supply. They include T. K. Ramachandran, Thiru Tulsiraman, Thiru Pallaniswamy, S. Kannappan, R. Suryanarayanan, and many more. To all of them, named or not, we are extremely thankful for bearing with us.

Closer home, M. Govinda Rao has been a source of constant encouragement and support, while Swapna Mukhopadhyay read through two successive drafts, providing several comments for improvement. Also, Diwan Chand and Geeta Bhatnagar have been helpful with data from the Institute's database on state finances. Our earnest thanks to all of them. Editorial advice from Rita Wadhwa, and help in typesetting from Kavita Issar is gratefully acknowledged.

Besides those alluded to above, there have been a number of other persons who have helped in various ways; we have tried to do justice to the help and co-operation extended by so many by doing our best. Whether the end result indeed does justice to them or not is to be judged by the reader. It hardly needs mention that any error of omission or commission and any other shortcoming of this work is to be ascribed to the authors only.

Contents

List of Tables and Graphs

I. Introduction

Tamilnadu was ranked third in 2001 in terms of the human development index (Planning Commission, 2002) among 15 larger states of India. Its notional international ranking was 116 as compared to 132 for India as a whole. Clearly, it is now much closer to the national human development goals than most other states, and can in fact afford to think ahead beyond the basic objectives. However, there is little scope for complacency for two obvious reasons: (a) the relative position cannot be taken for granted without continuous attempts at consolidation of the past gains, and (b) the task of nurturing well-being of the people is a continuous one – improvement of the present position is always possible. In fact, the state goals as articulated in the state's Tenth Plan Document were in general more ambitious than those in the Tenth Plan Document for the nation, as the following selective table shows.

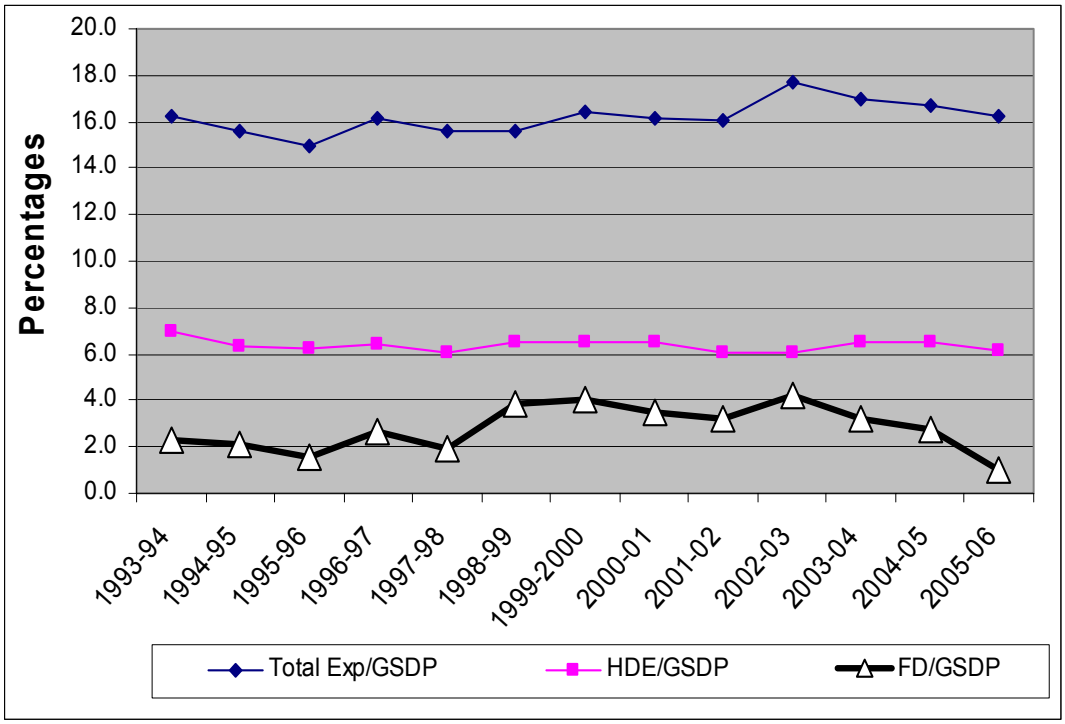
Table 1.1: Comparison of Selected Plan Objectives: India and Tamilnadu

Target Indicator	National Goal	State Objective
Poverty Reduction	Reduction by 5 percentage points by 2007 and by 15 points by 2012	Reduction by 11.12 percentage points (from 21.12 percent in 1999-2000 to 10%) by 2007 and complete elimination by 2012
Student Enrolment	All Children in school by 2003, all children to complete at least 5 years of schooling by 2007 (*both targets missed*)	Universalisation of education until class V by 2005, 100 percent retention of all enrolled children till age 14 by 2007
Literacy Rate	75 percent by end of Tenth Plan	80 percent by 2007
Infant Mortality Rate	45 by 2007 and 28 by 2012	28 by 2007
Maternal Mortality Ratio	200/lakh by 2007; 100/lakh by 2012	150/lakh by 2007; 50/lakh by 2012
Drinking water	Sustained potable water supply in all villages by end of Plan period	Making all habitations fully covered (regarding drinking water)
Gender Inequality	Reduction by at least 50 percent in identified indicators (wages, literacy rate)	Reduction by 50 percent in identified indicators (wages, health, education)

The state ranks seventh among the non-special category states in terms of per capita income in 1999-2000 prices and is ahead of the national average as per the latest Central Statistical Organisation data for 2005-06; considering the figures for 2004-05 in 1993-94 prices, it ranks sixth (with Kerala slipping to the seventh position), but falls below the national average. In any case, unless the distribution of income is extremely unequal – indirect evidence like the poverty

ratio does not indicate such extreme inequality – the level of income is not clearly a limiting factor for a vigorous drive for furthering human development.

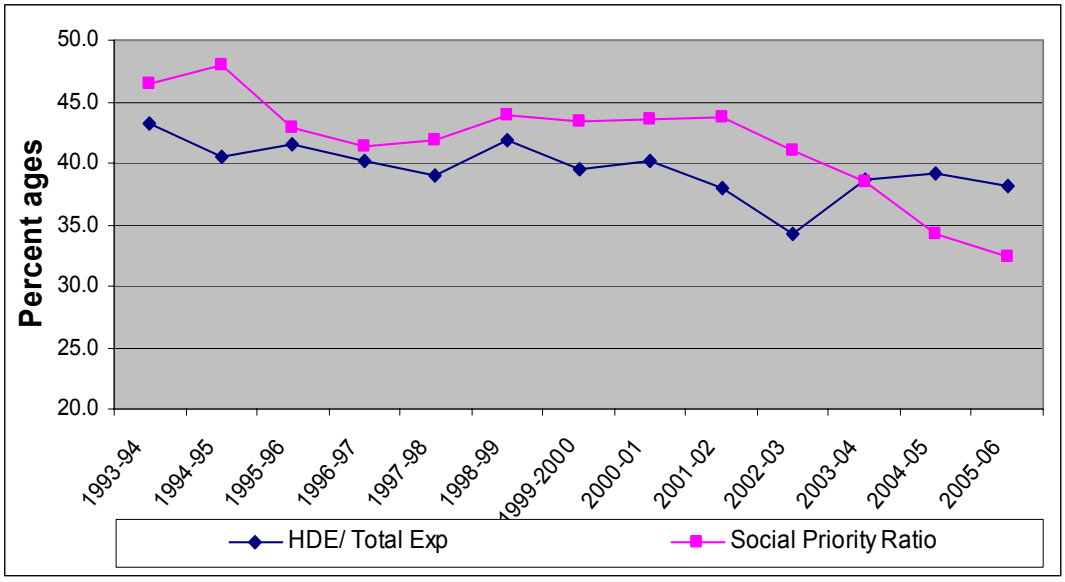
Figure 1.1: Macroeconomic Trends in Tamilnadu, 1993-94 to 2005-06



Source: *Finance Accounts* of Tamilnadu

During the 1990s, there were no major changes in the macroeconomic situation in Tamilnadu. The fiscal deficit increased slightly from 1997-98 until 2002-03, but has declined thereafter. Total expenditure has also been relatively stable between 15-18 percent of GSDP (Fig. 1.1). There was more or less a secular decline in the share of human development expenditure (HDE) both as a share of GSDP as well as in total expenditure until 1997-98; the trend has stabilised at around 6 percent of GSDP since then. The Social Priority Ratio (SPR), calculated as the share of human development expenditure going towards elementary education, primary health care, nutrition and water supply, however, has declined sharply in recent years (Fig. 1.2) i.e., since 2001-02, possibly as a result of lower requirement of expenditures on primary education as compared to those on secondary education and beyond.

Figure 1.2: Trends in Human Development Expenditure, 1993-94 to 2005-06



Source: *Finance Accounts* of Tamilnadu

The comparative magnitude of the various ratios pertaining to human development is provided in table 1.2. The share of expenditure on human development and total expenditure both in GSDP declined in 2005-06 from their 1993-94 levels. The per capita real expenditure on human development, however, increased by nearly 45 percent to Rs.1712 in 2005-06. Therefore, in the recent past Tamilnadu appears to have relied on higher growth in GSDP to increase per capita expenditure on human development sectors. However, attempts should be made to arrest further deterioration in the shares in view of the long-term goals of achieving higher levels of human development in the state.

Table 1.2: Macroeconomic Indicators for Human Development

Indicator	1993-94	2004-05	2005-06
HDE/GSDP (%)	7.00	6.53	6.17
HDE/Total Expenditure (%)	43.22	39.18	38.10
Per capita Real Expenditure on Elementary Education (Rs in 1999-00 prices)@	211	251	249
Per capita Real Expenditure on Human Development (Rs in 1999-00 prices)	1098	1700	1712

@: Excluding central transfers outside the state budget
Source: *Finance Accounts* of Tamilnadu

Public sector initiative, however, could be somewhat restricted because of financial constraints imposed by the state's public finances. That a state's

finances could be in serious problems despite reasonable growth in state income and a relatively high level of per capita income has been an observed fact of the late 1990s. States with per capita income higher than Tamilnadu (Punjab and Maharashtra) were also struggling with financial problems of the fisc. In line with the more or less general trend of finances of the states, the ***White Paper on Tamilnadu Government's Finances*** (2002) "delineates serious erosion in the fiscal stability of the state. The Government is increasingly becoming financially vulnerable…. Continued erosion in the fiscal health of Tamilnadu will not only reverse all the socio-economic gains made by the state in the last five decades but also impair the ability of the Government in discharging its basic duties." The public finances in most states, as in Tamilnadu, have recovered considerably since then, but there are additional considerations now that are relevant. Many states, including Tamilnadu, have passed their own Financial Responsibility legislations in line with the Union Government's *Fiscal Responsibility and Budget Management Act*. These legislations put a limit on fiscal deficit (hence debt financing of expenditures) and also limit revenue deficit to nil by the year 2008-09. Given that in most states a large part of the expenditures is committed expenditures of some sort (salaries, interest payments, loan repayments and other contractual payments), the discretionary expenditure for developmental purposes is not a large fraction of the total expenditures. Expenditures that were debt-financed in the past may cut into this also as a consequence of limits on fiscal deficit. Thus, Tamilnadu's overall economic progress could help obtain improvements in human development areas through its direct effects and other effects working through the behavioral linkages (e.g., removal of limitations on demand for schooling arising from extreme poverty), but there may be limits to the public sector's ability to push human development through additional public expenditures. Whether this can be construed as a serious constraint or not is examined later in this study.

In what follows, we first review the human development sectors in brief, the objective being to identify sectoral priorities and to make rough estimates of the additional cost of reaching the given objectives. The review also leads to some policy recommendations with respect to the individual sectors in the interest of efficiency. The linkages between economic growth, human development, and poverty alleviation are then explored in the context of the state's expenditures. We then proceed to make rough estimates of possible additional resource mobilisation and examine possibilities of reprioritisation of government expenditures. Finally, we summarise and conclude.

II. Education

2.1. Introduction

As per the Millenium Development Goals (MDGs), the following targets in education are proposed to be achieved by 2015:

- All children to complete a full course of five years of primary school.
- Eliminate gender disparity in primary and secondary education by 2005, and in all education by 2015.

The Planning Commission's goals, while in line with the MDGs, set stiffer targets to be achieved by the end of the 10th and 11th Five Year Plans.

- All children to be enrolled by 2003, and to complete 5 years of school by 2007.
- Reduction in gender gaps in literacy by at least 50 percent by 2007.

Tamilnadu has been one of the best performing states in India by each of the four yardsticks above. The Net Enrolment Ratio (NER) for primary education in 2006 has reached nearly 98 percent, with all districts in the state above 95 percent.[1] Only a small gap in terms of out-of-school children remains to be filled to achieve the target of universal elementary education.

In terms of gender parity, Tamilnadu's performance has been second only to Kerala among major states. In 2002, the overall girl-boy enrolment ratios in primary and upper primary levels were 92.9 and 92.3 respectively.[2] The situation is not much different in the rural areas, indicating that the expansion in enrolment has been broadbased. The achievement of MDG targets, therefore, is well within reach.

The shares of elementary education along with total expenditure on human development in the state's total expenditure have declined in recent years from their 1993-94 levels (Table 1.2). The per capita real expenditure on elementary education, after increasing from Rs.140 to Rs.215 in 1999-2000, dropped to Rs.156 in 2004-05.

The overall picture, however, masks important areas of focus for future policy emphasis. Although most of the state has high achievement of education indicators, substantial intra-state divergence remains. The difference between the highest and the lowest literacy districts (Kanyakumari and Dharmapuri respectively) is still nearly 30 percentage points. Moreover, comparison between

---

1 *See,* Mehta (2006), *State Report Cards*

2 *All India Education Survey (AIES), 2002* provisional tables.

District Primary Education Programme (DPEP) districts and non-DPEP districts within Tamilnadu reveals that the increase in literacy between 1991 and 2001 for the former has been nearly 14 percent, while for the latter it was around 10 percent.[3] These data put into perspective the importance of Centrally Sponsored Schemes (CSS) on closing the education gap among districts in the state.

Since the physical target in terms of the goals in elementary education are well within reach, the focus for future policy direction has to incorporate the long-term needs in terms of improvement in quality, better utilisation of resources in terms of its incidence on students (teaching and learning materials, introduction of ICT etc.), teachers (teachers' training, monitoring and accountability) and allocation across districts.

Given this current scenario and future priorities, the purpose of the present study is to identify ways to estimate the resource gap if any, possibilities for mobilisation of needed resources, and the optimal pattern of allocation and utilisation. To undertake this exercise, we look at the recent trends in education and social sector expenditure in Tamilnadu and analyse the aggregate expenditure from state budget. Further, we examine central government support under *Sarva Shiksha Abhiyan* (SSA) and its allocation across districts, private provision of education and the possibilities of decentralisation in order to improve the delivery of education services in Tamilnadu.

2.2. Structure and Administration of Elementary Education in Tamilnadu

Formal education system in Tamilnadu has a long history. The *Directorate of Public Instruction* (DPI) was established in 1854, and the *Board of Secondary Education* in 1910. Free and compulsory education was introduced in selected areas as early as 1924. After independence, several initiatives were started in order to increase enrolment and retention in school education. The first *Midday Meal Programme* began in 1956, later expanded in 1982. Free supply of uniform scheme was introduced in 1960, and free supply of textbooks was extended up to standard VIII in 1985. Consequently, Tamilnadu has had a headstart over other states when it comes to designing, planning, and implementing large-scale interventions in the nature of the *Sarva Shiksha Abhiyan*, which is currently underway.

In terms of the variety in school type, elementary education consists of *panchayat* union, government, government-aided institutions, as well as private-unaided, matriculation, anglo-Indian and central board schools. The first three are publicly funded, while the latter are purely private. It is to be noted that the *panchayats* were given responsibility of elementary education early on, and a decentralised system of management with state government oversight has been

[3] Mehta (2004)

in operation for several years. The teachers in *panchayat* union schools became state government employees in 1981, and their salaries are currently paid out of grants-in-aid (including school grants) to local bodies for elementary education from the state budget.

At the field level, the Chief Educational Officers (CEO) and District Educational Officers (DEO) are responsible for high and higher secondary schools, while the District Elementary Educational Officer is responsible for elementary and middle schools at the revenue district level. Monitoring is further decentralised to Assistant Educational Officers and Assistant Elementary Education Officers, each holding charge of around 100 schools in secondary and elementary education respectively. Government schools are administered directly by the *Department of School Education*. The inspector of anglo-Indian schools and the inspectors of matriculation schools supervise their respective categories as well. The CEO of each district is the in-charge of District SSA Implementation Society.

2.3. Achievements in Elementary Education in Tamilnadu

The performance of Tamilnadu in the field of human development, especially in elementary education, has been notable throughout the last decade. It has already achieved the goal of universal access to elementary education, with 100 percent of habitations covered by a primary school within 1 km radius. It is also close to achieving the target of universal enrolment and retention, and can now concentrate on improving quality.

As per the District Information System for Education (DISE) data, the net enrolment rate (NER) in elementary education in all districts is over 95 percent. The whole state has nearly achieved the goal of universal enrolment with the state NER at 99.28 percent for primary and 98.25 percent for upper primary levels. The primary dropout rate is below 2 percent, and the upper primary completion rate is 88.57 percent, which ranks among the highest in India.[4]

The Annual Work Plan and Budget (AWP&B) of 2007-08 indicate that only about twenty thousand students in the state remain out of school, either due to non-enrolment or due to dropout. With the significant reduction in the dropout rate and achievement of universal retention, expenditure on the remaining out-of-school children is going to be minimal, although the bridge courses and remedial teaching interventions need to be continued and funding provided out of the SSA budget.

[4] DISE, 2006.

2.4. Analysis of Budgetary Expenditure on Elementary Education

We have undertaken a detailed analysis of budgetary data on expenditure by the Department of School Education for 2000-01 and 2003-04. The two years correspond to major institutional change in the funding pattern for elementary education in India in general. The first year marked the end of the District Primary Education Programme (DPEP), phase II. In total, seven districts were earmarked for DPEP assistance in Tamilnadu in phases I and II, according to the criteria laid down in the DPEP project. Therefore, 2000-01 marked the transition phase from DPEP to the *Sarva Shiksha Abhiyan* (SSA), which started in 2002-03. The second reference year in our data marks the second full year of implementation of SSA in Tamilnadu and utilisation of funds received should have been optimised by then.

The methodology for the analysis for budget data is as follows. First, we mine the budget document for 2000-01 and 2003-04 and list out the expenditure by each scheme from the Department of School Education. We then separate out the expenditure falling exclusively under elementary education (budget head 2202.01). Thereafter, we categorise the expenditure under six broad heads: (i) Administration, Monitoring and Evaluation; (ii) Teacher Salaries and Other Professional Fees; (iii) Teaching Quality and Incentives; (iv) Direct Expenditure on Students; (v) Infrastructure; and (vi) Decentralisation.

Table 2.2 provides a comparative assessment of the expenditure on elementary education by the Department of School Education in Tamilnadu for 2000-01 and 2003-04. The first point to note is that the expenditure by the Department of School Education (excluding state's share of SSA) has *decreased* by about 10 percent from Rs.1881.31 crore to Rs.1678.64 crore. Even after including the state's share of SSA expenditure, the total expenditure on elementary education in Tamilnadu is Rs.1736.25 crore. This can largely be attributed to a reduction in the 'Teacher Salaries and Other Professional Fees' component by about Rs.200 crore between 2000-01 and 2003-04. However, as seen from tables 2.2 and 2.3, the total elementary education expenditure (budgetary + SSA) shows an increase of around 1.3 percent between 2000-01 and 2003-04.

Table 2.2: Analysis of Budget of the Department of Education on Elementary Education

Categories	2000-01		2003-04	
	Aggregate (Rs. lakh)	% of Total	Aggregate (Rs. lakh)	% of Total
Administration, Monitoring and Evaluation	5946.95	3.16	3709.60	2.21
Teachers Salaries and Professional Fees	177494.71	94.35	157246.79	93.68
Teaching Quality and Incentives	69.47	0.04	37.34	0.02
Direct Expenditure on Students	3972.82	2.11	6034.54	3.59
Infrastructure	0.00	0.00	337.52	0.20
Decentralisation	647.27	0.34	498.00	0.30
Total Expenditure	**188131.20**	**100.00**	**167863.79**	**100.00**

Source: *Budget Documents*, Government of Tamilnadu

While the overall structure of expenditure has remained largely the same in 2000-01 and 2003-04, there is a decline in the share of administrative expenditure from 3.16 to 2.21 percent of departmental education expenditure. What is of interest, however, is that the share of expenditure directly benefiting the students (mainly textbooks and uniform) has increased from 2.11 percent in 2000-01 to 3.59 percent in 2003-04. This has an indirect effect on household income, since textbooks, uniforms and stationery constitute a major share of private household expenditure on education for poor families.[5] This is a welcome trend which should have, and did continue in the subsequent years.

2.5. SSA Expenditure in Tamilnadu

The DPEP programme was scaled up to all districts in Tamilnadu under the SSA flagship programme from 2002-03 onwards. The initial year was utilised in setting up the implementation systems both at the headquarters and at the district levels. The funds for the SSA programme are channeled through the District Implementation Societies, under a 75:25 central and state sharing arrangement, which has continued until the end of the 10th Plan period. Therefore, apart from the state's contribution, the rest of the SSA funds are not reflected in the budget document. For our analysis, we have incorporated the total SSA resources, after deducting the state's contribution reflected in the budget as grants-in-aid to avoid double counting.

The impact of SSA expenditure can be analysed at two levels. The overall objectives of the programme is to support the resource needs of the states in ensuring universal access, enrolment and retention, as well as improve the

5 *NSSO Consumer Expenditure Survey*, various years.

quality of education. To do that, the SSA implementation uses the state education department machinery to execute the district-level plans. Therefore, the resources allocated under the SSA programme can be considered to be an additionality *vis-à-vis* the budgetary expenditure on elementary education by the state government.

Second, in terms of allocative efficiency of SSA funds, the share of expenditure going to educationally less developed districts should be correlated with their needs. The difference in completion rate, for example, between the highest achieving district (Dindigul) to the lowest (Nagapattinam) is nearly 35 percent. Although the magnitudes might be different, similar variation is seen in dropout and attendance rates as well.

To carry out the analysis based on the outlined framework, we have collected district-wise audited SSA expenditure for 2002-03 and 2003-04. Since the first year was utilised in setting up the structure of the implementation arrangement, we analyse both the budgetary support and allocative efficiency of SSA expenditure for 2003-04. We reclassify the SSA expenditure audit heads to harmonise them with the earlier analysis of budgetary expenditure categories. Care has been taken to match the function of the SSA expenditure by cross-checking the SSA planning and implementation manual. However, some discretion has been utilised in the assignment of particular categories.

The aggregate expenditure from the state budget and SSA is provided in table 2.3. In 2003-04, SSA expenditures (including the state's contribution) accounted for just over 12 percent of overall expenditure on elementary education in Tamilnadu. As discussed above, we have categorised the expenditure on SSA into the same six functions as in table 2.2. Comparing the share of budgetary support and SSA expenditure across categories, we observe that states still spend the major proportion in three categories – Administration, Monitoring and Evaluation; Teachers Salaries and Professional Fees; and Direct Spending on students. The SSA expenditure almost wholly finances extra allocation for improvement in teaching quality and for upgrading school infrastructure. Moreover, decentralisation in the management of the education system has been strengthened through the activity of the block and cluster resource centres. Nearly 90 percent of grants at the sub-district level now come from SSA resources. This figure is going to be higher if we classify school and teacher grants, which is now under the *Teaching Quality and Incentives* category, under the decentralisation category.

Table 2.3: Budgetary and SSA Expenditure on Elementary Education: 2003-04

Categories	Total Budgetary Expenditure			SSA Expenditure	
	Budget + SSA (Rs. lakh)	Aggregate (Rs. lakh)	% of Total	Aggregate (Rs. lakh)	% of Total
Administration, Monitoring, and Evaluation	4686.99	3709.6	79.15	977.39	20.85
Teachers Salaries and Professional Fees	160000.61	157246.79	98.28	2753.82	1.72
Teaching Quality and Incentives	2440.54	37.34	1.53	2403.2	98.47
Direct Expenditure on Students	8205.34	6034.54	73.54	2170.8	26.46
Infrastructure	11503.93	337.52	2.93	11166.41	97.07
Decentralisation	4750.73	498.00	10.48	4252.73	89.52
Total Expenditure	**191588.14**	**167863.79**	**87.62**	**23724.35**	**12.38**

Source: Budget Documents, Government of Tamilnadu; Audit Reports, State SSA Society

This disaggregated picture throws some light on the nature of the resource allocation under SSA. Our analysis indicates that SSA expenditure is largely a complement to the state budgetary support to education. While teacher salaries, administration and direct transfer to children in terms of text books and uniform still rest with the states, the extra funds provided by SSA is mostly targeted at improving teaching quality and in upgrading school infrastructure, through a process of decentralised planning. Further data and analysis is required to ascertain whether the extra spending has had an effect on the quality of education in Tamilnadu.

2.6. Financial Projections for Achieving Universal Enrolment and Retention

As stated earlier in the report, Tamilnadu is close to achieving universal elementary education in terms of both enrolment and completion, provided it manages to put all out-of-school children into formal education, and reduces the dropout rate in primary and upper primary education. Construction and upgrading of existing school facilities in terms of classrooms, drinking water, and toilets are needed to provide adequate infrastructural support. This would also require appointment of teachers as per the norms of human resource adequacy. Assuming that the government has to finance this process completely, the extra expenditure for universalisation, has to be calculated keeping in mind the gaps in: a) infrastructure, school facilities, and teachers; and b) the quality of education. The second gap is important, one of the major objectives of SSA is to

ensure that extra resources are allocated for training and incentives for teachers, which is presumed to lead to better quality learning in the long run.

2.6.1. Costing the Gaps: Additional Resource Requirement

2.6.1.1. Unit cost based on budget and enrolment data

We calculate the unit cost of provision of school education, and use it to estimate the cost of bringing the out-of-school children into formal elementary education system.[6] The information on enrolment disaggregated by government and privately financed education is necessary for this purpose. Table 2.6 provides the details of enrolment of students in primary and upper primary sections by type of school management for the year 2002-03, the latest year for which such information is available to us. The total number of elementary students for this year was 98.77 lakh. Out of this, less than 15 percent of students were in substantive fee-paying private institutions (Private Unaided, Matriculation, Central and Anglo-Indian schools), and the rest were directly or indirectly financed by the government to a large extent through its budget and through SSA funds.[7] The unit cost of provision of elementary education works out to be Rs. 2068 per student in government funded institutions, taking into account only the recurring part of the total budget and SSA expenditure from table 2.3.

Table 2.6: Enrolment by Type of School Management, 2002-03

Type of School	Class I - V	Class VI - VIII	Total	Share
Panchayat Union	3122049	424115	3546164	35.90
Municipal Corporation	323500	92950	416450	4.22
Government Schools	270454	1388371	1658825	16.79
Private Aided Schools	1712418	1145405	2857823	28.93
Private Unaided Schools	4126	39285	43411	0.44
Matriculation Schools	783810	361053	1144863	11.59
Anglo-Indian & Central Board	75604	133951	209555	2.12
Total	**6291961**	**3585130**	**9877091**	

Source: *Report on Public Instruction, 2002-03*, Government of Tamilnadu

6 The total target also includes the projected dropout from 2004-05 until 2008-09.

7 There are practically no private unaided schools in rural areas as per a survey conducted at the instance of UNICEF (Tilak and Nalla Gouden, 2006). The fact that almost two-thirds of the enrolment is in schools not directly under the administration of the state government also raises the question of effective implementation of policies adopted at the state level; the transmission would largely depend on the actual administrative control of the state on the two relevant categories of schools – *Panchayat* Union and Private aided.

Once we obtain this unit cost of provision, we calculate the total resources required for universalisation by considering the total number of children to be mainstreamed. As noted above, the current dropout rate is less than 2 percent for primary and less than 5 percent for upper primary stages. The *Annual Workplan and Budget of 2007-08* estimates that the current number of out-of-school children is just over one lakh. Assuming that close to universal retention is achieved in the next plan period, the total expenditure is estimated to be Rs.21.35 crore, at 2003-04 costs.

2.6.1.2 Costing of infrastructure and personnel gaps from state-level needs assessment

The needs assessment exercise for additional infrastructure and personnel required for achieving universal elementary education is detailed in the Annual Work Plan and Budget (AWP&B) of the State Project Directorate of SSA in Tamilnadu for 2007-08.

The infrastructure gap is calculated from table 4.10 of the AWP&B, taking only the essential components such as school buildings, additional classrooms, drinking water and toilet facilities. This is the baseline cost for providing a minimum learning environment for children.

In terms of teachers, the AWP&B gives details of the number of teachers by district for the last five years for primary and upper primary levels. What is interesting to note is that between the years 2005-06 and 2006-07, the number of upper primary teachers has doubled, while the number of primary teachers has reduced by twenty thousand. Therefore, the minimum benchmark for pupil-teacher ratio (PTR) has already been fulfilled for upper primary, but remains above 40 for primary. Our indirect calculation points to a shortfall of just over twenty four thousand teachers which has to be covered over the next few years.

Details of the additional components disaggregated by fixed and recurring cost categories is provided in table 2.7. As per the unit costs given in the SSA norms, the total requirement works out to be Rs.329.97 crore.

Table 2.7: Additional Requirement for School Facilities and Personnel

(Rs. lakh)

Category	Gap as on 31.3.2007	Unit Cost	Requirement 2007-08 to 2011-12
I. Infrastructure Cost			
Primary School	153	3.3	505
Upper Primary School	320	4.95	1584
Additional Classrooms	8117	1.65	13393
Drinking Water Facility	473	0.15	71
Toilets	793	0.2	159
Sub-total Infrastructure			*15712*
II. Teacher Cost			
Teachers - Primary	24048	0.63	15150
Teachers - U Primary	-	-	-
III. Out of School Children	103261	0.02	2135
Total Cost			**32997**

Source: State Project Directorate, AWP&B 2007-08

2.6.1.3 Costing of improvement in educational quality

One of the SSA goals is to 'provide useful and relevant elementary education' to all children in elementary schools. To this end, apart from management costs, teachers' salaries and civil works, other components of SSA expenditure are designed to improve the level of learning of the children. This includes training of teachers, grants for improvement of school environment and for teaching and learning materials (TLM), introduction of computers, special provision for innovative activities, provision of textbooks, improvement of syllabus etc.

In terms of cognitive ability, as per the all-India learning achievement survey carried out by NUEPA in 2002, Tamilnadu ranks high among Indian states in language and mathematics scores. The dispersion in learning across the state, however, is also substantial. The gap between the highest and lowest district for language is nearly 60 percent, while that for mathematics is nearly 55 percent. On one end of the spectrum, Dindigul and the Nilgiris are in the top 5 districts for both subjects, while Thiruvallur is among the bottom 5. This differential indicates both the magnitude of the gap, as well as its persistence across subjects taught in school.

Table 2.8: Quality of Education (% achievement in Grade 5 Maths) - Top 5

States	Language		States	Mathematics	
	Mean %	**Std.Dev.**		**Mean %**	**Std.Dev.**
Manipur	73.39	13.60	Manipur	74.46	19.71
Tamilnadu	*71.09*	*17.50*	Bihar	62.62	23.25
West Bengal	70.67	15.31	West Bengal	60.11	21.94
Mizoram	66.91	10.38	*Tamilnadu*	*58.37*	*22.81*
Bihar	65.22	18.95	Arunachal Pradesh	53.47	18.61
All India	**58.57**	**18.30**	**All India**	**46.51**	**21.30**

Source: MHRD, 2002

A separate survey carried out by an educational NGO, *Pratham*, showed that only around 60 percent of the students in standard 1-2 in Tamilnadu are able to recognise alphabets in Tamil.[8] Less than 50 percent of students in standard 3-5 can solve subtraction problems, one of the lowest rates in India. While the ostensible argument for private schools is that the *quality* of education is much superior, in reality that might not be the case. The *Pratham* survey indicates that the difference in learning levels in reading and mathematics between government and private schools is only around 5 percent in standard 5, but is higher at initial levels (standard 1 and 3). This may indicate a systemic lacuna in terms of quality of education imparted to elementary students in Tamilnadu, especially at the start of school going period. Urgent attention to improve quality of education in primary schools is recommended.

Imparting of education presupposes that the teacher is present and teaching. However, recent research on teacher absenteeism indicates that nearly 25 percent of teachers in India are absent on any given day.[9] The latest *Pratham* survey of 2007 found that Tamilnadu fares well as far as teacher attendance is concerned. On average, 96 percent of teachers were present in primary schools at the time of the visit, and more than 90 percent were present in elementary schools (standards 1 – 8). The student attendance is also satisfactory – more than 90 percent of enrolled students attended both primary and elementary schools.

There are several interventions in the design of SSA that incorporate a focus on quality improvement through the involvement of main stakeholders – the teachers and the community. These include: (i) Teachers' training; (ii) Teacher grants; (iii) School grants; (iv) Maintenance and repair of schools; and (v) Research, monitoring, and evaluation. Table 2.9 provides the details of the allocations under these heads from the audited SSA statements of expenditure and the AWP&B for the period 2002-03 to 2005-06.

8 *Pratham*, 2008.
9 Kremer, M. *et.al*. 2004.

Table 2.9: Expenditure for Improving Quality of Education

(Rs. crore)

	2002-03	2003-04	2004-05	2005-06	Rate of Growth
Teachers' Training	2.29	6.77	20.31	27.45	35.11
Teacher Grants	5.84	7.62	8.13	10.88	21.59
School Grants	5.00	7.04	10.02	10.13	25.65
Maintenance and Repair	13.44	16.01	18.53	20.19	12.56
Research and Evaluation	0.93	2.59	5.10	6.04	18.43
Total	**27.50**	**40.03**	**62.10**	**74.70**	**42.91**

Source: Audited Statement of Expenditure and AWP&B, various years

Table 2.10: Projected Expenditure, 2006-07 to 2011-12

(Rs. crore)

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Teachers' Training	50	68	91	124	167	500
Teacher Grants	16	20	24	29	35	123
School Grants	16	20	25	32	40	133
Maintenance and Repair	26	29	32	36	41	164
Research and Evaluation	8	10	12	14	17	61
Total	**116**	**146**	**185**	**235**	**300**	**982**

Assuming the continuation of the present methods of teaching[10], to arrive at the quantum of resources needed for improving quality, we have used the average growth rate of the components between 2003-04 and 2005-06 to project the expenditure until the end of the 11th Plan (Table 2.10). Although the expenditure on physical infrastructure and teachers will go down after the ongoing initial phase of expansion of enrolment, the resources needed to improve quality has to be maintained in the long run.

2.6.2. Projection of Total Resource Requirement

The total resources required for filling the gaps in enrolment, infrastructure, human resources, and quality between the next year and the end of the 11th Plan period is summarised in table 2.11. This is done by consolidating the resource needs from tables 2.7 and 2.10 where we costed both the infrastructure and the quality improvement needs. According to our calculations, nearly Rs. 1300 crore of extra resources will be required given the current level

[10] There are several alternative models of teaching, particularly at the pre-primary and primary level. Most of these do not require substantive additional resources, and some are designed to cost less. It is beyond the scope of this study, and our competence, to even meaningfully assess these alternatives. However, mere commonsense would place the teachers and their interest in, and approach to teaching at the centrestage.

of achievement of Tamilnadu in various aspects of elementary education, and keeping in mind the future priorities.

For infrastructure and new teacher appointment, the additional expenditure will be proportional to the gap to be covered, and therefore reduces over time. However, there is a more than proportional increase in other items, most significantly, teacher training.

Table 2.11: Additional Expenditure for Elementary Education, 2007-12

(Rs. crore)

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Infrastructure and Facilities	47	47	31	16	16	**157**
Additional Teachers	45	45	30	15	15	**152**
Teachers' Training	50	68	91	124	167	**500**
Teacher Grants	16	20	24	29	35	**123**
School Grants	16	20	25	32	40	**133**
Maintenance and Repair	26	29	32	36	41	**164**
Research and Evaluation	8	10	12	14	17	**61**
Total	**209**	**239**	**247**	**266**	**331**	**1290**

Source: Calculated from tables 2.7 and 2.10

Table 2.12 provides a summary of the resource requirement exercise. We have projected the baseline budgetary figures for elementary education from the *Finance Accounts* of the state budget using the rate of growth from 1999-00 to 2003-04. As noted above, the actual state government expenditure on elementary education net of its contribution towards SSA has been declining, the shortfall being made up in the last three years by the injection of SSA funds. The sharing formula between the central and the state governments during the 11th plan period (2007 -12) has been worked out as follows. For the first two years, the ratio will be 65:35, for the third year 60:40, the fourth 55:45 and the terminal year (2011-12), the resources for SSA will be split 50:50. We have taken this variation in the sharing ratio over the 11th Plan period into consideration while calculating the sources of finance for the remaining resource need.

Table 2.12: Projected Requirement for Elementary Education, 2007- 2012

(Rs. crore)

	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Department of Elementary Education	1597	1561	1525	1490	1456	**7629**
Department of SC/ST Welfare	313	330	347	366	386	**1741**
Midday Meal Programme	548	578	611	645	681	**3063**
Additional Expenditure under SSA (Infrastructure and Quality)	209	239	247	266	331	**1290**
State's share	73	84	99	120	165	**540**
Centre's share	136	155	148	146	165	**750**

Note: Sharing formula calculate as per the circular issued in October, 2007.

It is evident that the midday meal scheme will require a substantial outlay of over Rs. 3000 crore during the next five years. However, the additional expenditure on closing the infrastructure and human resource gap under SSA is well within the means of the State. The new sharing formula is to some extent beneficial to Tamilnadu as it reduces the government's burden of expenditure by around Rs.100 crore compared to the originally envisaged 50:50 sharing for the entire 11th Plan period.

2.7. Decentralisation of Elementary Education in Tamilnadu

After the enactment of the 73rd and the 74th Amendment of the Constitution for empowerment of rural and urban local bodies, the responsibility for elementary education was transferred to the *Gram Panchayats* and municipal corporations. As noted in section 2, Tamilnadu already had a decentralised system of education service delivery even before the constitutional amendment came into force.

The essence of decentralisation is to transfer functions, finance and functionaries to the local bodies, so that policy formulation and implementation can be according to local needs and priorities. This is thought to lead to better use of resources and efficient delivery of services. In the context of decentralisation experience in India, it has been noted that while the functions have been transferred to the lower tiers of government through constitutional mandate, the devolution of finances and functionaries is yet to take place. This is true for elementary school education as well.

Primary education in Tamilnadu has historically been decentralised. Teachers were under the control of local bodies which paid their salaries utilising

grants received from the government. However from 1981 onwards, the teachers in *panchayat union* and municipal schools were regularised as state government employees. There is also some history of community participation and involvement in school education through the village education committees and in the mid-day meal scheme.

There are two related issues – political and economic – which need to be understood to analyse decentralisation in elementary education. The first, given the political consensus and direction towards decentralisation, would be the way to make best use of this process to achieve the goals of universal elementary education. The second one would be, from the point of view of efficiency of service delivery, the mapping of particular responsibilities against administrative tiers. The two can be combined using an activity matrix by analysing the following components:

- **Unbundling:** What are the key functions and activities in elementary education?
- **Criteria analysis:** How to decide who should provide which functions and activities?
- **Status quo analysis:** How are functions and activities performed currently?
- **Recommendations:** What are the changes required in the current system?

To develop a plan for decentralisation in Tamilnadu, table 2.13 unbundles the broad functions and activities in elementary education and maps the current roles and responsibilities among the various tiers of government. The broad functional categories for elementary education are:

- **Standard setting:** Decisions regarding syllabus; textbooks; infrastructure norms; achievement standards
- **Planning:** Physical expansion; quality improvement (overlap with SSA)
- **Asset creation:** Social capital; Physical capital
- **Operation – non teacher:** Beneficiary selection for targeted programmes; textbook and other teaching-learning equipment purchase; maintenance
- **Operation - teacher:** Hiring; assignment; training; salary; performance evaluation; dismissal
- **Monitoring and Evaluation:** School functioning; teacher attendance; students' learning achievement

Table 2.13: Matrix of Currently Undertaken Functions and Responsibilities

Broad Function	Responsibility						
	Central Govt	State Govt	District	Block	Village		Service Provider (School)
					Gram Panchayat	Community Groups	
Standards Setting	not systematic						
Planning							
`1Asset Creation							
Operation – Non Teacher							
Operation – Teacher							
Monitoring and Evaluation	not systematic						

Source: Pritchett and Pande (2005)

It is quite evident that the function and responsibility map is loaded towards the left hand side of the matrix, i.e., towards the higher levels of government. While the SSA has pushed some elements of planning to the district level and further to the block level, there is ample discretion at the state level to override district priorities. Due to economies of scale, standard setting and monitoring/evaluation should ideally be done at the highest level. Unfortunately, in most cases, both the activities remain weak, especially M&E. Although Tamilnadu has a better inspection system than most states, it is still possible to shift at least some monitoring functions to lower levels of government and user groups like the village education committees (VECs).

Merging the principles of public finance and accountability, the activity matrix may look like table 2.14. The map is distributed more evenly in this case, and some tiers of government have been assigned more responsibility keeping in mind the framework of the SSA as well. *Gram Panchayats*, schools and community groups have to be assigned more responsibility, especially in discretionary, transaction intensive and non-technical functions such as teacher and non-teacher operations, asset creation, and monitoring, being supported by district and block level functionaries. Planning should ideally be at the district level, similar to the model being followed by the SSA. High economies of scale activities such as standard setting and performance evaluation can be concentrated and strengthened at the state level. There are instances where even higher level functions have included information and interaction between community groups and state-level policymakers (Parana state in Brazil). In Tamilnadu this can be experimented with since the CBOs are already in place in villages.

Table 2.14: Activity Matrix of Recommended Functions and Responsibilities

Broad Function	Responsibility						
	Central Govt	State Govt	District	Block	Village		Service Provider (School)
					Gram Panchayat	Community Groups	
Standards Setting							
Planning							
Asset Creation			**Support**				
Operation – Non Teacher			**Support**				
Operation - Teacher			**Support**				
Monitoring and Evaluation							

The most significant departure from present practices should be regarding the appointment, assignment, and oversight of teachers. As of now, the salaries of teachers are being paid out of grants-in-aid given by the state government to the local bodies, both urban and rural. However, the appointment and assignment are done by the state and district levels, which lead to insufficient oversight and weak monitoring framework. Therefore, as far as the teachers are concerned, there has been a *de jure* delegation of function to the lower tiers of government, but without *de facto* devolution of finance and functionaries. Since Tamilnadu elementary education sector is overwhelmingly public, this dichotomy needs to be resolved forthwith.

2.8. Universalisation and Beyond: Future Challenges for Tamilnadu

2.8.1 Public and Private Shares in School Education

According to the *Pratham* survey, just over 18 percent of children in the age group 6 – 14 go to private schools in Tamilnadu. This is lower than that estimated for other states like Kerala and Goa, with similar enrolment levels, and much less than Punjab, Haryana, and Uttar Pradesh. In terms of our calculations, the percentage of students going to purely private institutions (private unaided + matriculation + anglo-Indian + central board schools) is 14.15 percent for elementary and 15.30 percent for higher levels (Table 2.15). There is no clear jump in the share of private schools across levels of education, although a small

increase is noted between secondary (IX – X) and higher secondary (XI – XII). The education sector in Tamilnadu, therefore, is overwhelmingly public, and much of the future expenditure both in terms of enrolment and in improving quality has to be incurred by the state government.

Table 2.15: Level-wise Share of Private Enrolment

Level	Total	Private	Share
Primary (I - V)	6291961	863540	13.72
Upper Primary (VI - VIII)	3585130	534289	14.90
Secondary (XI - X)	1727381	243173	14.08
Higher Secondary (XI - XII)	959196	167966	17.51
Total Elementary (I - VIII)	9877091	1397829	14.15
Total Secondary (IX - XII)	2686577	411139	15.30
Ratio (Elementary to Secondary)	*0.27*	*0.29*	

Source: Directorate of School Education, Government of Tamilnadu

However, there are several areas where the private sector can contribute in a significant way towards the objective of universalisation, by means of innovative institutional mechanism within the ambit of the SSA and beyond.

- Residential schools for never-enrolled and dropout girl students from poor communities are envisaged as part of *Kasturba Gandhi Balika Vidyalaya* (KGBV) sub-scheme under SSA. Some of these schools are functioning in Tamilnadu, run by NGOs involved in girls' education. This scheme can be scaled up to reach out-of-school girl students, and extended to the secondary level to reduce chances of dropout after the elementary stage.

- Community participation is a cornerstone of the SSA design and implementation. Given sufficient training and capacity improvement, the community can help in mobilising out-of-school children, supervision of maintenance works, enforcing accountability of teachers and contributing extra resources. No significant expenditure has taken place until now under SSA funds in Tamilnadu for training of communities. In terms of decentralisation and increasing accountability, participation of communities can be used as a strategic tool.

- A portion of expenditure under SSA is earmarked for innovative activities and computer education. There is significant scope for participation of corporate entities and NGOs in the supply of hardware and manpower. Apart from improving quality of learning, these activities generate enthusiasm among students and parents, translating into higher number of years in school.

- School and teacher grants can be pooled together to generate economies of scale in sourcing advanced teaching and learning equipment if available at concessional rates from corporations. These can be channeled through local NGOs, and can also involve self-help groups (SHGs).

2.8.2. Absorbing the Increase in Elementary Enrolment

According to the child census of the Ministry of Human Resource Development (MHRD), there were 8,31,532 children out of school in Tamilnadu as of January, 2003. The latest figure has come down to nearly just over one lakh in 2006-07. This means a net addition of nearly three-quarters of a million children into elementary education stream over the last three years. While SSA commitment is to provide opportunities for elementary education until the age of 14, there has to be a long-term strategy to absorb the extra students into the higher education level also.

The ratio of enrolment in secondary to elementary education is only about 0.27, which means that the secondary level at the current capacity can only cater to about 27 percent of the current primary level enrolment. Assuming there is no excess capacity in secondary schools, universal elementary completion and secondary transition rate, our calculations show that in Tamilnadu, an extra 2.3 million students will be in the secondary cohort (IX – XII) in 2009 -10. The current capacity can only cater to half of the age 7 to 11 cohort which was in primary school in 2002-03. At the same unit cost as elementary education (which is clearly the lower bound), the total expenditure to accommodate the number of students would be nearly Rs. 475 crore per year.

2.9. Policy Recommendations

- State government's budgetary expenditure on elementary education has declined in absolute value in the recent past due to the decrease in the salary bill for teachers. The share of education in total budgetary expenditure should at least be stabilised, if not increased, to focus on improving quality of education.

- There is wide variation in the number of dropout children as well as in completion rates in elementary education across districts. For better targeting, the SSA outlay for backward districts should be enhanced from the current levels. Now that the major civil works (a component of SSA - additional classrooms, school facilities, BRCs, CRCs) are completed, additional expenditure should focus much more sharply on the lagging districts.

Box 1 : Recommendations of an Earlier Study on Primary Education in Tamilnadu

- School-based management, redefining the role of the headmaster/ headmistress (HM) as a leader with enhanced administrative, decision-making, supervisory and public relations role; adequate capacity building for the purpose.
- Sharper definition of the role of Block Resource Committees (BRCs) and Assistant Education Officers (AEOs), who play a major role in the system; the former should be responsible for instructional support and be involved in teacher monitoring, while AEOs be responsible for school monitoring.
- Teacher monitoring and accountability be placed at the community level, with performance appraisal by BRC Supervisor, HM and VEC.
- Strengthening of DIETs.
- Redesigning teachers' training with flexibility for local variations, content decided in consultation with teachers, HMs, BRC officials and AEOs; short, one day programmes for specific 'difficult-to-teach' topics can be thought of; design should keep in mind actual teaching environment.
- Teachers' training should be more participatory, and giving due importance to multigrade teaching methods.
- Standardised assessment of students in class V (random sample of schools in each district) every four years to assess progress.

Source: Grover, Singh, and Stromquist (2002).

- Some degree of decentralisation in teacher appointment should be considered, with local bodies being more involved in the process to ensure accountability.[11] The districts may be allowed to appoint teachers directly from a state-wide recruitment pool, creating a district teacher cadre. This can be particularly effective in areas with high number of out-of-school children and high dropout rate. The move towards mainstreaming of the former and decrease in the latter would necessitate appointment of new teachers in these districts. The district education administration can decide

[11] A previous study (Grover, *et.al.* 2002, *see* Box 1) also identified decentralisation in some areas as needed, among other things.

on the assignment of teachers to areas where the student-teacher ratio is high.

- The allocation for training and capacity building of School Management Committee and Village Education Committee members should be increased from their current low levels. There is a large scope for operationalising the monitoring and oversight functions of these school and village-level institutions.

- Tamilnadu offers huge potential for enhancing the involvement of the private sector, especially in upgrading the quality of education in government institutions. The government can play the role of a co-financier and a facilitator in the process. Some steps in this direction are already underway through the introduction of ICT in the curriculum, in collaboration with private educational foundations. Private organisations can also be enlisted in the effort by the state government to enhance the reach of EDUSAT facilities linking schools in remote areas. Higher quality education in government schools will complement the upgrading of the facilities already underway through SSA, and will help achieve the goal of universal enrolment and completion of elementary education. Another area with potential for involvement of the private sector is the mainstreaming of dropouts and bringing into the system never-attendees. Educational NGOs with highly focused activities in this area can be supported by the government to run bridge courses and prepare such students for conventional courses.

- The state government must plan ahead for the large increase in secondary school enrolment predicted in the next five years. At a conservative estimate, it is likely to cost nearly Rs.500 crore extra per year. While upgrading of upper primary schools to secondary schools is an option, the state government can also give incentives for the private sector to participate in the capacity expansion.

There are several areas that we have not discussed above in any detail. Some recommendations in the Grover, Singh, and Stromquist study referred to in the last footnote in such areas are summarised in box 1 for ready reference.

III. Health

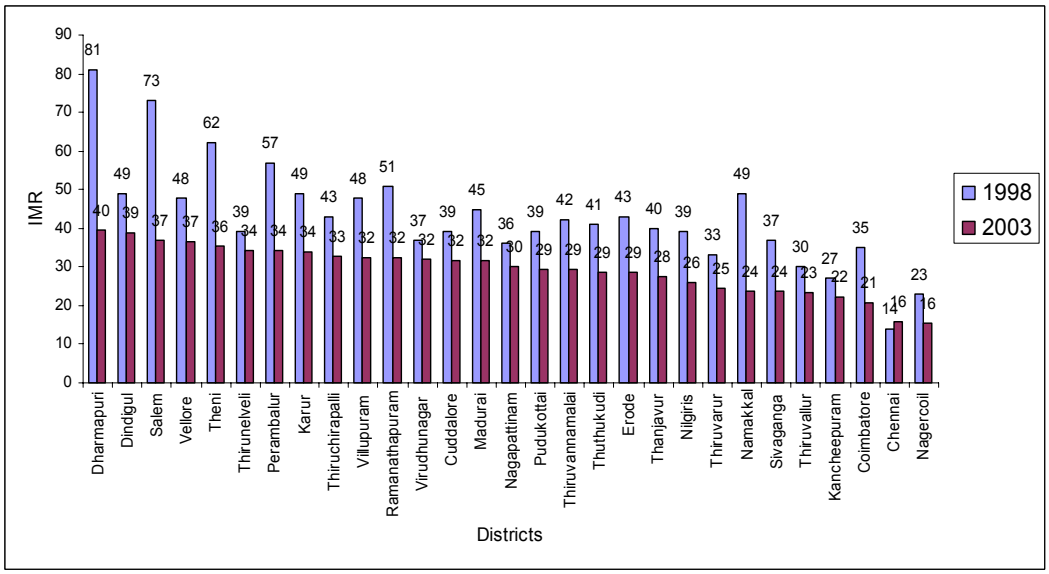
This section analyses the achievements of the health sector in Tamilnadu and tries to identify the areas which require particular attention of policymakers. It also provides rough estimates of additional resource requirements at the state level for improving the performance of the health sector, discusses the distribution of public spending across sectors, its effectiveness and benefits accruing to different groups of people and tries to draw policy conclusions on financing the health sector in the state.

3.1 Policy Goals and Achievements in the Health Sector

3.1.1 Mortality

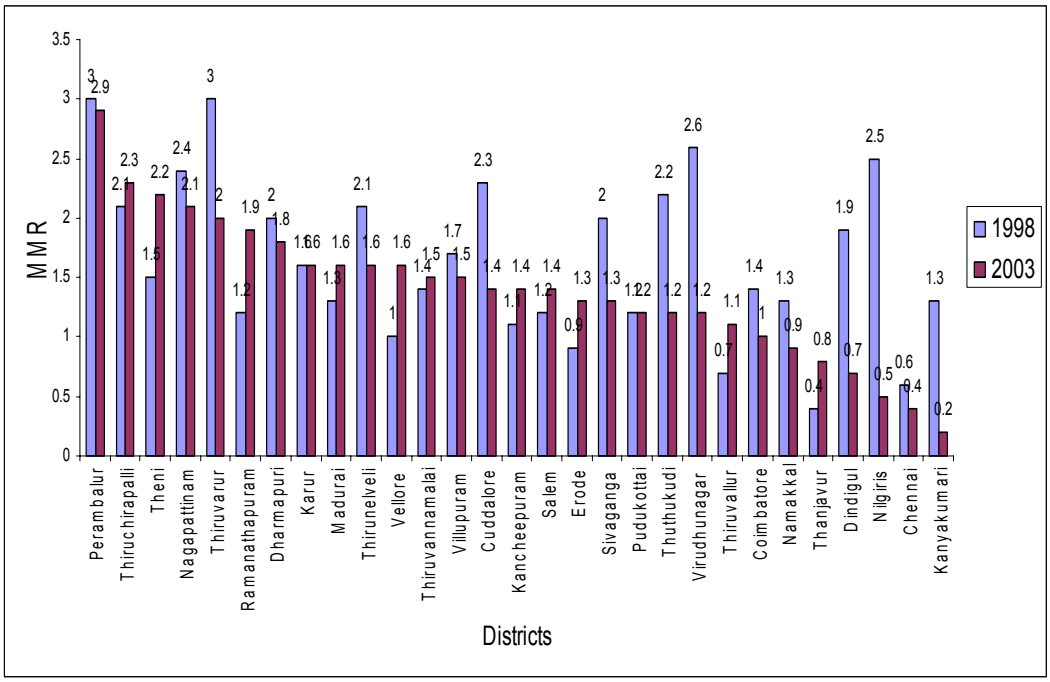
National and state health policies have set targets primarily for two mortality indicators: the infant mortality rate and the maternal mortality rate. Data on infant mortality rate (IMR) in Tamilnadu are obtained from two sources: the Sample Registration System (SRS) and the Vital Events Survey (VES) conducted by the state. Estimates based on data from these two sources vary considerably. In general, estimates of IMR from the VES indicate a much lower IMR in the state (30.1 in 2003) than the SRS (43 in 2003). The estimate of IMR from the National Family Health Survey conducted in 1998-99, was midway between the SRS and VES values for the same year.

Figure 3.1: Infant Mortality Rate (IMR) in Districts of Tamilnadu, 1998, 2003



Despite the differences in estimates, it is clear that Tamilnadu has made significant strides towards achieving goals in respect of IMR. Even if one goes by the most conservative estimates (SRS), the state has already achieved the 10th Plan target for IMR and, given the past rate of reduction of IMR, is also likely to attain the goals set out by the National Health Policy (NHP), National Population Policy (NPP) and the National Rural Health Mission (NRHM) (Table 3.1). It is notable that some of the districts with high IMR in the state have recorded remarkably high decline in IMR in the recent past (Figure 3.1). At the past rate of decline in the high IMR districts, the state is likely to meet the state-level medium term goal for IMR.

Figure 3.2: Maternal Mortality Rate (MMR) in districts of Tamilnadu, 1998, 2003



In terms of maternal mortality rate (MMR), although the state has already achieved the 10th Plan target, it is yet to achieve the goal set out by the NHP, NPP and NRHM (Table 3.1). It is particularly noteworthy that the state has recorded only a marginal decline in MMR in recent years; from 1.5 per thousand live births in 1998 to 1.4 per thousand live births in 2003 (VES 1998, 2003). Estimates based on maternal audit carried out in the state, however, indicate a maternal mortality rate of 1.1 in 2003, which significantly improves the probability of meeting the targets set out by the NHP, NPP and NRHM. Also, while the state as a whole is close to the 10th Plan target, there were districts where MMR was more than 2 per thousand live births in 2003 (Figure 3.2) and in some of the districts, MMR has actually increased between 1998 and 2003 (Figure 3.2). The state-level medium term goal of MMR, which is more ambitious than the national

level goals, seems difficult to reach unless immediate measures are taken to this end.

The state is however close to reaching many of the 'output' goals related to maternal mortality. The state has already achieved or is close to achieving the targets on institutional deliveries, safe deliveries, and providing at least three antenatal checkups (ANC) (Table 3.2). However, there is some slack in administering two doses of tetanus to pregnant women. Reproductive and Child Health Programme data for 2002-04 show that only 86.3 percent of pregnant women were administered two doses of tetanus (Table 3.2). Also, the state appears to be lagging behind the goals regarding the provision of iron and folic acid (IFA) tablets/syrup. In 2003, only about 24.7 percent of pregnant women reported to have received adequate IFA tablets/syrup (RCH Survey 2002-04). It may be noted that the extent of anaemia is particularly high among women in the state. Figures from NFHS 1998-99 indicate that a higher proportion of women suffered from anaemia in the state than that in India as a whole. Various policy documents at the state-level also point towards a high level of anaemia among pregnant women in the state.[12] Ensuring adequate iron supplements to pregnant women could be important in reducing MMR in the state.

It is notable that the fertility rates in Tamilnadu are around the national level targets (Table 3.1). Given the low fertility rates and the high percentage of institutional deliveries and antenatal checkups among pregnant women, malnourishment reflected in anaemia among women in the state is likely to be the major factor contributing towards the relatively high MMR in the state. Targeting malnourishment appears important for reaching the state-level goal of reaching an MMR of 0.5 by 2012. Besides, malnourishment is not only an important determinant of maternal mortality, it is also closely linked to neonatal mortality, which constitutes more than two-thirds of the infant mortality in the state. Reducing malnourishment could therefore be important for reducing both maternal and infant mortality in the state.

12 *Policy for a Malnutrition Free Tamilnadu 2002*. Departmental Policy Note on Health and Family Welfare 2003-04.

Table 3.1: Achievement of Tamilnadu with Regard to Various Goals for IMR

Indicator	Millenium Development Goals (MDGs)	National Health Policy (by 2010)	10th Plan (by 2007)	National Population Policy (by 2010)	National Rural Health Mission (NRHM)	Medium Term Goals for Tamilnadu (by 2007)	Status in Tamilnadu	Change between 1998 and 2003
Infant Mortality Rate		30 per 1000 live births	45 per 1000 live births 28 per 1000 live births (by 2012)	Below 30 per 1000 live births	30 per 1000 live births	28 per 1000 live births	37 per 1000 live births (SRS 2005) 30.1 per 1000 live births (Tamilnadu State Vital Events Survey 2003)	10 (by SRS) 13.3 (by VES)
Under-five Mortality Rate	Reduce by two-thirds, between 1990 and 2015						10 per 1000 live births (SRS 2003)	6.1 between 1991 and 2003
Maternal Mortality Rate	Reduce by three quarters, between 1990 and 2015	1 per 1000 live births	2 per 1000 live births 1 per 1000 live births (by 2012)	Below 1per 1000 live births	1 per 1000 live births	1 per 1000 live births by 2007 and 0.5 per 1000 live births by 2012	1.4 per 1000 live births (Tamilnadu State Vital Events Survey 2003) 1.1 per 1000 live births (maternal audit 2003)	0.1 (by VES)
Crude Birth Rate			21	21		15	18.3 (SRS 2003) 17.8 (Tamilnadu State Vital Events Survey 2003)	
Total Fertility Rate			2.3	2.1			1.9 (SRS 2003)	

Table 3.2: 'Output' Goals Related to Maternal Mortality in Tamilnadu

Indicator	National Health Policy (by 2010)	Tenth Plan (by 2007)	National Population Policy (by 2010)	National Rural Health Mission (NRHM)	Medium Term Goals for Tamilnadu (by 2007	Status in Tamilnadu	Change between 1998-2003
Percentage immunised against all vaccine preventable diseases		100	100			92.1 (RCH 2002-04)	0.6
Percentage of at least 3 ANC		90	100			96.1 (RCH 2002-04)	
Percentage received IFA for 3 or 4 months		100	100			(RCH 2002-04) Consumed 1 IFA tablet regularly 81 % Consumed 2 or more IFA tablets regularly 10.6 % Received adequate IFA tablets/syrup 24.7 %	
Percentage received two doses of TT		100	100			86.3 (RCH 2002-04)	
Institutional deliveries (%)		80	80		95	86.1 (RCH 2002-04) 92.3 (Departmental Figures, 2003-04)	7.3 percentage points
Deliveries by trained persons (%)			100			89.2 (RCH 2002-04)	6.8 percentage points
Percentage of pregnant women suffering from Anaemia					50 by 2007 and 40 by 2012	60 in 2000 (National Nutrition Monitoring Bureau)	

3.1.2. Morbidity

Data on prevalence of various diseases and mortality due to these diseases in the state are limited. The only source of information on the incidence of diseases in the state is through the cases reported in different health facilities. These data are available only for diseases that are targeted through disease control programmes at the national level. An important limitation of these data is that they deal with only cases that are reported in public health facilities. As a result, these data tend to underestimate incidence of diseases and incidence of deaths due to diseases. As data refer only to reported cases, the extent of under-estimation may also vary across different diseases and over the years.

It may be noted that at the national level, many of the goals relate to mortality due to specific diseases. The reported number of deaths through various diseases at the state level is either very small (as in malaria and dengue) or unreported (as in filariasis) (Table 3.3). Given the problem of under-estimation in data, it is difficult to analyse achievements of the state in terms of reducing mortality due to specific diseases. It may, however, be reasonably assumed that trends in reported incidence of these diseases and trends in actual mortality due to these diseases will be correlated. Given that, we analyse achievements of the state in terms of goals related to the incidence of various diseases. The number of new cases reported in the state (Table 3.4) is used as a proxy for the incidence of various diseases at the statelevel.

Table 3.3: Reported Number of Cases and Deaths due to Selected Diseases in Tamilnadu, 2000-03

Year/ Disease	Malaria		Japanese Encephalitis		Dengue		Leptospirosis	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
2000	43053 (7)	1	116 (0.02)	17	81 (0.01)	1	1801 (0.29)	-
2001	31551 (5.1)	0	119 (0.02)	18	816 (0.13)	8	2196 (0.35)	-
2002	34523 (5.5)	0	126 (0.02)	28	376 (0.06)	2	1232 (0.20)	8
2003	43604 (6.8)	0	163 (0.03)	36	1610 (0.25)	9	3634 (0.57)	3

***Note**:* Figures in parentheses indicate the new cases reported per 10,000 population
***Source**: Health Information of India*, various years and *Performance Budget*, Department of Health and Family Welfare, 2005-06

Table 3.4: Number of New Cases of Selected Diseases Detected in Tamilnadu, 2000-03

Year/ Disease	Microfilaria	Tuberculosis	Leprosy	Acute Diarrhoeal Diseases	Cholera
2000	1338 (0.12)	24533 (37)	47350 (7.6)	62405 (10.1)	1183 (0.2)
2001	1007 (0.09)	23589 (81)	32251 (5.2)	58733 (9.4)	1442 (0.2)
2002	775 (0.07)	24346 (84)	24767 (3.9)	68528 (10.9)	1251 (0.2)
2003	415 (0.04)	36104 (88)	16051 (2.5)	61846 (9.7)	414 (0.1)

Note: For microfilaria, figures in parentheses indicate the proportion of positive cases of microfilaria to the total number of persons examined. For tuberculosis, figures in parentheses indicate cure rate. For others, figures in brackets indicate the new cases reported per 10,000 persons.
Source: *Health Information of India*, various years and *Performance Budget*, Department of Health and Family Welfare, 2005-06

Of the vector borne diseases targeted at the National level, information is available on the incidence of malaria, filaria, dengue, Japanese encephalitis and kala-azar. The reported number of cases of malaria, dengue and leptospirosis in Tamilnadu in the last four years have fluctuated (Table 3.3). If these figures are used as a proxy for incidence, it is clear that there has not been any significant reduction of morbidity due to these diseases in the last four years and that the state is far off from the national goals with respect to reduction in incidence of these diseases. In the case of Japanese encephalitis, the reported number of cases has steadily increased over the years. This may, however, be owing to improvement in reporting of cases. In terms of filaria, at the past rate of reduction, the state may reach the goal set out by NHP and NRHM.

Tamilnadu was the first state in India where HIV/AIDS was detected, and it remained a high-prevalence state until 2005. Targeted interventions have reduced the prevalence of HIV to less than 1 percent in ante-natal care (ANC) surveillance. However, there are pockets of high prevalence in districts such as Namakkal, and the threat of HIV/AIDS has still not diminished.

It is well known that the incidence of vector borne diseases is very closely linked to conditions of water supply and sanitation. In this context, it is important to note that conditions of sanitation in Tamilnadu are worse than in India as a whole. As per data from *Census, 2001*, 35.2 percent of households in Tamilnadu had a latrine in their houses; corresponding figure for India as a whole was 36.4 percent. Relatively poor conditions of sanitation in the state could be a major factor resulting in high incidence of vector borne diseases in the state. Much of the policy focus for sanitation at the national level has been on providing toilets to households in rural areas. It must be noted that nearly 74 percent of the malaria cases in Tamilnadu occur in urban areas of which about 70 percent are in Chennai.

However, data suggest that inadequate sewerage or open defecation is not the cause for the high incidence of malaria in Chennai. As per *Census, 2001*,

about 90 percent of households in Chennai had latrines within the house and about 83 percent of households had closed outlet for wastewater. Also, data from Chennai Water Supply and Sewerage Board, suggests that 97 percent of the population in Chennai is covered by sewerage facilities. Storage of water by individuals/households which act as breeding source for mosquitoes is argued to be the major causes of malaria in the district (*Performance Budget*, Department of Health and Family Welfare, 2005-06). If so, improvement in regular water supply becomes important as it can obviate the need for storage of water in large scale. Recent outbreaks of other vector-borne diseases like dengue and chikanguniya further underline its importance.

Census 2001 data reveal that nearly 65 percent households do not have latrines and nearly 22 percent of households do not have access to safe water supply within or near premises. The information on access to safe drinking water varies from one source to another. Annual Report of the Ministry of Rural Development, GoI states that all the rural habitations are fully covered under safe drinking water. *National Habitation Survey*, 2003 shows that only 35 percent of the rural habitations are fully covered under safe drinking water supply. As per the Tamilnadu Water Supply Board, in 2006, 67 percent of rural habitations are fully covered by safe drinking water supply. The differences could be due to definitional differences or coverage. In any case, it appears that at least around a quarter of the households need to be provided with safe drinking water; efforts should be made to cover the entire population in the partially covered habitations with adequate water supply.

Sewerage and sanitation is the service that is complementary to water supply, as also critical determinants of health status of the population, particularly with respect to morbidity. A very small part of the rural population has access to any drainage system and healthy sanitation facilities. Major government expenditures for sanitation are under two schemes: *Total Sanitation Campaign* (a centrally sponsored scheme) and *Nammadu Grama*, a state-sponsored one. Financial and material assistance is given for construction of toilets under these two schemes. The major work on drainage in rural areas is being carried out under other schemes such as *Sampoorna Grameena Rozgar Yojana* and *Sampoorna Grameena Swarozgar Yojana*. With an expenditure of Rs 5.45 crore, nearly 32,650 toilets have been constructed in 2003-04 in Tamilnadu. The beneficiaries under the total sanitation campaign are the SC, ST and backward communities.

Apart from the vector borne diseases, National-level policies target the reduction of tuberculosis, leprosy, blindness and AIDS. In the case of tuberculosis, Tamilnadu has been able to achieve the NRHM target of 85 percent cure rate (Table 3.6), but will have to maintain it. There has also been a significant reduction in the number of new cases of leprosy reported in the state (Table 3.4). At the past rate, the state is also likely to meet the goal in terms of reduction of leprosy related morbidity. There are however no data available on

the prevalence of blindness at the state-level. Also, lack of comparable data over the years for AIDS makes it difficult to compare incidence of AIDS to the targets.

It is also important to monitor incidence of acute diarrhoeal diseases (ADD) and cholera in the state. In the case of both of these, data suggest that there has not been any substantial decline in the reported number of new cases in the recent past. One of the major reasons contributing to ADD in the state is the lack of universal access to safe drinking water.

3.2 Estimating Requirement of Resources

Achieving targets in the health sector in Tamilnadu requires substantial additional intervention primarily in terms of providing nutritional supplements, universal access to safe drinking water, improving conditions of sanitation and meeting gaps in infrastructure and manpower. Most of the other health concerns are largely being attended to by the government and need only normal continuation.

To target malnourishment, additional resource requirement is estimated for providing nutritional supplements to all malnourished children in the age group of 0-6 years, anaemic adolescent girls in the age group 10-19 years, and pregnant and lactating mothers.[13]

For 0-6 year old children, the number of children in this age group in 2004 is first estimated using data on population of the same age group from past Censuses. Data on the proportion of moderately and severely malnourished children in the state (provided by the Department of Women and Child, Govt. of India) are then applied to this child population to arrive at the number of children requiring nutritional supplements in 2004. The government norms (under ICDS) for providing nutritional supplements to malnourished children at the rate of Rs. 2 per child per day for moderately malnourished and Rs. 2.70 per child per day for severely malnourished children for 300 days in a year are then used to estimate the total requirement of resources for providing nutritional supplements to malnourished children in the age group of 0-6.

For nutritional supplements to anaemic adolescent girls, 60 percent of the projected population in the age group of 10 to 19 is multiplied by the Government prescribed rate of Rs. 2.30 per adolescent girl per day for 300 days to arrive at the estimate. For pregnant and lactating mothers, we use the crude birth rate and the projected population to arrive at the total number of pregnant and lactating mothers and use the same rate as in the case of adolescent girls to arrive at the resource requirement. The total additional resource required (over and above the expenditure in 2003-04) for all the three categories is about Rs. 379 crore.

[13] It is pertinent to note here that a recent study finds the commitment to nutrition in Tamilnadu in recent times to be less than in the past. *See,* Heaver (2002).

Apart from providing supplementary nutrition, it is important to ensure that all pregnant mothers receive adequate IFA tablets/syrup and are administered two doses of tetanus injections. It must be noted that the major cause of lower consumption of IFA tablets/syrup in Tamilnadu (as in many other states) is primarily due to lower acceptability of these tablets among women in rural areas. Keeping this in view, the central government has introduced an *ayurvedic* substitute of iron tablets in the RCH drug kit. Similar steps are also being taken up by the state government. Assuming that the replacement of IFA tablets/syrup by *ayurvedic* drugs can be done at negligible additional cost, we do not add any additional resource requirements for providing iron supplements. Similarly, the cost of administering two doses of tetanus to 13.7 percent of pregnant women (86.3 percent of pregnant women are currently covered), is about 0.1 crore. Together, the cost of providing nutritional supplements and ensuring adequate iron supplements and tetanus doses to pregnant women is approximately Rs. 379 crore.

Information from *Census, 2001* was used to estimate the resource requirements for providing access to safe drinking water to all households in the state. For rural areas, we considered households that got water from a tap, hand pump or tubewell located within a premise or nearby, as having access to safe drinking water. As per information from the Department of Drinking Water Supply, Government of India, per capita cost of covering rural population with safe drinking water is about Rs. 1200 per capita for providing piped water supply. At this rate, for the rural areas, we estimate the requirement of capital investment of about Rs. 993 crore.

For urban areas, information from *Census, 2001* on the coverage of population by safe drinking water was combined with per capita cost of water supply schemes in urban areas provided by the Planning Commission, Government of India, 1983 (updated to 2003-04 prices, amounting to Rs. 1780 per capita) to estimate the resources required for providing water supply to the entire population in urban areas. This amounts to Rs. 939 crore. Together, the total requirement of resources for providing water supply to the entire population was estimated to be about Rs. 1932 crore.

It must be noted here that this requirement of resources only ensures coverage and not adequate supply of water in the state. As per the Tamilnadu Water Supply and Drainage Board, on average, only about 30 lpcd of water is supplied in the rural areas as compared to the norm of 40 lpcd that needs to be supplied. Similarly, the average quantity of water supplied in the urban areas of the state is about 70 lpcd as compared to the norm of 110 lpcd for corporations, 90 lpcd for municipalities and 70 lpcd for special village *panchayats*. Even in the city of Chennai where the quantity of water that needs to be supplied as per the national norm is about 135 lpcd, only about 90 lpcd is supplied. The issue of augmenting the availability of water is a broader issue that is not covered here.

Similarly, resources required to provide toilet facilities to all households in the state was estimated using census information on latrines to estimate the number of households having toilet facilities. Households having toilet facilities were defined as those which had any latrine within the premise. Assuming a unit cost of Rs. 1000 to construct a toilet (based on information from Ministry of Rural Development) we estimate the capital cost of providing toilets to be about Rs. 919 crore.

For improving health infrastructure in the rural areas, we focused on the national norms for provisioning of rural health infrastructure. National norms suggest the provision of at least one sub-centre per 5000 population, one primary health centre (PHC) per 30,000 population and one community health centre (CHC) per 1,20,000 population in plain areas. We used these norms to examine the adequacy of physical health facilities in rural Tamilnadu.

The structure of health facilities in Tamilnadu differs from most other Indian states. The state does not have CHCs, but has some upgraded PHCs which are comparable to CHCs. The state however has a number of *taluk* and non-*taluk* hospitals at the sub-district level which are not there in most other states. The number of SCs, PHCs and CHCs existing in the state, their requirements as per norms and the gaps are shown in table 3.7.

As per information provided by the state government on capital and recurrent cost of building new SCs and PHCs, the capital cost of building new SCs, PHCs and upgraded PHCs is about Rs. 63 crore. To this, if one adds the cost of replacing rented buildings of SCs and PHCs by government buildings, the capital cost increases to Rs. 230 crore. The additional recurring cost that would be incurred in these facilities is about Rs. 20 crore each year.

Additionally, a minimum of Rs. 46 crore of recurring expenditure needs to be incurred annually in the existing SCs, PHCs and upgraded PHCs if these were to fill up the vacant posts of medical officers, staff nurses, nursing assistants, male health workers, pharmacists, lab technicians and radiographers. Data provided by the Directorate of Medical and Rural Health Services on vacancies of manpower in 125 categories of staff in district hospitals, *taluk* hospitals, non-*taluk* hospitals and administrative staff shows that an additional Rs. 22 crore would be spent as recurrent expenditure annually if these vacancies are filled up.

Apart from medical personnel, equipments in public health facilities may not be adequate and therefore additional capital investments may be required. However, very little information on the current state of equipments in public health facilities is available. Some information on the current state of equipments in rural health facilities can be obtained from the facility survey conducted in selected facilities in every state by International Institute for Population Sciences (IIPS) in 2002-03. The survey examined the availability of ten equipments (infant

weighing machine, adult weighing machine, deep freezer, vaccine day carrier, BP instrument, autoclave, MTP suction aspirator, labour room table equipment, steam steriliser drum and refrigerator) in selected PHCs in Tamilnadu and found that less than 25 percent of facilities had MTP suction aspirator and steam steriliser drum, while less than 15 percent had refrigerators. Recently, with the development of Indian Public Health Standard norms for SCs, PHCs and CHCs, most states are carrying out detailed facility surveys in their state. Once information from these facility surveys is received, the additional cost of maintaining equipments in SCs, PHCs and CHCs as per IPHS standards can be added.

The additional resources required on medicines in the state are estimated by using information from the 60th round of NSSO survey conducted in 2004. The NSSO survey provides information on the number of outdoor patients in 15 days prior to the survey who availed 'free' medicines, paid 'partially' for medicines and paid 'fully' for medicines in various health facilities in the state. An earlier round of the NSSO survey (52nd round) showed that nearly 90 percent of free medicines availed by outdoor patients in rural areas and about 82 percent in urban areas of the state were vide government facilities. Using this information, our estimates indicate that of the 28 percent of outdoor patients who access public health facilities, about 21 percent received free medicines in 2004.

Using information on expenditure on medicines in the state, we estimate the additional resources required to provide free medicines to the remaining 7 percent of outdoor patients, who currently do not receive free medicines. With improvement in equipment and supply of medicines, we may expect that some people below the poverty line who now access non-governmental sources will shift to government facilities. To accommodate these people we further increase expenditure on medicines by 10 percent, adding up to 17 percent in total. This adds up to a total of about Rs. 182 crore. With about Rs. 100 crore spent towards medicines in the state in 2003-04, increasing the supply of medicines will cost an additional Rs. 82 crore per year.

Together, the total additional requirement of expenditure (over and above the expenditure incurred in 2003-04) on health, family welfare, water supply, and nutrition is shown in table 3.8. These estimates show that the state needs to augment capital expenditure on these sectors by Rs. 2200 crore and revenue expenditure on these sectors by Rs. 664 crore.[14] Assuming no major change in the position since 2003-04, these estimates can be applied to the next five years with adjustments for price changes.

[14] The state is reported to have managed to economise substantially on the public cost of free medicine supply after reorganisation of the system with centralised purchase *See,* Lalitha (2005).

Table 3.5: Goals Related to Morbidity

Indicator	Millenium Development Goals (MDGs)	National Health Policy (by 2010)	Tenth Plan (by 2007)	National Population Policy (by 2010)	National Rural Health Mission (NRHM)	Status in Tamilnadu
HIV	Have halted by 2015 and begun to reverse the spread of HIV/AIDS	Zero-level growth rate by 2007	Achieving zero level increase of HIV/AIDS prevalue by 2007			
TB, malaria and other vector and water borne diseases	Have halted by 2015 and begun to reverse the incidence of Malaria and other major diseases	Reduce mortality by 50 percent	25 percent reduction in morbidity and Mortality due to malaria by 2007 and 50 percent by 2010 (NHP 2002)		Dengue and Japanese encephalitis mortality reduction rate 50 percent by 2010 and sustaining at that level until 2012, For malaria, mortality reduction rate 50 percent upto 2010, additional 10 % by 2012	6.8 cases of malaria, 0.07 positive cases of microfilaria, 0.03 case of Japanese enchephalitis, case, 0.57 case of leptospirosis and 0.25 case of dengue per 10000 population (2003)
Prevalance rate of blindness		0.5 percent				
Leprosy prevalence rate					Reduce from 1.8/10000 in 2005 to less than 1/10000 thereafter	1.5 per 10000 in 2003-04
Kala azar		Eliminate 100 percent	0 level incidence by 2007 and annual reduction rate of at least 20 percent using 2001 as the base year		Kala azar mortality reduction rate :100 % by 2010 and sustaining elimination until 2012	
Filariasis		Eliminate lymphatic filariaris 100 percent (by 2015)			Filaria/microfilaria reduction rate: 70 % by 2010, 80 % by 2012, and elimination by 2015	

Table 3.6: Output Goals Related to Morbidity

Indicator	National Health Policy (by 2010)	Tenth Plan (by 2007)	National Population Policy (by 2010)	National Rural Health Mission (NRHM)	Status in Tamilnadu
Tuberculosis DOTS services				Maintain 85 percent cure rate between 2005-2012	86 percent in 2003
Malaria		ABER (annual blood examination rate) over 10 percent (annual parasite incidence): 1.3 or less			
Cataract operation				Increasing to 46 lakh per year until 2012	
HIV		80 percent coverage of high risk groups through targeted interventions, 90 percent coverage of schools and colleges through education programmes, 80 percent awareness among the general population in rural areas, reducing transmission through blood to less than one percent, establishing at least one voluntary testing and counselling centre in every district, scaling up of mother–to-child transmission activities up to the district level			

Table 3.7: Availability, Requirement and Gap in the Provision of SCs, PHCs and CHCs 2003-04

	Sub-centres (SCs)			Primary Health Centres (PHCs)			Community Health Centres (CHCs)			*Taluk* and non-*taluk* hospitals (nos.)	CHCs to be built (adjusting for *taluk* and non-*taluk* hospitals)
	Existing	Required (as per norms)	To be built	Existing	Required (as per norms)	To be built	Existing	Required (as per norms)	To be built		
Chennai	0	0	0	0	0	0	0	0	0	0	0
Coimbatore	469	309	0	66	52	0	2	13	11	14	0
Cuddalore	319	313	0	42	52	10	8	13	5	7	0
Dharmapuri	447	505	58	44	84	40	5	21	16	9	7
Dindigul	305	257	0	69	43	0	0	11	11	11	0
Erode	412	287	0	62	48	0	4	12	8	9	0
Kancheepuram	352	284	0	46	47	1	1	12	11	7	4
Kanyakumari	267	118	0	25	20	0	5	5	0	8	0
Karur	164	128	0	26	21	0	3	5	2	5	0
Madurai	302	232	0	40	39	0	2	10	8	5	3
Nagapattinam	184	237	53	39	40	1	4	10	6	11	0
Namakkal	240	197	0	44	33	0	3	8	5	7	0
Perambalur	203	212	9	47	35	0	0	9	9	6	3
Puddukotai	239	249	10	46	42	0	6	10	4	11	0
Ramnad	249	180	0	41	30	0	5	8	3	9	0
Salem	421	342	0	67	57	0	3	14	11	8	3
Sivganga	267	168	0	41	28	0	3	7	4	9	0
Thanjavur	319	300	0	55	50	0	3	13	10	12	0
The Nilgiris	194	63	0	26	10	0	2	3	1	5	0

Table 3.7: Availability, Requirement, and Gap in the Provision of SCs, PHCs and CHCs 2003-04 (Contd.,)

	Sub-centres (SCs)			Primary Health Centres (PHCs)			Community Health Centres (CHCs)			*Taluk* and non-*taluk* hospitals (nos)	CHCs to be built (adjusting for *taluk* and non-*taluk* hospitals)
	Existing	Required (as per norms)	To be built	Existing	Required (as per norms)	To be built	Existing	Required (as per norms)	To be built		
Theni	163	102	0	23	17	0	2	4	2	5	0
Thiruvallur	300	268	0	39	45	6	2	11	9	10	0
Thiruvarur	248	190	0	38	32	0	1	8	7	7	0
Tiruchirapalli	318	264	0	44	44	0	5	11	6	8	0
Tirunelveli	383	291	0	59	48	0	3	12	9	12	0
Tiruvannamalai	398	365	0	78	61	0	2	15	13	6	7
Toothkudi	249	186	0	47	31	0	0	8	8	8	0
Vellore	452	453	1	64	76	12	3	19	16	9	7
Villuppuram	557	518	0	77	86	9	3	22	19	9	10
Virudhnagar	261	202	0	36	34	0	0	8	8	8	0
Tamilnadu	8682	7221	131	1331	1204	79	80	301	221	235	44

Table 3.8: Additional Requirement of Resources (over and above that incurred in 2003-04) in Health, Family Welfare, Water Supply, Sanitation, and Nutrition

(Rs. crore)

Heads	Capital Expenditure	Recurring Expenditure
Nutritional supplements/IFA tablets/Tetanus injections		379
Water supply	1932	193
Sanitation	919	
New SCs, PHCs and upgraded PHCs + cost of replacing rented buildings with govt. buildings	230	20
Filling vacancies in SCs, PHCs and upgraded PHCs		46
Filling up vacancies in districts, *taluk* and non-*taluk* hospitals		22
Medicines		82
Total	3081	742

Assuming that capital expenditure will be spread out over a span of five years, the annual expenditure (capital and revenue) needs to be increased by about Rs. 1358 crore in 2004-05 costs. In 2003-04, a sum of Rs. 2134 crore was spent on health, family welfare, nutrition, water supply, and sanitation. This was about 1.6 percent of GSDP in that year. As per our estimates, the state needs to increase its spending to about 2.6 percent of GSDP. The increase would primarily have to be made in the areas of water supply, sanitation, and nutrition.

3.3. Utilisation of Public Health Facilities in Tamilnadu: Changing Trends Relative to the Private Sector

Insights on the nature of public interventions required in the health sector and the corresponding financial implications for the state can be derived from household level data on utilisation of public and private health facilities provided by the National Sample Survey Organisation (NSSO). The NSSO provides information on utilisation of public and private health facilities in states for treatment of morbidity (including maternal health care) based on nationwide household surveys. The last two rounds of these surveys were carried out in 1995-96 and 2004, and evidence from these two rounds is used here to analyse the changing trends in the utilisation of public relative to private health facilities in the state. In particular, utilisation of public and private health facilities across quartiles of per capita consumer expenditure in the state is examined for three specific cases: hospitalisations for treatment of morbidity, outpatient visits for treatment of morbidity, and maternal health care as reflected in antenatal care.[15]

For hospitalisations related to treatment of morbidity, evidence suggests that the poorer sections of the population in rural areas (the three lower quartiles) and the richer sections of the population in the urban areas (the two upper

[15] Given that there were differences in the format of data collection in the two rounds of NSSO surveys, the analysis was restricted to those variables which were available in both the rounds.

quartiles) have shifted away from public health facilities in the state towards private ones (Table 3.9). With the average cost of hospitalisation in private hospitals about 8 times higher than that in public hospitals in the rural areas of the state (NSSO 2004), the shift of the poorer sections of the population away from public hospitals is likely to have increased their burden of health expenditure. Part of this shift towards private sources is likely to have been driven by the fact that public expenditure by the state in secondary-level hospitals which include the district, *taluk* and non-*taluk* hospitals is relatively low.

Interestingly however, the poorer sections of the population in the urban areas (the two lower quartiles) and the richer section of the population in the rural areas (the topmost quartile) have shifted away from private hospitals towards public ones (Table 3.10). With the state spending a substantially large share on tertiary-level hospitals, it is likely that the urban poor and the rural rich who cannot afford the high cost of hospitalisation in the urban private sector are availing the benefits of the state's spending on the tertiary sector.

Table 3.9: Distribution of Inpatient Cases for Treatment of Morbidity Across Income Quartiles in Public and Private Health Facilities in Rural and Urban Areas, 52nd and 60th Round of NSSO Survey

Quartiles	Rural			
	1995		2004	
	Private	Public	Private	Public
0-25	31	69	55	45
25-50	44	55	49	51
50-75	46	54	59	41
75-100	76	21	68	32
All	59	41	59	41
	Urban			
	1995		2004	
	Private	Public	Private	Public
0-25	39	61	37	63
25-50	59	41	56	44
50-75	64	36	70	30
75-100	81	19	84	16
All	64	36	63	37

For outpatient visits to health facilities for treatment of morbidity, the trend is similar in terms of the shift of the urban poor towards public facilities and the urban rich towards private facilities. However, the shift towards private facilities by the richer sections in the urban areas appears to be stronger in the case of outpatient visits than that for hospitalisation (top three quartiles in the case of outpatient visits in comparison to top two quartiles in case of hospitalisations).

For rural areas also, the trend is different from that of hospitalisation. While there has been a marginal increase in the utilisation of public sources by the poorer sections (specifically the second quartile) in the rural areas possibly due to access to facilities in the primary sector, the richer sections of the rural people have shifted away from public sources towards private ones for outpatient visits. Importantly, the shift towards public sources by the poorer sections, particularly the 2nd quartile, is likely to have been driven by the problems faced by these sections in accessing the relatively expensive private sources. This is reflected in the fact that increase in untreated morbidity has been the highest in this quartile in the rural areas between the last two rounds of NSSO surveys.

Notably, the rural rich (topmost quartile in the rural areas) have relatively increased the use of *public* facilities for hospitalisation, but increased the use of *private* sources for outpatient visits, as episodes of hospitalisation are more expensive than outpatient visits.

Table 3.10: Distribution of Outpatient Cases for Treatment of Morbidity across Income Quartiles in Public and Private Health Facilities in Rural and Urban Aareas, 52nd and 60th Round of NSSO Survey

Quartiles	Rural			
	1995		2004	
	Private	Public	Private	Public
0-25	56	44	56	44
25-50	79	21	68	32
50-75	66	34	71	29
75-100	74	26	79	21
All	70	30	70	30
	Urban			
	1995		2004	
	Private	Public	Private	Public
0-25	78	22	65	35
25-50	70	30	80	20
50-75	68	32	79	21
75-100	90	10	91	9
All	78	22	79	21

In the case of maternal healthcare as reflected in antenatal registrations, there has been a significant increase in the role of public facilities between the last two rounds of NSSO surveys, particularly in the lowest income quartile in the rural areas. There has been a substantial increase in antenatal registrations in the lowest quartile of the rural areas between the last two rounds of NSSO data and this increase has been largely brought about by public sources. The increase in the role of public sources for antenatal registrations is reflected in the fact that the share of public sources in antenatal registrations, which was already

dominant, has increased further (Table 3.11). Although weaker in comparison to rural areas, public interventions have resulted in increased in antenatal registrations in the lowest income quartile in urban areas as well.

Table 3.11 Distribution of Antenatal Registrations across Income Quartiles in Rural and Urban Areas, 52nd and 60th Round of NSSO Survey

Quartiles	Rural							
	Share of Public-Private in Registrations				Share of Registered-not Registered Cases in Total Pregnancies			
	1995		2004		1995		2004	
	Public	Private	Public	Private	Not Reg	Reg	Not Reg	Reg
0-25	82	18	86	14	14	86	4	96
25-50	78	22	77	23	7	93	5	95
50-75	61	39	60	40	14	86	6	94
75-100	64	36	58	42	13	87	3	97
	Urban							
	1995		2004		1995		2004	
	Public	Private	Public	Private	N Reg	Reg	N Reg	Reg
0-25	72	28	69	31	16	84	2	98
25-50	53	47	64	36	12	88	0	100
50-75	48	52	51	49	4	96	2	98
75-100	22	78	30	70	4	96	1	99

Note: N Reg – Not registered, Reg – registered

On the whole, while the state appears to be doing well in terms of antenatal care, the fact that nearly 60 percent of inpatient and 70 percent of outpatient treatments in the state were still carried out in private facilities is a worrisome feature. More so, the share of private sources in both inpatient and outpatient treatment has barely changed between 1995-96 and 2004. This is an area of concern. Private treatment involves a higher out-of-pocket expenditure and the increasing trend towards utilisation of private hospitals for inpatient treatment by the poorer sections of the population calls for immediate public intervention.

In this context, it is important to strengthen the hospitals in the secondary sector through increased expenditure or reallocation of expenditure from tertiary to the secondary sector. For reallocation of expenditure from tertiary sector, government should explore possibilities of public private partnerships that may result in reduction in government expenditure in the tertiary care sector. However, it is important that these arrangements do not result in increasing the burden of health care on poorer sections of the population. While some states like, West Bengal have entered into partnership with private parties for non-clinical activities such as laundry, dietary services, and diagnostic services in hospitals, the cost implications of these partnerships and their burden on the poorer sections of the population have not yet been studied in detail. The state

needs to explore these aspects before collaborating with private partners in the tertiary sector.

3.4. Effectiveness of Public Expenditure in the Health Sector

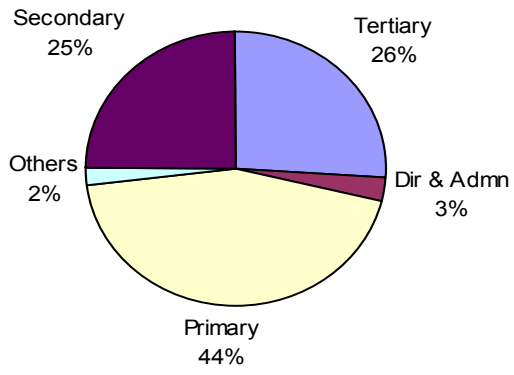
Effectiveness of public expenditure in the health sector is determined by two factors. First, the relative distribution of expenditure within the health sector and, second, for a given distribution of expenditure, the effectiveness with which the expenditures are translated into outputs.

A major problem in analysing the appropriateness of the state's distribution of expenditure arises from the absence of a standard norm for comparison of expenditure under different heads. The only norm available on the issue is that suggested by the *National Health Policy, 2002* over the distribution of expenditure on primary, secondary and tertiary health sectors. The *National Health Policy, 2002* suggests that states in India should spend about 55 percent of their expenditure on the primary health sector, 35 percent on the secondary health sector, and 10 percent on tertiary health sector. Using these norms we try to examine the appropriateness of Tamilnadu's expenditure in terms of the share directed towards primary, secondary, and tertiary health sectors.

For classifying expenditures into primary, secondary and tertiary health sectors, we follow the classification used by the Ministry of Health and Family Welfare in compiling the *National Health Accounts of India 2001*.[16] Using this classification, a comparison of the state's expenditure on primary, secondary, and tertiary sectors with the suggested norms indicate that the state spends a much higher amount on the tertiary health sector and a substantially lower amount on the primary, and the secondary sectors (Figure 3.4).

[16] Although the classification broadly corresponds to the NHA structure, some discretion has been used for classifying a few of the detailed expenditure items for which corresponding classification was not stated by the NHA. Also, although one could argue on the exact nature of expenditures that are primary, secondary, and tertiary, the broad relative shares of primary, secondary, and tertiary are unlikely to differ much with minor differences in the classification.

Figure 3.4: Distribution of Public Expenditure in Tamilnadu across Sectors, 2003-04



The state's spending on the tertiary sector is more than double the suggested norms. In contrast, the share spent on the primary and secondary health care sectors is substantially lower than the norms. The lower share of expenditure on the primary and the secondary sectors is likely to have affected the trend in utilisation of public facilities in the state brought out by household-level data from the 60th (2004) and the 52nd (1995-96) round collected by the National Sample Survey Organisation (NSSO).

The largest share of expenditure within the primary, secondary, and tertiary sector is on salaries and wages (Table 3.12). Although the share of expenditure on salaries and wages declines from primary to secondary/tertiary, there is little difference in the share of expenditure on salaries and wages between the secondary and the tertiary sector. This could mean that either the tertiary sector is spending higher than or the secondary sector is spending lower than what it ought to on salaries or wages. This needs to be examined in greater detail.

Additionally, although at present about 90 percent of the patients utilising public facilities in the state for outpatient treatment are receiving medicines 'free or partially free' (NSSO 2004), with the increase in utilisation of public facilities, the present level of expenditure on medicines would become inadequate. If out-of-pocket expenditure particularly of the poorer sections of the population is to be reduced, these sections of the population have to be attracted to public facilities. With increase in utilisation of public facilities, expenditures on medicines and other heads have to be correspondingly increased.

Table 3.12: Distribution of Public Expenditure in Tamilnadu Under Functional Heads, 2003-04

	Primary	Secondary	Tertiary	Direction and administration	Others	Overall
Salaries and wages	75.7	64.8	63.9	89.4	6.4	68.86
Office expenses	2.2	4.2	5.3	10.4	0.0	3.76
Materials, supplies, clothing, tentage, feeding, dietary charges, transport and compensation	1.8	2.8	1.7	0.1	0.0	1.96
Medicines	8.8	22.4	13.7	0.0	0.4	13.29
Grant-in aid, contributions, subsidies, scholarships	5.9	1.9	5.9	0.0	92.3	6.28
Major and minor works, machinery, equipments and maintenance	1.8	3.7	8.9	0.0	1.5	4.15
Others	0.0	0.0	0.0	0.0	0.0	0.02

On the issue of effectiveness of public expenditure in terms of translation of public expenditure into outputs, quantifying the effectiveness involve a number of problems. First, the input set that determines health output is complex. Apart from public expenditure, health outputs are determined by a large number of interlinked factors, many of which are also qualitative in nature. Under these circumstances, quantifying the entire input set that determines health output is extremely difficult. In the absence of a well-defined input set, measuring the effectiveness of public expenditure is often ambiguous and incomplete. Secondly, in the health sector, the same inputs translate into multiple outputs. For example, services of medical and para-medical staff can lead to better outputs in terms of reduced burden of diseases or increased antenatal care or immunisation services. The multiplicity of outputs from the same input further complicates the choice of an appropriate indicator of health output for measurement of effectiveness and efficiency of public expenditure.

Despite these problems, we provide a partial analysis of the association of public expenditure on PHCs and the outpatient turnout on PHCs across districts of the state. The choice of PHCs for analysis is determined by the district-wise availability of data on expenditure and outpatient turnout in PHCs. Although PHCs provide inpatient services as well, the number of outpatients visiting PHCs is much higher than the number of inpatients in PHCs. The analysis is partial in the sense that we use a single input and a single output for indicating the relative differences in outpatient turnout and the level of public expenditure in PHCs across districts. While part of the differences are likely to be due to efficiency considerations, it must be remembered that differences could also arise due to the omitted input and output variables.

The analysis suggests that public expenditure per PHC has a significant positive association with the number of outpatients per PHCs across districts in the state (correlation coefficient is about 0.5). However, there are large variations

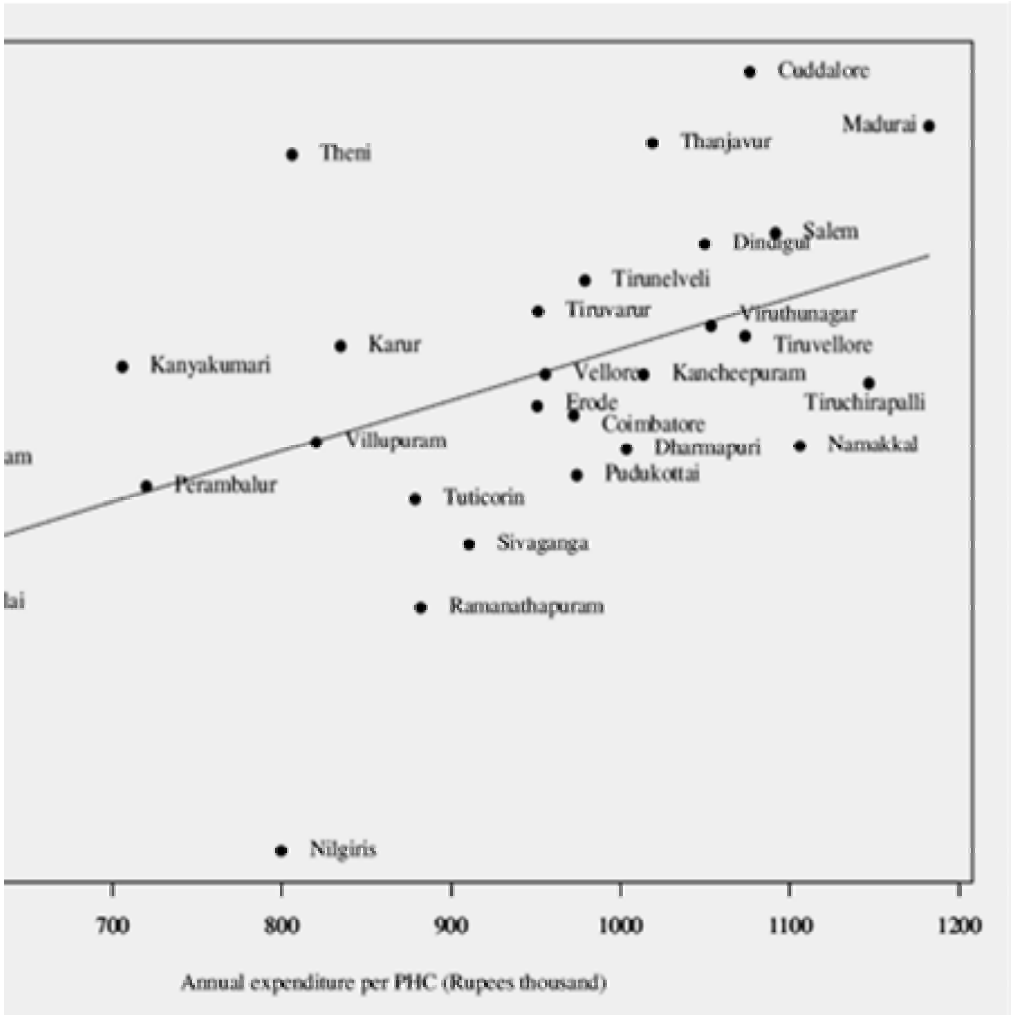
of outpatient turnout at similar levels of public expenditure (Figure 3.5). While part of this variation could be due to inefficiency, these could also be due to a number of other omitted input and output variables. For example, the district of Nilgiri particularly appears to be performing badly in terms of outpatient turnout possibly due to the low density of population in the district. Also, districts like Ramanathapuram, Sivaganga, Pudukottai, Dharmapuri, Namakkal, and Tiruchirapalli appear to have a relatively low outpatient turnout given their level of public expenditure. The state needs to explore the reasons behind the relatively low patient turnout in these districts and make necessary interventions.

Interestingly, a comparison of the relationship between public expenditure on PHCs and SCs with rural IMR, suggests that per capita expenditure on sub-centers has a stronger negative association with rural IMR than per capita expenditure on primary health centres across districts. This possibly reflects the fact that the sub-centres play a crucial role in antenatal care which has a significant bearing on neonatal mortality and in turn, on overall infant mortality.

3.5. Financing Health Services: Summary and Policy Suggestions

Although there are considerable variations in different available estimates of IMR and MMR in Tamilnadu, if one goes by the most optimistic estimate provided by the vital events survey (VES) conducted by the state, the state seems to be doing reasonably well and is close to reaching the national and state-level targets of IMR. In terms of MMR, although the state's maternal audit report suggests that the state is close to reaching the national level target, it is yet to achieve the state level target of MMR to be achieved by 2012.

Figure 3.5: Public Expenditure and Outpatient Turnout



Also, there are vast inter-district variations in terms of maternal mortality in the state. Although the state has achieved most of the output goals in terms of antenatal checkups and institutional deliveries related to maternal mortality, there are areas like provisioning of IFA tablets to pregnant women where the state needs to focus. Much of the problem of non-provision of IFA tablets was due to non-acceptability of these tablets among the rural women in the state. Both the centre and the state have taken up steps in this direction and introduced other forms of iron supplements in the RCH kit.

Given that Tamilnadu is close to achieving most of the output goals related to maternal mortality, and has a low fertility rate, an area that requires attention in the context of reducing maternal mortality is that of malnourishment. In this context, the state has announced its policy towards a malnutrition free

Tamilnadu in 2002. Although the policy focuses on a life cycle approach towards combating malnutrition in Tamilnadu, at present, it has been limited mainly to providing nutritional supplements to children through the midday meal scheme and pregnant women. Although there has been some intervention in terms of addressing anemia among adolescent girls, this needs to be scaled up substantially to reduce anemia among pregnant women in the near future.

Along with these interventions, strengthening the Public Distribution System (PDS) and targeting overall poverty will be important for reducing the overall level of malnourishment in the state. Additionally, to the extent that reduction of malnourishment in Tamilnadu needs a behavioural change, initiatives like the *Arogya Iyakkam* Programme (brought about by the Tamilnadu Science Forum), where a community volunteer counsels a group of families on various aspects of nutrition from pregnancy to pre-school period could be useful. These volunteers can also act as catalysts for improving the utilisation and performance of the *Anganwadi* centres in the state.

In contrast with public interventions on maternal and child health, relatively less effort has gone into control of various diseases. For incidence of diseases like malaria, targeted interventions in Chennai and the coastal districts are required. In general, more stress needs to be laid on policies towards reduction of vector and water borne diseases in the state. Increasing access to safe water supply and sanitation can be important in this context.

The fact that nearly half the sanctioned posts of male health workers in sub-centres, who are responsible for disease control programmes, are vacant also calls for attention. Besides, lack of basic laboratory services in about one-third of the PHCs in the state and qualified laboratory technicians there also causes concern. However, it is heartening to note that the state is trying to ensure laboratory testing in PHCs, This could be crucial for controlling communicable diseases. The problem of AIDS has to be similarly tackled with a well-known package of medical and social interventions assisted by the national level organisation set up for the purpose.

While it is difficult to quantify the financial requirements of the health sector due to the complexities involved, we assume that the state needs to meet at least the national norms on physical infrastructure, provide 100 percent access to safe drinking water, provide toilets to all households, and distribute nutritional supplements to moderately and severely undernourished children in the age group of 0-5, anemic adolescent females in the age group of 10 to 19, and pregnant women. To provide these basic amenities, our estimates suggest that the state needs to raise its spending from about 1.6 percent of GSDP in 2003-04 to at least 2.6 percent of GSDP. It is important to note that the estimate reflects a minimum level of expenditure that need to be necessarily incurred, but excludes the financial requirements on a number of other accounts. In this context, the declining trend in the share of the state's combined public expenditure on health,

family welfare, water supply, sanitation, and nutrition as a percentage of GSDP over the years and more recently in real per capita terms is a cause for concern.

Apart from the level of expenditure, the effectiveness of public expenditure is also important. Our analysis suggests that at least in the case of PHCs, there are large variations in outpatient turnout at similar levels of public expenditure. One needs to explore the reasons behind these large variations. While part of it could be inefficiency, it could also be due to a large number of interlinked input and output variables, which have been excluded from the analysis due to the partial nature of the analysis. Interestingly, rural IMR has a stronger relationship with per capita expenditure on sub-centres than with per capita expenditure on PHCs.

Additionally, various factors which adversely affect service delivery in the health sector need to be addressed. A recent report submitted to the Planning Commission (Summary of the Report on Workforce Management Options and Infrastructure Rationalisation of PHCs)[17], which studied various aspects of rural healthcare services in eight states (including Tamilnadu), pointed out that medical officers in CHCs of Tamilnadu spend more than half the time on administrative work. Similarly, under-utilisation of equipment in SCs was also highest in Tamilnadu. The supply of medicines in SCs with short expiry dates was also found to be relatively high in Tamilnadu. These aspects have to be specifically looked into, if service delivery in the health sector has to be improved.

On the distribution of expenditure within the health sector, the state spends a higher share on the tertiary sector than on the primary and secondary sectors, also higher than that suggested by the *National Health Policy, 2002*. The lower share of expenditure towards the secondary sector has possibly resulted in the poorer sections of the rural population of the state moving away from public facilities to private ones, particularly for inpatient treatment, increasing their burden of health expenditure. Even for outpatient visits, there are signs of stress in terms of access to health care for the rural poor, as reflected in the increase in untreated morbidity. The state therefore needs to increase its expenditure on secondary health sector.

Importantly, a benefit incidence analysis (*see,* Chapter 5) suggests that the benefits of public spending on health facilities in the state are reaped more by the poorer half of the population, particularly the lowest quartile, than the richer half. This makes public expenditure on health facilities particularly important for the poorer sections of the population.

---

[17] The Report is available at: *http://planningcommission.nic.in/reports/peoreport/peoevalu/peo_NCAER.doc* Year of publication is not reported in the document.

An alternative way of reducing the burden of health expenditure on the poorer sections of the people is through the coverage of their health expenditure through insurance schemes. In this context, three kinds of insurance are often talked about: social insurance, private insurance, and community-based health insurance.

Universal coverage of health expenditures through social insurance, which involves a fixed contribution from one's earnings, is not very meaningful if bulk of the workforce is self-employed, or employed in the informal sector. With Tamilnadu having a small formal sector, introducing social insurance is unlikely to reduce the burden of out-of-pocket expenditure, particularly for the poorer sections of the population. Similarly, private insurance is equally problematic because the cost of private insurance depends on the health risks attached to individuals.

In general, poorer individuals, who form bulk of the population, are more prone to health hazards and this leads to high premiums for health insurance. The high premiums are affordable only by high income groups and hence private insurance in most developing countries are restricted to high income groups.[18] In fact, in most countries, private insurance has been found to be regressive in nature (Wagstaff and van Doorslaer 1992; and Wagstaff *et. al*, 1999).

With difficulty in the introduction of social and private insurance at the state level, one option is to explore the possibility of a community-based health insurance (CBHI) in the state. Community-based insurance schemes differ from the usual insurance schemes in the sense that they are completely managed by a community. Individuals of a community pay a certain premium towards a community fund and get the benefit of meeting their health expenditures out of the fund in case of need for health expenditures. The extent of premium, the benefits to be obtained from it and the operation of the CBHI are decided entirely by the community. These schemes are, however, based more "on the concepts of mutual aid and social solidarity" than the concept of insurance (Bennett, Gamble Kelley, and Silvers, 2004).

These schemes usually require a substantial number of members to pool the risk. Also, most often, these schemes either exclude the poorest of the poor, (who have a higher health risk) or find it difficult to sustain themselves financially without the help of any external support. Analysing four successful CBHI schemes of Gujarat, Acharya and Ranson (2005), argued that in none of the four schemes, the premium collected was enough to meet the medical claims made and administrative cost of running the scheme and were therefore financially unsustainable. They argued that none of these schemes would have been successful without an external support. In fact, experiences across the world suggest that financial sustainability has been a major concern in all the CBHI

[18] Musgrove *et. al.* (2002); Sbarbaro (2000)

schemes and almost all successful CBHI schemes had some sort of external financial support.[19]

Introduction of health insurance scheme of any form in a state like Tamilnadu would therefore necessarily require financial support from the government. Providing financial support to CBHI schemes in the entire state will be extremely difficult to administer. For general insurance, the Government of India has already introduced Universal Health Insurance Schemes for people below the poverty line in the country providing a subsidy of Rs 100 per BPL family. Even with this subsidy, the premium was too high for poor families to afford insurance.[20] In comparison, the successful *Yeshasvini Health Insurance Scheme* in Karnataka charged a premium of as low as Rs. 60 per annum from members of the scheme.

Studies have argued that rural poor are willing to pay an amount between Rs 75 and Rs 90, and therefore the low premium in such community-based insurance schemes such as the *Yeshasvini Scheme* provides reasons to explore such possibilities.[21] However, it must be remembered that this scheme provides insurance only against surgical interventions and outpatient services in a series of private hospitals, and does not insure individuals against all major health expenditures. A detailed study of the *Yeshaswini Scheme* is required to explore the possibility of introducing such a scheme in Tamilnadu and mechanisms for providing comprehensive health insurance with low premiums.

It is possible that the relatively high level of private expenditure in total health expenditure alluded to above is partially a result of relatively high per capita income in the state. Publicly provided health services are often viewed as some sort of inferior good, with private provision substituting public provision in the consumer demand with increasing income. If this is indeed the case, then there is scope for cross subsidisation through introduction of expensive public medical facilities, which can yield profits to subsidise facilities for the poor. It is probably not feasible in the case of primary health care, but is particularly so in larger units of curative health care. Many non-governmental hospitals use the technique of providing different types of beds at varying prices, for example, and all other charges are linked to the type of bed opted for. This system gets around the problem of measuring the ability to pay, as the users reveal it through their own choice. However, this is not to advocate either quality differentiation in actual medical care for, or reduce accessibility of, the poor to the health services. This should only be considered of as an option when incremental facilities are provided.

---

19 Bennett, *et.al*., ibid
20 Gupta and Trivedi (2005)
21 Kuruvilla, Liu, and Jacob (2005).

IV. Poverty Alleviation, Housing, and Social Welfare

4.1. Introduction

Besides the two major sectors of education and health, human development also depends on basic social infrastructure like shelter and water, while the overarching consideration is the extent of poverty that shuts off the poor from the benefits of all improvement opportunities – including those provided free – that require even small amounts of complementary private expenditure. Mainstream poverty alleviation programmes address some dimensions of poverty, in particular those arising from lack of employment opportunities, but these have to be supplemented by other welfare programmes targeted at specific groups of beneficiaries such as the old and the infirm, destitute, widows who cannot support themselves, particular groups of underprivileged citizens, and the disabled. In general, there can be a vicious cycle of poverty and low human development, each reinforcing the other. Even considering the narrow area of public finances, a high level of poverty usually implies large expenditure obligations but a small resource base. Tamilnadu does not have such a debilitating level of poverty, which is below that for the country as a whole, and half that of the highest level estimated for any individual state. As such, the state can, in some sense, afford to attack the problem of poverty (in all its aspects) more vigorously than some other states.

As a matter of fact, Tamilnadu does incur substantial expenditure on poverty alleviation under social sector heads and rural development that complements central government expenditures for poverty alleviation through the state budget as well as outside the state budget through local bodies, non-governmental organisations and special organisations like, societies and boards. There are also direct interventions under other economic categories like agriculture and industry in the form of subsidies or incentives. Though the entire public expenditures are intended to benefit the poor in one form or the other, some direct interventions for poverty alleviation are through expenditure under rural development and social welfare heads. The details of anti poverty expenditures in per capita terms are given in table 4.1.

Of the total expenditure on social services, expenditure on social welfare, labour welfare, rural housing, social security and welfare, and rural development are some of the heads of expenditure incurred by the government specifically towards people below poverty line and special groups. Analysing these expenditures and the extent of coverage of the targeted population is the focus of this chapter. It is divided into two main sections: the first is on poverty alleviation programmes under rural development head, and the second is on amenities and social security.

4.2. Poverty Alleviation and Rural Development

Poverty is generally defined as the state or condition of having little or no money, goods, or means of support; condition of being poor; indigence. Synonyms are penury, destitution, need, want; these words imply a state of deprivation and lack of necessities. [22] Poverty denotes a serious lack of the means for a proper existence. Thus, poverty is an economic condition, and is, to some extent, relative to the prevalent levels of general prosperity.

Poverty line is a minimum income level used as an official standard for determining the proportion of population living in poverty. The present official poverty line is based only on calories and hence accounts for little else but the satiation of one's hunger. This, in actual practice, provides a large scope for programmes other than the official poverty alleviation programmes. Of course, at least some of the centrally sponsored programmes in this area are proposed to be based on multi indicator surveys, but the official poverty statistics continue to be based on a poverty line defined largely on the basis of a minimum calorie intake. In 2004, the official poverty lines were Rs. 368 and Rs. 559 per person per month for rural and urban areas. However, it should be clear that the actual number of poor can be far larger than official estimates.

There has been a lively debate on the methodology of estimating poverty and the resultant poverty estimates. Even official estimates are not always strictly comparable with each other because of different methodologies followed in both collection and estimation of data. Keeping this in view, we restrict our estimations of resource requirement for poverty alleviation to two alternatives – one taking the official estimates of 1999-2000 as the basis, and the other based on the extent of poverty in Tamilnadu worked out by us on the basis of NSSO data (60^{th} Round – thin sample). The two estimates of resource requirements, as we shall see below, do not differ very much.

Under rural development, major expenditures on poverty alleviation can be classified into wage-employment generating, self-employment generating and rural infrastructure creating schemes. *Sampoorna Grameena Rojgar Yojana*, *Swarnjayanti Gram Swarojgar Yojana, Indira Awas Yojana*, Drought Prone Area Programme, Desert Development Programmes and Augmented Rural Water Supply Programme are the prominent poverty alleviation programmes. Central transfers under these schemes are directly made to local bodies (*panchayats*/ DRDA). Allocations made by the centre are now being transferred to local bodies directly since 1990-91 outside the state budget. Therefore, even as the state government incurs some expenditure on poverty alleviation, just looking at any state's expenditure does not convey the entire picture. The details of various schemes implemented in Tamilnadu for poverty alleviation, both by the state and central governments are given in appendix 4.1.

---

[22] Webster's *Encyclopedic* Unabridged Dictionary of the English language.

The entire expenditure on poverty alleviation including that on social welfare as classified into various categories, such as, direct poverty alleviation (rural development) and other social service sectors like social welfare, rural housing is given in table 4.1. Per capita expenditure on poverty alleviation including welfare programes increased from Rs. 153 in 1990-91 to Rs. 370 in 1998-99 (not reported in the table); subsequently, it rose to Rs. 695 in 2004-05 and dropped a little to Rs. 529 in 2005-06. In real terms, there was little increase in the 1990s, while there has been some increase after that.

The composition of this category of expenditures has changed over time; although rural development expenditures within this category outstripped social sector expenditures in the nineties, it reversed subsequently and the latter far outstripped the poverty alleviation expenditures by 2005-06. This could have happened partly because some of the poverty alleviation expenditures are not fully accounted for, being outside the budget (although we have included in the table such expenditures on the major schemes) and also because the reduction in poverty was substantial in terms of the official Planning Commission estimates. In contrast, expenditure on social services has increased since the pressure to expand coverage of social services usually increases as soon as the urgency of immediate relief from poverty diminishes; demand for basic services like education, health, and water supply are likely to increase with reduction in income poverty and deprivation in terms of food and shelter.

Table 4.1: Per Capita Expenditure on Poverty Alleviation in Tamilnadu (Rs.)

	Expenditure Head	1990-91	1993-94	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
1	**Total Expenditure**	**1141.91**	**1692.46**	**3819.69**	**3806.34**	**4423.02**	**4675.96**	**5190.95**	**5576.61**
2	**Human Development Expenditure**	**534.72**	**731.27**	**1532.73**	**1444.15**	**1512.16**	**1803.94**	**2034.03**	**2124.88**
3	**Poverty Alleviation***	**153.52**	**205.88**	**414.30**	**350.42**	**374.72**	**482.15**	**695.02**	**528.88**
3.1	**In Social Services**	60.59	80.91	212.97	201.99	205.40	258.59	526.30	349.84
	Welfare of SC, ST & OBCs	25.44	35.12	83.87	77.89	82.70	97.68	94.91	134.44
	Labour and employment	8.10	9.69	17.32	16.72	18.10	22.71	15.91	19.82
	Social security & welfare	25.50	34.12	107.00	109.92	98.99	131.04	407.09	185.01
	Rural housing	0.82	0.90	0.97	0.88	5.33	6.84	8.38	9.19
	Grants to NGOs, Destitute etc	0.72	1.09	3.80	-3.42	0.29	0.32	0.00	1.39
3.2	**Rural Development**	**92.93**	**124.97**	**201.34**	**148.42**	**169.32**	**223.56**	**168.72**	**179.04**
	Special programmes for rural dev.	6.06	11.19	6.27	4.52	4.43	5.42	5.88	5.79
	Rural employment	31.75	44.47	24.23	28.94	27.85	34.10	29.94	24.79
	Land reforms	0.12	0.04	0.82	0.37	0.11	0.55	0.64	0.93
	Other rural development progms.	21.14	17.00	107.65	48.40	65.81	103.13	49.86	60.61
	Hill areas	3.54	4.38	4.59	4.37	4.85	4.56	2.53	1.43
	Centrally sponsored schemes	30.33	47.88	57.78	61.81	66.29	75.80	79.87	85.50
4	**Other Social Services**	**32.50**	**55.61**	**63.00**	**74.61**	**146.43**	**265.69**	**189.61**	**293.96**
	Housing	9.04	8.77	12.05	11.46	19.76	25.18	5.53	13.01
	Urban development	16.20	23.51	41.39	36.85	59.94	168.30	20.20	30.08
	Information and publicity	1.48	2.08	3.53	2.10	3.38	4.79	3.43	4.26
	Relief from natural calamities	4.85	19.46	1.73	20.09	59.58	63.95	156.30	242.49
	Secretariat - social services	0.93	1.79	4.28	4.10	3.77	3.47	4.16	4.13

* Poverty alleviation includes social welfare, rural housing, transfer payments under other social services and rural development

Source: (basic data*) Finance Accounts*, Comptroller and Auditor General, and *Annual Reports*, Ministry of Rural Development, Government of India

Table 4.2: Funds Received at District level under various Poverty Alleviation Schemes in 2003-04

Name of the Scheme	Funds Allocated			Spent by				
	Centre	State	Total	District	*Taluk*	Village	NGOS	DRDA Administration
Centrally Sponsored Schemes								
SGRY	32.49	5.92	38.41	5.27	14.15	18.09	0.00	0.00
SGSY	2.76	0.92	3.68	0.00	0.00	0.00	3.68	0.00
IAY	3.99	2.73	6.72	0.00	0.00	6.72	0.00	0.00
PMGSY	7.61	0.00	7.61	0.00	5.31	0.00	0.00	0.00
PMGSY GH	1.19	0.00	1.19	0.00	0.00	1.19	0.00	0.00
IWDP	0.48	0.04	0.53	0.00	0.53	0.00	0.00	0.00
MPLAD	6.15	0.00	6.15	0.00	1.38	4.76	0.00	0.01
TSC	1.37	0.47	1.83	0.00	1.36	0.00	0.45	0.02
BIO GAS	0.04	0.00	0.04	0.00	0.00	0.00	0.04	0.00
DRDA Admn.	0.73	0.26	0.99	0.00	0.00	0.00	0.00	0.99
CSS Total	56.81	10.33	67.14	5.27	22.72	30.75	4.17	1.02
State Schemes								
SGRY (Drought)		18.85	18.85	0.00	11.33		7.47	
SSS		1.16	1.16	0.00	1.12		0.04	
MLACDS		12.85	12.85	0.00	3.43		9.42	
State Total		32.86	32.86	0.00	15.89		16.93	
Grand Total	56.81	43.19	100.00	5.27	38.61	30.75	21.10	1.02

Funds Received at District level under various Poverty Alleviation Schemes in 2004-05

Name of the Scheme	Funds Allocated			Spent by				
	Centre	State	Total	District	*Taluk*	Village	NGOS	DRDA Administration
Centrally Sponsored Schemes								
SGRY	15.27	3.13	18.39	3.68	5.52	9.20	0.00	0.00
SGSY	2.93	0.98	3.91	0.00	0.00	0.00	3.91	0.00
IAY	7.14	2.38	9.52	0.00	0.00	9.52	0.00	0.00
NFFWP	18.29	0.00	18.29	2.66	7.58	3.46	4.59	0.00
PMGSY	4.16	0.00	4.16	0.00	0.00	0.00	2.51	0.00
PMGSY GH	0.69	0.00	0.69	0.00	0.00	0.69	0.00	0.00
IWDP	0.29	0.05	0.35	0.00	0.00	0.00	0.35	0.00
MPLAD	4.43	0.00	4.43	0.00	3.76	0.00	0.65	0.02
TSC	1.61	0.55	2.16	0.00	0.05	1.55	0.49	0.07
BIO GAS	0.02	0.00	0.02	0.00	0.00	0.00	0.02	0.00
DRDA Admn.	0.37	0.12	0.49	0.00	0.00	0.00	0.00	0.49
CSS Total	55.20	7.21	62.41	6.34	16.92	24.42	12.51	0.58
State Schemes								
Nammadu *Gramam*	0.00	11.13	11.13	0.00	0.00	11.13	0.00	0.00
SGRY (Drought)	0.00	4.09	4.09	0.30	2.28	1.52	0.00	0.00
SSS	0.00	1.55	1.55	0.00	1.55	0.00	0.00	0.00
MLACDS	0.00	8.11	8.11	0.00	6.17	0.00	1.94	0.00
HRP	0.00	0.34	0.34	0.00	0.00	0.00	0.34	0.00
MRR	0.00	5.41	5.41	0.00	5.41	0.00	0.00	0.00
Flood Relief	0.00	6.96	6.96	0.00	2.26	0.00	4.70	0.00
States Total	0.00	37.59	37.59	0.30	17.67	12.65	6.98	0.00
Grand Total	55.20	44.80	100.00	6.64	34.58	37.06	19.49	0.58

Source: District Rural Development Agency, Villupuram, Government of Tamilnadu

SGRY was one of the main programmes in poverty alleviation and constituted a major share of the total expenditure on poverty alleviation in a district. The detailed expenditure on poverty alleviation in a district is given in table 4.2. A similar pattern obtains for the state as a whole. Of the total expenditure on direct poverty alleviation programmes, wage employment programmes like SGRY and *Food for Work* constituted around 56 percent in 2003-04 and 40 percent in 2004-05. If one includes MPLAD and MLACDS, the percentage goes up substantially. Of all these, SGRY is the major programme for alleviating poverty through wage employment. In what follows, we concentrate on SGRY as the main scheme for poverty alleviation.

Rural development expenditure under the centrally sponsored scheme, SGRY in Tamilnadu for the year 2004-05 is given in tables 4.3A and 4.3B. This scheme is a centrally sponsored wage employment generating programme with states sharing 25 percent of cash expenditure. Wages under this programme are paid in cash and kind. The minimum wage as per the provisions of the scheme in Tamilnadu during 2004-05 was Rs. 54 per day. Of this, the cash component was Rs. 25.75 and the remaining wage was paid by distributing 5 kg of rice at the price of Rs 5.65 per kg. The central government supplied the rice or wheat in addition to 75 percent of the cash expenditure. In 2004-05, all the three tiers of rural local bodies together generated employment amounting to 5.19 crore person days with cash expenditure of Rs. 309.6 crore in addition to foodgrains distributed. It is clear from table 4.3B that only 43 percent of total expenditure of Rs. 309.6 crore has gone into wages and the remaining 57 percent is absorbed by the material used in the works that are being taken up under these schemes.

Table 4.3A: Allocation and Expenditure under SGRY in Tamilnadu - 2004-05

Opening balance (Rs. lakh)	1379.36
Release from centre (Rs. lakh)	21519.49
State's matching contribution (Rs. lakh)	8220.90
Misc. receipts (Rs. lakh)	869.83
Total funds available* (Rs. lakh)	32125.05
Expenditure (Rs. lakh)	30960.67
By *Gram Panchayat*	15546.22
Intermediate *Panchayat*	9286.11
District *Panchayat*	6128.34
Person days generated (in lakhs)	519.41
By *Gram Panchayat*	265.18
Intermediate *Panchayat*	153.30
District *Panchayat*	100.93
Expenditure per person day in rupees	59.61
By *Gram Panchayat*	58.62
Intermediate *Panchayat*	60.57
District *Panchayat*	60.72
Notified minimum wage Rs. per day	54
Component of food grains in the wages (Rs. 5.65 * 5 kgs of rice)	28.25
Cash component	25.75

* Excludes foodgrains component

Table 4.3B: Classification of Expenditure into Wages, and Material and Equipment under SGRY in Tamilnadu - 2004-05

		Gram Panchayat	**Intermediate *Panchayat***	***Zilla Panchayat***	**Total**
1	Total expenditure cash component Rs. lakh	15546	9286	6128	30961
2	Person days generated in lakhs	265	153	101	519
3	Wage in cash per person day (of Rs. 54)	25.75	25.75	25.75	25.75
4	Estimated wages in cash (2 x 3)	6828	3948	2599	13375
5	Estimated expenditure on Materials and others (1 - 4)	8718	5339	3529	17586
6	Share of wage component in cash expenditure (%)	43.92	42.51	42.41	43.20

Source: Department of Rural Development, Government of Tamilnadu

4.3. Goals Ahead and Resource Requirements

The poverty lines as defined by the Planning Commission for the state of Tamilnadu were Rs. 307.64 per capita per month in rural areas and Rs. 475.60 in

urban areas during 1999-00. If we update this rural poverty line by consumer price index for agricultural commodities,[23] it works out to Rs. 368 per capita per month in rural areas in 2004-05. Officially estimated poverty lines and levels are given in table 4.4. 2004-05 is the latest year for which the official poverty estimates are available. These estimates are based on NSSO consumer survey expenditure.

Table 4.4: Poverty Levels in Tamilnadu

	Rural			Urban		
	Poverty Line*	**% of People**	**Number of People (in lakh)**	**Poverty Line***	**% of People**	**Number of People (in lakh)**
1983-84	96.15	53.99	181.61	120.30	46.96	78.46
1993-94	196.53	32.48	121.70	296.63	39.77	80.40
1999-00	307.64	20.55@	80.51@	475.60	22.11@	49.97@
2004-05	351.86	22.85	76.50	547.42	22.20	69.13
Goal By 2007		15.55	60.92		17.11	38.67
Goal by 2012		5.55	21.74		7.11	16.07

*Per capita consumption (Rs. per month)
@ These estimates are not comparable with earlier estimates or the 2004-05 estimates cited above because of differences in methodology adopted for the estimation
Source: Web page of Planning Commission, Government of India

The goals set for poverty alleviation are given in table 4.5. The MDG goals specify that half the proportion of people living below poverty line should be brought above the poverty line. The 10th Plan targets to reduce poverty ratio by 5 percentage points by 2007 (this might have been achieved, going by comparable estimates of poverty relating to 1999-2000 and 2004-05 that showed a reduction in that period of above 4 percentage points) and by 15 percentage points by 2012. *Common Minimum Programme* of the coalition government at the centre has laid down strategies through which poverty ratio can be brought down. *Employment Guarantee Act* works in this direction, by guaranteeing a minimum of 100 days wage employment in a year to tackle the unemployment in lean seasons of agriculture dominated rural India.

23 *See* Mehta, J. (2004)

Table 4.5: Poverty Alleviation: Targets and Strategies

MDG Goals	National Development Goals/ Targets -10th Five Year Plan	CMP Goals
Eradicate extreme poverty and hunger- Reduce by half the proportion of people living on less than a dollar a day. Reduce by half the proportion of people who suffer from hunger.	Reduction of poverty ratio by 5 percentage points by 2007 and by 15 percentage points by 2012.	Enact *National Employment Guarantee Act*. 100 days employment every year at minimum wages for at least one able bodied person in every rural, urban poor, and lower middle class household. Double the flow of rural credit in the next three years. Strengthen public distribution system in the poorest and backward blocks of the country. Antyodaya cards for all households at risk of hunger.

Source: Planning Commission, Government of India

To achieve the 10th Plan target of reducing poverty ratio by 5 percentage points from the level of 2004-05 in 2007 i.e., from 76.5 lakh to 59.72 lakh people, around 16.78 lakh of the rural population had to be additionally covered under poverty alleviation programmes in Tamilnadu. To reduce it by 15 percentage points by 2012, another 33.55 lakh rural population has to be covered (*See*, Table 4.4, Goal by 2007, and Goal 2012). To cover an additional 16.78 lakh population assuming a household size of 4.5, additional employment of (16.78 lakh/4.5 *100) 3.73 crore person days needs to be generated (*See*, Table 4.6). With the present employment generation at 5.17 crore person days (that is expected to lift the beneficiaries above the poverty line by the end of the Tenth Plan), the first goal is assumed to have been met by now. To meet the second goal by 2012 of reducing the poverty level by 10 percentage points, an additional employment of 2.29 crore person days at the cost of Rs. 137.16 crore is necessary. Using the present official minimum wage of Rs. 60, the additional resources required can be derived as the product of the minimum wage and the additional person days of employment to be generated. Table 4.6 provides details of the estimation of additional resources required.

The present employment generating scheme, SGRY is creating about 5 crore person days, with only 43 percent of cash expenditure going towards wages. Considering the poverty ratio of 2004-05, an additional (7.46-5.17) 2.29 crore person days need to be generated at a cost of Rs. 137.17 crore to achieve the second goal.

Table 4.6: Estimation of Additional Resources Required

	In lakh	Poverty ratio
Official Estimates 2004-05		
Rural population below poverty line in 2004-05 (number)	76.50	22.85
Goal 1 by 2007 (To reduce by 5 percentage points)		
Number of people to be covered (number)	16.78	
Converted into households (4.5 members per family) (number)	3.73	
No of person days to be generated with 100 days of employment per household (number)	372.81	
Number of person days currently being generated under SGRY	517.00	
Extra funds required with daily wage of Rs. 60 per day (rupees lakh)	nil	
Goal 2 by 2012 (to reduce by 10 percentage points)		
Number of people to be covered (number)	33.55	
Converted into households (4.5 members per family) (number)	7.46	
No of person days to be generated with 100 days of employment per household (number)	745.61	
Number of person days currently being generated under SGRY	517.00	
Extra funds required with daily wage of Rs. 60 per day (rupees lakh)	13716.84	

Employment generating programmes need to be strengthened and targeted more towards people below poverty line in rural areas.[24] Since the self-employment generating programmes are directed toward the population closer to the poverty line, wage employment generating programmes need to be directed towards the poorest of the poor. Though information on implementation of SGRY/ NREGS provides the extent of person days' employment generated, one needs to look at the number of households benefited and verify their status relative to the poverty line to ensure that the benefits are adequately targeted.

As per our estimates, simply maintaining the past levels of expenditures should have achieved the short-term goal already and no additional resources would have been required. To achieve the long term goal, Rs.212 crore per annum will be needed to create wage employment to the poor. In addition to this, extant programmes towards self employment, rural housing and transfer payments to the aged and destitute people need to be continued to prevent swelling the ranks of the absolute poor.

[24] The employment programme under the *National Rural Employment Guarantee Act* has been launched in six districts of the state. As expected, there are initial problems of implementation; hopefully, these will be ironed out over time. *See*, TN-FORCES (2006).

4.4. Housing and Social Welfare

Public provisioning of various amenities like drinking water, sanitation, housing, and pensions for the aged and destitute persons are contributing factors to improve the well-being and, under certain circumstances, to eliminate poverty. The issue of drinking water and sanitation has been dealt with in conjunction with health issues in the previous chapter. In this section, we consider housing and social welfare issues.

4.4.1 Housing

The only available source for relatively recent information on housing conditions is *Census 2001*. In Tamilnadu, of the total population, nearly one lakh households are reported as living in dilapidated houses (*see*, Table 4.7). If this number is juxtaposed against the number of houses being provided during a year, the task of covering these one lakh households does not appear to be a difficult one.

Table 4.7: Housing and Other Amenities in Tamilnadu

	Rural	Urban	Total
Situation in 2001			
Total number of households	8284383	6381600	14665983
Dilapidated total	74,834	42,215	117049
Dilapidated SC	19,228	10,444	29672
Dilapidated ST	2,968	1,601	4569
Houses without toilet facilities	85.64	35.67	64.85
Households without protected water supply	14.4	14.7	14.1
Government Response			
Total houses constructed under IAY 2003-04			57069
SC houses constructed under IAY 2003-04			33304
ST houses constructed under IAY 2003-04			2109
Expenditure incurred for houses Rs. lakh			11989
Cost per house*			21007
Number of toilets constructed 2000-01			32651
Expenditure on constructing toilets			545.54
Cost per toilet			1671
Villages uncovered or partially covered under water supply 2003-04			0

* Rupees 20000 is given to each SC ST family for the construction of house and Rs. 10000 to others

Source: *Census 2001*, Annual reports of Ministry of Rural Development, Government of India.

The major programme for provisioning of housing in Tamilnadu is the centrally sponsored scheme, *Indira Awas Yojana* (IAY). In 2003-04, nearly 57,000 houses have been constructed under IAY of which 33,000 houses for scheduled caste, 210 for scheduled tribe and the remaining for other communities. The Government of India provides Rs. 20,000 for SC and ST for

each house constructed and Rs 10,000 for other communities. Total expenditure on provisioning of housing in Tamilnadu in 2003-04 was Rs. 119.89 crore. Even if the same level of expenditure were continued, the remaining population without proper housing should have been covered in the next two to three years. As such, there does not seem to be any additional requirement of resources in this area for Tamilnadu. In case there still remains a backlog, these can be taken care of within the normal expenditures. The only issue would then be, identification of appropriate beneficiaries; on this we have no new insight to offer.

4.4.2 Social Welfare

Pensions to the aged, destitute persons, and handicapped persons, and grants-in-aid to charitable institutions are the main expenditures under social security and welfare head. Of these, pensions are important in the context of social security. The 2001 census has shown that the elderly population of India aged 60 and above had reached 77 million. Of this number, nearly 25 percent in all states and union territories benefit from National Old Age Pension Scheme and *Annapurna* scheme.[25] Nearly 50 percent of the elderly are dependent on others in Tamilnadu, usually their children or younger relatives. Most of the aged population who are unable to work and have been deserted by their children are covered under five different pension schemes in Tamilnadu. They are: i) Old Age Pension Scheme (GoI sponsored); ii) Destitute Physically Handicapped Pension Scheme; iii) Destitute Widow Pension Scheme; iv) Destitute Agricultural Labourers Pension scheme; and v) Deserted Wives Pension Scheme. The beneficiaries under these schemes are entitled to a pension of Rs. 400 per month provided they are not habitual beggars, not having a major son or have been deserted by their children, and have no means of subsistence. The Government of India now allocates Rs 400 (revised from Rs.75 and then Rs 200 paid earlier) per beneficiary per month towards these pensions under the first scheme called National Old Age Pension Scheme and allocates food grains. However, the Government of Tamilnadu has been paying Rs. 400 (revised from Rs. 200) per beneficiary to be on par with other state government sponsored schemes even before the rates were revised by the centre.

While the total number of beneficiaries is around 12 lakhs, the expenditure is around Rs. 300 crore towards direct money transfers and another Rs. 50 crore towards other benefits (*see,* Table 4.8). The Government of Tamilnadu claims 100 percent coverage of all the aged and destitute who qualify. Unless and until the state government further revises the rate of pension per beneficiary (note that the Government of India norm is now equal to the pensions granted by the Government of Tamilnadu), or expands coverage, additional funds should not be larger than the Rs. 300 crore that was required when the

[25] Irudaya Rajan (2006)

rate was half the current rate.[26] However, it is generally recognised that for the elderly persons that are not supported by their family, the most important problem is often physical debilities that prevents them from undertaking even routine chores properly, something that the younger lot takes for granted. In other words, they require care and support, even when financial problems may not be as acute. This argues for establishment of homes for the elderly, of both 'paid' and 'free' variety. Such homes are apparently in short supply in the state, and the government could perhaps pay greater attention to this aspect of the care for the elderly, particularly in view of the twin facts of rising percentage of the elderly in the total population, and increasing life expectancy of those being categorised as the elderly.

Table 4.8: Expenditure Incurred under various Pension Schemes in Tamilnadu

(Rs. lakh)

Year	Expenditure on Pensions	Free Sarees and *Dhoties*	Free Ration Rice	Total
2000-01	25162.13	1260.24	1095.13	27517.50
2001-02	26306.97	1249.13	921.73	28477.83
2002-03	29597.11	1680.00	1743.00	33020.11
2003-04	29696.35	2408.65	1519.65	33624.65
2004-05	29832.14	4457.93	1427.99	35718.06
2005-06	29946.79	2448.12	1503.00	33897.91

Number of Beneficiaries under various Pensions Schemes

	2001-02	2002-03	2003-04	2004-05	2005-06
Old Age Pensions	481390	472066	477181	467935	477309
Physically Handicapped	58159	50819	56030	59776	65384
Destitute Widows	462802	485881	497711	478533	483962
Destitute Agr. Labourers	93230	100133	94679	88448	88057
Deserted Wives	79149	76982	82903	82147	82911
Total	1174730	1185881	1208504	1176839	1197623

Source: Department of Social Welfare, Government of Tamilnadu

Apart from the pension schemes for the aged, there are other welfare schemes for the organised and the unorganised sector. For the organised sector, the usual pension, insurance, and provident fund schemes are operated by the state government. For the unorganised sector also, there are several welfare boards that have been set up by the government. There are also survivor benefit schemes like Family Distress Relief Scheme and Accident Relief Scheme for the

[26] There is a view that the eligibility conditions are unduly harsh, and need to be relaxed to expand coverage and make the scheme more effective (*see for example*, *Tamilnadu Human Development Report,* p. 129). We have however, not taken this account.

unorganised sector labour. In addition, there are other social welfare schemes such as marriage and maternity assistance for poor women. Most of these schemes have fairly low coverage, and the actual expenditure is small compared to the total government expenditure.

Poverty being a multidimensional concept, the measurement of poverty in terms of minimum nutritional requirements has been controversial ever since its inception. Even while accepting this basic premise, there are many more problems in applying this concept in a large country like India, with major differences in almost every parameter that one cares to look into between different regions. Application of the concept for actual implementation of policy to alleviate poverty naturally aggravates the related controversies, particularly when transfer of funds from one level of government to another is concerned. The official system has tried to respond to some of the critical observations, but the responses have generated further controversy. In this background, the policy tools for poverty alleviation have essentially consisted of either providing wage employment or facilitating asset ownership that could generate self-employment. For those with minimal assets, conditions were sought to be created through various schemes that would facilitate generation of a stream of earnings from those assets. Other schemes, usually with very short-term impact, included responding to the symptoms of poverty (free clothing, shelter, subsidised food etc.).

While each of these types of interventions have a place in the overall scheme of public response to the problem of poverty, sustained impact is probably the greatest on the poorest through the wage employment route, provided such employment is adequate and is available on a sustained basis for a minimum period of time. Else, its impact is temporary, and even those lifted out of poverty can relapse into poverty. The most successful schemes have been those effectively combining wage employment creation with creation of durable social assets like rural roads that actually cause an upward shift in rural incomes in general, and result in better access to other publicly provided services. It is thus not surprising that a programme like SGRY is the major thrust of poverty alleviation strategy. One important requirement for this scheme to have the desired impact, however, is full coverage of the identified poor. Otherwise, individual poor households cannot be targeted on a sustained basis; there is a likelihood that `A' gets the benefit today and `B' gets the benefit tomorrow and so on, with few of them getting enough out of the scheme to pull them out of poverty, and keep them out of it. In Tamilnadu, this task is now manageable, because the size of the problem that remains to be tackled has shrunk. In our estimates of resource requirements, we have tried to allow for complete coverage of the estimated poor.

It should be fairly easy to build in synergy between poverty alleviation and policy interventions in other areas through the type of assets that is created. Apart from the rural roads mentioned above, other assets like drainage systems

for better sanitation, and consequent improvement in health, water conservation tanks for better water availability and other environmental benefits, and construction of educational or health facilities can provide multiple benefits to the rural community.[27] There is obviously a larger role for decentralisation in the choice of desirable assets to be created, apart from the identification of the beneficiaries and monitoring of actual implementation.

In Tamilnadu, the success of interventions to reduce birth and death rates over a period has resulted in the phenomenon of aging of the population of the state and an increase in the dependency ratio. In this situation, it becomes important to devise interventions for the benefit of the aged, not only those who are poor, but also for those who can pay for the services. While the market can perhaps respond to the demand for the paid services, the concerned group is a vulnerable one whose welfare needs to be carefully monitored to prevent exploitation. For those who cannot pay, both financial and other kinds of help (like old age homes) are needed; the government should not consider its duty done by only providing financial assistance. Because of their vulnerability, financial assistance can easily be misappropriated.

[27] In fact, schemes under NREGA in Tamilnadu give top priority to water conservation and soil conservation/flood protection.

V. Human Development and the Poor

5.1 Introduction

In a mixed economy like India, where most services including the social ones important for human development are available from private suppliers for all that can afford to pay, the primary responsibility of the public sector ought to be directed at the poor, at least until this vulnerable section of the citizens is reasonably taken care of. In this perspective, public interventions in the social sectors should dovetail with direct poverty alleviation strategies adopted by the government and looked at as a part of the anti-poverty strategy. A further broadening of perspective can include most growth-oriented public interventions also as anti-poverty activities since growth ought to improve economic conditions all round, even if at varying rates. Thus, there can be three levels of attack on poverty: (a) by raising the rate of growth of the economy; (b) by improving the capacity of the poor to lift themselves out of poverty; and (c) by promotions more direct poverty alleviation programmes. Clearly, the first two are more long-term strategies for what can be termed 'poverty removal' while the third, being only redistributive in nature, is a relatively short term strategy that may not be sustainable in the long run without the other two. In practice, no government can afford to completely ignore any one of the three strategies outlined above, but the relative emphasis in terms of budgetary allocations may differ depending on several factors like political ideology, extent of poverty and relative importance of different vote banks. In the next section, we examine budgetary data to form a rough idea about such balance.

5.2 Pro-poor Public Expenditures

To examine the allocation of government expenditure between (i) purely administrative expenditures (including identifiable administrative expenditures in all major heads); and (ii) other expenditures (presumed to confer some benefit on the citizens), and within the second category, between (a) those intended to benefit the poor more directly (pro-poor) and (b) those intended to promote growth of the economy and benefit the poor more indirectly (growth oriented)[28], we classify all government expenditure into one of these categories at the minor (sub-minor in some cases) head level. The classification is purely on the basis of informed judgment and not any objective criteria or a full-fledged incidence analysis.

Essentially, classification by intent is fairly non-controversial in some cases like poverty alleviation programmes (obviously pro-poor) or capital expenditures in the power sector (clearly growth-oriented). But there is a large

[28] This classification actually combines expenditures of types (b) and (c) of section 5.1 above.

array of public expenditures that do not fall so obviously into one or the other category. These are the cases where subjective judgement, and *a priori* information in the case of particular schemes, is used for the classification by intent.[29]

Table 5.1: Classification of Government Expenditure in Tamilnadu

Description	Amount (Rs. lakh)			Shares in Respective Totals		
	2003-04	2004-05	2005-06	2003-04	2004-05	2005-06
A. Revenue Expenditure	2519291	2988850	3165308	100.00	100.00	100.00
i. Pro-poor Programmes	647694	662886	747050	25.71	22.18	23.60
ii. Development-oriented programmes	582818	703263	779890	23.13	23.53	24.64
iii. Administrative services	1288779	1622701	1638367	51.16	54.29	51.76
B. Capital Outlay	358410	456396	414546	100.00	100.00	100.00
i. Pro-poor programmes	45441	191245	139468	12.68	41.90	33.64
ii. Development-oriented programmes	287730	227579	262516	80.28	49.86	63.33
iii. Administrative services	25238	37572	12561	7.04	8.23	3.03
C. Loans and Advances	101057	108584	14739	100.00	100.00	100.00
i. Pro-poor programmes	1475	593	0	1.46	0.55	0.00
ii. Development oriented programmes	99582	107991	15208	98.54	99.45	103.18
iii. Administrative services	0	0	0	0.00	0.00	0.00
D. Total Expenditure	2978758	3553830	3594593	100.00	100.00	100.00
i. Pro-poor programmes	694610	854724	886519	23.32	24.05	24.66
ii. Development-oriented programmes	970130	1038833	1057614	32.57	29.23	29.42
iii. Administrative Services	1314018	1660273	1650928	44.11	46.72	45.93

Table 5.1 provides the summary of the classification exercise. The picture shows that overall public expenditure on poor in Tamilnadu has increased marginally from 23.3 to 24.7 between 2003-04 and 2005-06. This increase is due to higher capital expenditure on rural water supply, particularly in tribal sub-plan and special component plan. Considering the break-up of the total expenditures, the share of the pro-poor ones in revenue expenditure has declined a little from 25.71 to 23.60 percent and has increased in capital expenditures from 12.68 to 33.64 percent. The jump in capital expenditures is primarily due to higher allocations under rural water supply schemes in tribal dominant areas in 2004-05 and 2005-06, and is large enough to more than make up for the decline of the share of pro-poor expenditures in the revenue expenditures, despite the substantially larger share of the latter as compared to capital expenditures in total state government expenditures. But pro-poor spending by the state government through lending is negligible and declining. This is because entire assistance to the poor is through direct spending and subsidies rather than lending. It may be noted here that the loans to the poor as a part of the direct poverty alleviation programmes are given by the scheduled commercial banks outside the government budget.

[29] For a more detailed study on which the methodology for this section is based, *see*, Sen and Chand (2004)

In real terms, there has been an increase of about 20 percent in the pro-poor expenditures between the two years examined, but that is almost entirely ascribable to the increase in total expenditures. As percentages of GSDP, of the total state expenditures of 16.93, 17.70 and 16.08 percent in the years 2003-04, 2004-05, and 2005-06, pro-poor expenditures account for 3.95, 4.26, and 3.97 percentage points, growth-oriented expenditures for 5.52, 5.17, and 4.73 percentage points and administrative services (including interest payments) account for the rest.

Table 5.2: Government Expenditure on Social Services in Tamilnadu

Description	Amount (Rs. lakh)			Shares in Respective Totals		
	2003-04	2004-05	2005-06	2003-04	2004-05	2005-06
A. Revenue Expenditure	873267	1056404	1130149	100.00	100.00	100.00
i. Pro-poor programmes	463160	486591	541780	53.04	46.06	47.94
ii. Development-oriented programmes	347561	369017	416792	39.80	34.93	36.88
iii. Administrative services	62547	200796	171577	7.16	19.01	15.18
B. Capital Outlay	150444	244947	120030	100.00	100.00	100.00
i. Pro-poor programs	43792	149472	76097	29.11	61.02	63.40
ii. Development-oriented programmes	106653	95475	43933	70.89	38.98	36.60
iii. Administrative services	0	0	0	0.00	0.00	0.00
C. Loans and Advances	49924	17546	4475	100.00	100.00	100.00
i. Pro-poor programmes	589	403	0	1.18	2.30	0.00
ii. Development-oriented programmes	49335	17143	4475	98.82	97.70	100.00
iii. Administrative services	0	0	0	0.00	0.00	0.00
D. Total Expenditure	1073636	1318898	1254654	100.00	100.00	100.00
i. Pro-poor programmes	507540	636466	617877	47.27	48.26	49.25
ii. Development oriented programmes	503548	481635	465200	46.90	36.52	37.08
iii. Administrative services	62547	200796	171577	5.83	15.22	13.68

Considering broad functional groups of services, it is expected that social services would have more of the pro-poor expenditures, given that it includes some of the categories of expenditures that are explicitly targeted towards the poor (like social welfare and welfare of the backward classes). But the exercise does not reveal any marked domination of the pro-poor expenditures in this broad group (Table 5.2), although the increase in its share in 2004-05 and 2005-06 indicates that marginal expenditures at a time of increasing overall expenditures are more likely to raise the share of the pro-poor ones.

Table 5.3: Government Expenditure on Economic Services in Tamilnadu

Description	Amount (Rs. lakh)			Shares in Respective Totals		
	2003-04	2004-05	2005-06	2003-04	2004-05	2005-06
A. Revenue Expenditure	460539	555870	576793	100.00	100.00	100.00
i. Pro-poor programmes	184534	176295	205270	40.07	31.72	35.59
ii. Development-oriented programmes	235257	334246	319852	51.08	60.13	55.45
iii. Administrative services	40748	45329	51671	8.85	8.15	8.96
B. Capital Outlay	182727	173877	281955	100.00	100.00	100.00
i. Pro-poor programs	1649	41773	63371	0.90	24.02	22.48
ii. Development-oriented programmes	181078	132104	218583	99.10	75.98	77.52
iii. Administrative services	0	0	0	0.00	0.00	0.00
C. Loans and Advances	51133	91038	10264	100.00	100.00	100.00
i. Pro-poor programmes	887	190	-469	1.73	0.21	-4.57
ii. Development-oriented programmes	50247	90848	10733	98.27	99.79	104.57
iii. Administrative services	0	0	0	0.00	0.00	0.00
D. Total Expenditure	694399	820785	869011	100.00	100.00	100.00
i. Pro-poor programmes	187070	218258	268172	26.94	26.59	30.86
ii. Development-oriented programmes	466582	557198	549168	67.19	67.89	63.19
iii. Administrative services	40748	45329	51671	5.87	5.52	5.95

In economic services, where most of the expenditures barring those on rural development and food subsidies are more growth-oriented, the share of pro-poor expenditures is comparatively small as expected, at a little over a quarter of the total (Table 5.3). It may be of interest to note that the dominance of the growth-oriented expenditures is seen in all the components (revenue, capital, and loans), but is much less in the revenue expenditures. Again, this is not unexpected since the capital expenditures and loans are primarily for investment in physical infrastructure, which are not overtly pro-poor.

In sum, the balance of strategies appears to be favouring growth somewhat little as compared to more direct pro-poor expenditures. But this is a very tentative observation because of the methodology adopted for this analysis. Further, it should be noted that an analysis of only three years does not necessarily reveal a long-term trend; the current phase could easily be a correction of an earlier tilt towards higher pro-poor interventions. In fact, some of the earlier analyses of the state finances of Tamilnadu pointed out that the expenditures were consistently dominated by revenue expenditures of the pro-poor type to the detriment of capital expenditures, particularly on physical infrastructure.[30] Also, it is not difficult to imagine complementarities between the two types of expenditure, and for the full realisation of the benefits of one type of expenditure, the other type may be important. Hence, our observation above is more of a positive one with little normative content.

[30] *See*, for example, Guhan (1992), pp. 239-318, especially p. 259.

5.3 Public Spending Across Income Classes: A Benefit Incidence Analysis

Given intentions to help the poor, the distributional performance of public spending is often evaluated on the basis of the benefits derived from public spending across income classes or socio-economic groups. In this context, an approach that has been widely used for analysis is that of Benefit Incidence Analysis (BIA). BIA combines information on the unit costs of providing public services with information on the use of these services to estimate the benefits derived by different groups of individuals or households. Because of various limitations including those related to necessary information, this section uses BIA to analyse the distribution of public spending on health facilities in Tamilnadu across income quartiles in rural and urban areas in the spirit of a case study.

Ideally, unit costs of each public service provided in health facilities and their utilisation by households across income quartiles need to be measured for the analysis. However, non-availability of data on utilisation of each public service provided in health facilities combined with the inability to decompose information on public spending on health facilities for individual services restricts the analysis to a relatively aggregate level. Specifically, the analysis here focuses on six services for which information on utilisation was available from the 60th round of NSSO data 2004: inpatient services (excluding childbirth); outpatient services; inpatient services related to childbirth; antenatal care services; postnatal care services; and immunisation services. A recent benefit incidence analysis of health expenditure in India (NCAER 2002), argued on the basis of facility-level studies, that public expenses on a single inpatient was about six times the expenditure on an outpatient in public hospitals. The corresponding expenses in PHCs and dispensaries were about half of that in public hospitals. Also, expenditure on ante-natal care, post-natal care and immunisations was argued to be half of that in PHCs and dispensaries. In our analysis, we have borrowed these norms from the NCAER study. However, as the 60th round of NSSO data does not provide information separately for PHCs and public hospitals, we assume that expenses for inpatient cases are in general, six times higher that the expense for outpatient visits, that for childbirth about half the expense of that of an inpatient visit for other cases and about one-fourth of that of an outpatient visit for ante-natal care, post-natal care and immunisations. As the 60th round of NSSO data does not provide information separately on immunisations from public and private sources, we assume that immunisations from public sources across quartiles are in the same proportion as that of ante-natal care from public sources. The assumption is based on the fact that both ante-natal care and immunisations are part of maternal and child-care activities provided by similar public sources. The state's budgetary (revenue) expenditure on health culled out from the detailed demand for grants in budget documents is used, along with these norms taken from the NCAER study, to estimate the unit cost of each public service. Care is taken to include only expenditure that is directly incurred in health facilities. Again, following the NCAER study, we

assume that half of the expenditure on disease control, and medical education and training, whose benefits accrue partly to people outside health facilities also, is incurred through health facilities. Also, expenditure on direction and administration is excluded as in the NCAER study. Budgetary receipts on payments from patients are then deducted from the total state expenditure on health facilities to arrive the net public spending.

A conceptual problem in the methodology used arises from the fact that, apart from public services in health facilities for which information on utilisation is available, there are services like family planning activities, which are provided in health facilities, yet no information on utilisation of these services in health facilities across income quartiles is available. While this compels one to exclude these services from the utilisation aspect in the analysis, the same cannot be excluded from public spending. To the extent that family planning services from public sources in Tamilnadu are used relatively more by the poorer sections of the population, the benefits of public spending on health facilities accruing to the poorer sections of the population are underestimated in the analysis. Also, apart from spending on health facilities, the state spends a substantial amount on other preventive health care, whose benefits at the margin are higher for the poorer sections of the population than the richer sections. This again underestimates the benefits of public spending accruing to the poorer sections of the population.

Our analysis suggests that in both the rural and the urban areas of the state, public spending on health facilities benefits the poorer half of the population more than the richer half (Table 5.4). However, the benefits accruing to the poorer section (two lower quartiles) of the population relative to the richer section (two upper quartiles), is higher in the urban areas than in the rural areas. This is primarily driven by the fact that richer sections of the population, particularly the topmost quartile in the urban areas use private sources to a much greater extent than all other groups. Also, in the urban areas, both for inpatient and outpatient treatment, public sources are used more by the lower half of the population, than the upper half. In contrast, in the rural areas, particularly for inpatient treatment, the upper half of the population receives a higher share of the benefits of public spending on health facilities than the lower half.

Table 5.4: Distribution of Benefits of Public Spending for Different Public Services across Income Quartiles in Rural and Urban Areas

Quartiles	Inpatients	Outpatients	Ante-natal care	Post-natal care	Immunisations	Child birth	Total
			Rural				
lowest 25	19	30	30	30	41	30	29
25 to 50	27	23	32	37	27	40	24
50 to 75	28	21	21	19	17	22	22
highest 25	26	27	17	14	15	9	26
			Urban				
lowest 25	40	39	38	26	42	37	39
25 to 50	27	22	28	36	28	31	23
50 to 75	22	29	25	25	21	23	28
highest 25	11	10	9	13	9	9	10

The evidence that between 1995-96 and 2004, there has been a shift towards public sources for inpatient treatment by the topmost quartile in the rural areas and towards private sources by the three lower quartiles indicates that over the years, the benefits of public spending in health facilities has increased in favour of the richer sections of the rural population. This is a cause for concern. The state has to take necessary steps to improve the functioning of the district, *taluk* and non-*taluk* hospitals to help the poor in acquiring higher benefits of public spending in health facilities. Excluding the case of inpatients in rural areas (both excluding and including childbirths) and post-natal care in urban areas, the lowest income quartile receives the highest share of the benefit of public spending in health facilities for every service provided in the facilities in both the rural and the urban areas.

Summing up, the broad expenditure strategy of the state appears to have shifted somewhat from the patterns noted by past researchers in that the expenditures are more growth-oriented, with increased emphasis on capital expenditures in physical infrastructure. The incidence pattern of a subset of health expenditures shows that while the poor do benefit from these public expenditures more than the better-off, this relative advantage is now less than before, mainly because of less utilisation of public services. With the shifting strategy for public expenditure – which may well be called for – it becomes more important for the state to ensure that the benefit incidence favours the poor. In this context, lower utilisation of public facilities by the poor in rural areas calls for a closer look at the demand for such services and an adjustment in the within-sector allocations to provide what the poor want.

VI. Financing Additional Spending Requirements

6.1 Introduction

For the states in India, financing additional expenditures on any (group of) head(s) has to come from one of the following sources: (i) additional resource mobilization; (ii) increased borrowings; (iii) reallocation of total expenditures; and/or (iv) increased central transfers. Of these, option (ii) is one we do not consider, as the state already has a substantial debt burden that has to be serviced; any additional debt that does not result in an immediate investment that yields in a stream of returns will add to the deficits. This the state cannot afford, having committed itself to deficit targets set in its fiscal responsibility legislation.

Bilateral/multilateral assistance can be thought of as another source of funds, but technically it is part of the central transfers since all such assistance is channeled through the central government. Similarly, greater expenditure efficiency will also result in freeing up resources that can be used for additional expenditure in designated areas; but these will also take the form of reallocation of expenditure across services or perhaps intra-service reallocation.

Finally, private funds can also be mobilised to share the costs of additional expenditure responsibilities through private-public partnerships (PPP). This is an option that not only is feasible, but is perhaps desirable under various scenarios. However, by its very nature, it is difficult to estimate with any degree of confidence. We have therefore discussed the scope and alternative mechanisms of private funding of public initiatives for human development in the context of specific services and do not include it here, except as a residual.

6.2 Estimated Resource Requirements from Selected Services

Gathering the additional resource requirements from the preceding discussions, the total of those identified work out to Rs. 1945, 1960,1933,1958, and 1991 crore, for the years 2007-08 to 2011-12, at the base year (2003-04) prices. Assuming an annual inflation rate of six percent from the base year, these figures work out to Rs. 2456, 2623, 2743, 2945 and 3174 crore. These sums are not very large in comparison to the total expenditure of the Government of Tamilnadu and it should not be very difficult to raise these resources by tapping the sources mentioned above. We carry out illustrative estimates of two of the sources listed above that are within the control of the state government: additional resource mobilization, and reallocation of expenditures.

6.3 Estimate of Additional Resource Mobilisation

The methodology for estimation essentially assumes that the overall revenue base is the GSDP of the state. For this exercise, we consider tax revenue only as that is the major revenue source for the state, as in almost all other states. Accordingly, we express the own tax revenue receipts of the state as a ratio of the GSDP for a number of years. Identifying the highest ratio – which happens to be the year 2004-05 – as defining the tax revenue envelope, we estimate the revenue potential of any year by applying this ratio to the (estimated) GSDP to derive the potential own tax revenue. While this methodology oversimplifies the process of tax revenue generation, it is a reasonably good approximation because of the strong and overwhelming relationship of GSDP with own tax revenues that most empirical studies exhibit. Further, we use the highest ratio historically achieved by the state in the recent past in the belief that postulating the state's own best effort is more appropriate and realistic than using a norm derived from a cross-state comparison. These estimates are then compared to the base year (2004-05) figures to assess the prospects of additional resource mobilisation in the next five years. Table 6.1 provides the results of this exercise.

Table 6.1: Additional Revenue Mobilisation through State's Own Taxes

(Rs. crore)

Tax Revenue/ Year	2004-05 (Actual)	2007-08 (Estimate)	2008-09 (Estimate)	2009-10 (Estimate)	2010-11 (Estimate)	2011-12 (Estimate)
Own Tax Revenue	19354.47	27630.37	30612.96	33917.50	37578.76	41635.23
Additional from Base Year		8275.91	11258.49	14563.04	18224.29	22280.77
GSDP	188921	269703	298816	331072	366810	406406

Of course, it is not our contention that the entire additional resource mobilisation will be available for only the required additional expenditures that we have estimated. There are normal increases (in current prices) in almost all heads of expenditures, and there will also be competing claims for extra resources from several other departments. Further, the resource requirements are also likely to increase with inflation. In any case, although our estimates give an impression of precision, they are far from precise by the very nature of such attempts. This exercise merely underlines the fact that the approximate size of the additional expenditure requirements is such that they should not be difficult to finance from the state's own resources under reasonable assumptions. It is pertinent to note that the above exercise does not cover non-tax revenues; although non-tax revenues constitute a smaller part of the total revenues at present, the large subsidies or unrecovered costs in several services termed as 'non-merit' goods indicate substantial scope for additional revenues from this source as well.

The largest amounts of additional taxes would come, of course, from the sales/ value-added tax given its dominance in the own taxes of the state. It may be of interest to note that the additional revenues from state excise duties constitute the next largest source of additional tax revenues, followed by stamp duties and registration fees, and taxes on vehicles (motor vehicle taxes and passenger and goods taxes).

6.4 Reallocation of Expenditures

In most studies of government expenditure, policy priorities are either assumed to be given, or are part of the recommendations based on subjective assessments and/or perceived shortfalls in specific areas. Moreover, revealed priorities for various sectors are not easily discernible from their shares in total expenditure, since the expenditure patterns are determined both by the quantity of the service supplied and its unit cost.[31] Thus, revealed priorities in terms of expenditure shares can differ substantially from priorities in terms of units supplied of the service concerned. Further, there is no strong reason to prefer one over the other. Thus, there are two major stumbling blocks to an assessment of public expenditure patterns *vis-a-vis* policy priorities: (i) a definitive, or objectively determined pattern of priorities is not available; and (ii) even if it were available, there is no unique method of assessing public expenditure patterns against the given priorities. The standard consumer theory solves a similar problem through the maximisation of the utility function in which various commodities enter as arguments, subject to a budget constraint. In this case, it is the utility function of the government that is missing.

In what follows, a crude but objective method is developed to address both these problems and the method is applied to data for the state of Tamilnadu. This leads to some recommendations on the reprioritisation of government expenditure in the state.

The basic assumption that is made here is that each state in the country compares itself with other states and strives to achieve the best that has been achieved by any state in each sector.[32] The corollary of this is that the further the state is from the best in any sector, the greater is the priority it places on that sector. The comparison is made in terms of available physical performance indicators in each sector, which we denote by P_{ij} where i indicates sectors and j indicates states. An absence of the state subscript represents the state under consideration, in the present case Tamilnadu. The best (and thus the target) is indicated by an asterisk, so that P_{ij}^* indicates the best performance among all

---

31 This observation was originally made by Kaushik Basu.

32 Such a hypothesis, known as 'yardstick competition' in the fiscal federalism literature, was first put forward by Salmon (1987). It has been empirically tested by Besley and Case (1995).

states. As per our assumption, the priorities for each sector, denoted by W_i are given by

$$W_i = (P_{ij}^* - P_i)/ P_i \quad (1)$$

This essentially amounts to asserting that the weight for each sector is given by the percentage increase that would be required in the sectoral indicator to reach the best performance level by any state. Denoting unit costs for the state under consideration for each of the services by C_i , the normative allocation for each sector should then satisfy

$$\Delta TEXP = k\Sigma W_i C_i, \quad (2)$$

where TEXP is total public expenditure of the state and k is a constant multiple that is determined each year by the overall expenditure envelope available. This is simply saying that the normative proportions of incremental public expenditure for each service is given by the cost of reaching best performance levels for each sector.

This simple model allows us to construct a pattern of priorities and assess the allocation of public expenditures against the priorities thus derived. Further, it allows us to recommend changes in the allocation of total public expenditure on an objective basis.

While the methodology appears simple, its application is not, mainly because of data limitations and difficulties in identifying suitable indicator(s) for each sector. Even when suitable indicators are available, estimation of unit costs for various services can pose problems. Moreover, there are large parts of government expenditure, primarily in general services, for which it is difficult to identify a performance indicator. However, one advantage of this construct is that if one believes that certain parts of the public expenditure are non-negotiable or pre-determined, then the method can be applied to a total expenditure net of these parts. This can alternatively be viewed as a method of appropriate allocation of a sub-total within the total government expenditures. As for the unit cost estimates, we again use an admittedly crude method that nevertheless can be used for this purpose provided no major structural or behavioural changes take place.

Suppose for any service *i*, the initial value of the indicator for Tamilnadu is given by $P_{i,0}$ and the same for the latest year is given by $P_{i,t}$. Then our estimate of unit cost is given by

$$C_i = \Sigma PEXP_i/(P_{i,t} - P_{i,0}), \quad (3)$$

where the summation is defined over the period 0 to t in constant prices. We should hasten to add that although this method apparently ascribes all

changes in the performance indicator to government expenditures alone, that is not our contention. The unit costs estimated in this manner are used for the limited purpose of obtaining a rough estimate of (implicitly) necessary government expenditure for each of the services to reach the yardstick, *assuming no major change in the covariability in the pattern of other variables that determine the value of the indicator*. In other words, the change in the indicator over the reference period is associated with a certain amount of government expenditure in real terms, and we hypothesize that while prioritising government expenditures, the same association will continue unless there is a substantial change in the other determinants of the indicator value.

The sectors to which we apply this method of prioritising government expenditure in Tamilnadu and the achievement indicators used for each of the sectors is listed in appendix 6.1. It may be noticed that the general services have been kept out of the analysis, primarily because it is difficult to think of an indicator for the purpose. Also, the general services are overwhelmingly either contractual payments (interest and salaries) or on goods and services that are in the nature of "overheads of the government'. We have also excluded some other sectors where the expenditures are primarily in the nature of transfer payments and associated administrative costs. The results of the exercise using the expenditure data for Tamilnadu for the years 2003-04 and 2004-05 (it may be remembered that this method is applied to the *change* in the overall expenditure envelope) are reported in table 6.2. The table provides the estimated normative expenditure pattern that would have resulted from application of this methodology in 2004-05 as against the actual pattern.

Table 6.2: Actual and Estimated Normative Expenditures on Selected Services in Tamilnadu (Rs. lakh)

Sectors	Actuals 2004-05	Estimated 2004-05
Education	469666.27	426321.59
Health	135194.90	126892.16
Water Supply	153142.34	69481.05
Housing	41128.49	15297.64
Labor and Employment	10250.48	43802.36
Rural Development	96049.57	90888.91
Urban Development	66392.07	99110.60
Agriculture and Allied	139102.25	120007.69
Irrigation and Flood Control	84730.09	115360.25
Energy	114941.07	64048.24
Industry & Minerals	24562.86	22425.63
Transport	148052.26	289576.53
Total of the above	1483212.65	1483212.65

It can easily be seen that the application of the method described above produces a result that may not be to our liking since the allocations to most of the social sectors except housing, labour and employment and urban development turn out to be lower as compared to the actuals. A moment's reflection would, however, tell us that such an outcome results from the fact that the relative ranking of Tamilnadu among Indian states is much higher in general in terms of social indicators than in terms of physical infrastructure. Since the method is designed to put greater weightage on the areas where the state's rankings are comparatively low, the logical outcome of such an exercise would be to de-emphasise the social services and increase the share of physical infrastructural services in the budgetary allocation.[33]

While the results reflected here should not be interpreted to argue for a slowdown of expenditures on human development, it does indicate the strong claim that other (than social sector) services have on government expenditure and the low realistic probability of being able to raise resources for human development through reprioritisation of government expenditures.

6.5 Central Transfers

It is difficult to predict future trends in central transfers under various schemes. To the extent such transfers are also allocated on the basis of some indicators of need in the specific areas, the *inter se* share of Tamilnadu is not likely to increase because of its relatively high ranking in most of the social sector indicators. The only possibility of increasing central transfers lies in the enlargement of the overall transfer pool. There are, in fact, strong indications of such an outcome. First, general purpose transfers like shared taxes are likely to increase with rising collections of central taxes. Second, particularly strong performance of income tax and tax on services implies that the collections of education cess should also rise commensurately. At least a part of this should accrue to all states including Tamilnadu. Third, there is a reasonable probability of increased central support for implementation of the *National Rural Employment Guarantee Act* with its coverage expanded to the entire country. Further, the coverage of the National Old Age Pension Scheme (NOAPS) has also been expanded to cover all BPL persons above the age of 65; this should allow the state to substitute some of its own resources with central transfers on this count. On the other hand, the union has set up of the Sixth Central Pay Commission which is likely to trigger pay revisions at the state level also and

[33] Apart from this general explanation, a rather mechanical explanation lies in the almost doubling of the actual expenditure on the transport sector in the estimated, which preempts allocations for all other sectors to some extent. The reason for the high estimate for transport is that (a) large expenditures to achieve a small increase in the indicator, so that unit costs estimated are very large, and (b) the gap between the highest value of the indicator (for Punjab) and the indicator value of Tamilnadu is quite large.

cause additional expenditures. The extent of this likely additional expenditure is at present uncertain, though. Further, its timing also cannot be predicted with confidence.

In sum, it appears that any additional expenditure that the state may have to incur on human development would have to come essentially from its own resources. There is also little realistic possibility of any major reallocation of expenditures in favour of the social sectors in view of the strong competing claims of the infrastructure sector. Thus, additional resource mobilisation through tax and non-tax sources seems to be the main source of funds for additional expenditure requirements in the social sector. Our estimates indicate that this should not pose a major problem for the state if it can sustain its tax performance exhibited in recent years. The probabilities are high that it will, since the factors that drive tax collections (broadly speaking, economic growth) are likely to continue their northward trend in the medium-run. Any further shortfall of resources, likely to be small, can be probably made up with private financing. The latter can take various forms depending on the sector concerned, but in general, the most promising avenue is ensuring involvement of large business enterprises in selected sectors. This can be for their own employees in the first place, with expansion of capacity to include others subsequently. The state government may even consider a policy of incorporating certain social responsibilities of large private sector projects at the time of initial negotiation. In this context, it must also be reiterated here that the health sector is already largely privately financed, that too through essentially out-of-pocket expenditures. Any reform in this sector should seek to reduce the burden of health expenditures on the consumers, particularly the poor.

VII. Summary and Conclusions

It is widely acknowledged that Tamilnadu has performed better than most other states in India in terms of human development. In all the three major areas studied in this report – education, health, and poverty – the state is well on its way to achieve the MDGs as well as the goals set out by the Planning Commission. The recent buoyancy in tax collection gives it the elbow room for maintaining, if not increasing, its allocation in human development sectors.

In education, Tamilnadu is close to achieving the target of universal elementary education and ensuring that all school-going children complete a full course of elementary education by the end of the 11th Five Year Plan. Since access conditions have been largely met, the focus has shifted to upgrading existing school infrastructure and facilities in keeping with the norms of the *Sarva Shiksha Abhiyan*. One area that needs special attention, however, is the quality of education in government schools. Innovative methods are being tried out with greater involvement of private sector, which should ease the burden on the state exchequer. Additional resource requirement for infrastructure and quality of education is of the order of Rs. 1300 crore over the 11th Plan period. However, the expansion in secondary education has to be given urgent attention as the increase in enrolment during the SSA will translate to higher demand for secondary education within the next five years.

In terms of health indicators, Tamilnadu ranks high among Indian states, and is rapidly catching up with Kerala. The total fertility rate is below 2, implying that the population has stabilised at replacement levels. Other health indicators such as infant, child and maternal mortality rates have achieved the MDG and the 10th Plan targets. Tamilnadu has set itself stiffer goals in the medium term, and its performances *vis-à-vis* state-level goals are also commendable. The only significant area that needs attention is the prevalence of vector-borne illnesses in the state, which are linked to low achievements in sanitation and sewerage and HIV/AIDS. The total cost of achieving the normative targets for health as well as water supply and sanitation is Rs.2200 in fixed cost and an additional recurring expenditure of Rs.664 crore per year, both at 2003-04 prices, mainly for staff and medicines in the health sector.

The situation is manageable as far as poverty alleviation is concerned. The coverage of social safety nets such as old-age pension scheme is almost full in terms of eligible persons, and the additional expenditure is projected for maintaining the social welfare schemes at the current level only to allow for the change in rate. However, the target of reducing poverty by 10 percentage points between 1999-00 and the end of the next Plan period will require around 40 lakh persons to be covered by wage employment, with an additional expenditure of Rs.212 crore per annum in 2003-04 prices. Since most of the major poverty

alleviation schemes are centrally sponsored, the additional burden on the state exchequer will not be very high.

The ultimate question is: how will the increased resources needed for achieving the human development targets be mobilised? In terms of the normative framework introduced in chapter VI, it is interesting to note that it is difficult to argue for reallocation in favour of social sector expenditure given the already high levels of allocation favouring the social sectors in Tamilnadu. Conversely, infrastructure needs are deemed to be relatively high. The analysis in chapter V indicates that a shift in public expenditure strategy is probably taking place. In such a scenario, the only viable option for public financing of human development in Tamilnadu is to finance the resources needed for human development from its own tax revenue. Given the projected additional tax revenue of just over Rs.8000 crore in 2007-08 rising to over Rs.22000 crore by the terminal year of the next Plan period (from the base year of 2004-05), mobilising the required additional resources for human development is well within the capability of the state government. However, the government has to ensure that the benefits of the extant and incremental public services are available to the poor; our limited exercise in chapter V indicates otherwise. Clearly, given the expenditure envelope, policies have to be devised to improve appropriateness for and access of the poor to these services and reduce their supplementary costs.

References

Acharya, A. and M. K. Ranson, 2005. "Healthcare Financing for the Poor: Community-based Health Insurance Schemes in Gujarat", *Economic and Political Weekly*, September 17.

Bennett, S., A. Kelley, and B. Silvers, 2004. 21 *Questions on CBHF: An Overview of Community Based Health Financing*, Bethesda, MD: Partners for Health Reform Plus.

Besley, T. and A. Case, 1995. "Incumbent Behavior: Vote-seeking, Tax-setting, and Yardstick Competition", *American Economic Review*, 85(1): 25-45.

Government of India, 2002. *All India Education Survey*, New Delhi: Ministry of Human Resource Development.

Government of Tamilnadu, 2005. *Report on Public Instruction in Tamilnadu, 2002-03*, Chennai: Directorate of School Education.

Grover, S. N. Singh, and N. Stromquist, 2002. "The Quality of Primary Education: A Case Study of Maurai and Villupuram Districts in Tamilnadu, India", Center for International Development, Harvard University. (*mimeo)*

Guhan, S, 1992. "State Finances in Tamilnadu, 1960-90", in: Bagchi, A., J.L. Bajaj and W. A. Byrd (*eds*). *State Finances in India*. New Delhi: Vikas Publishing House.

Gupta, I. and M. Trivedi, 2005. "Social Health Insurance Redefined: Health for All through Coverage for All", *Economic and Political Weekly*, September 17.

Heaver, R, 2002. *India's Tamilnadu Nutrition Program: Lessons and Issues in Management and Capacity Development*, Health Nutrition and Population (HNP) Discussion Paper, Washington DC: The World Bank.

Irudaya Rajan S. 2006. "Social Safety Nets for the Vulnerable Poor and Elderly in India", in (*eds.*) Srivastava, N., P. Sharma *et.al. Protecting the Vulnerable Poor in India – The Role of Social Safety Nets.* New Delhi: World Food Programme.

Kremer, M., N. Chaudhury, H. Rogers, S. Muralidharan, and J. Hammer, 2004, "Teacher Absence in India: A Snapshot", *Journal of the European Economic Association.*

Kuruvilla, S. Mingwei Liu, and P. Jacob, 2005. "The Karnataka Yeshasvini Health Insurance Scheme for Rural Farmers and Peasants", Paper presented at *Social Science and Development Conference*, ISEC, Bangalore.

Lalitha, N, 2005. "Providing Health Security through Rational Drug Approach: Evidence from Tamilnadu", Discussion Paper, Trivandrum: Centre for Development Studies. Accessible at: www.cds.edu/adc2004/Lalitha.pdf

Mehta, A, 2004. *Progress of Literacy in India.* New Delhi: National University of Educational Planning and Administration.

Mehta, A, 2006. *State Report Cards.* New Delhi: National University of Educational Planning and Administration.

Mehta, J. 2004. "Poverty in India". Accessible at: http://www.wakeupcall.org/administration_in_india/poverty_line.php

Musgrove P., R. Geramdini, and G. Carrin, 2002. "Basic Patterns in National Health Expenditure. Special Theme – Commission on Macroeconomics and Health", *Bulletin of the WHO*, 80(2).

Pratham, 2008. *Annual Survey of Education Report.* New Delhi.

Pritchett, L. and V. Pande, 2005. "Making_Primary Education Work for India's Poor: A Proposal for Effective Decentralization", New Delhi: The World Bank. *(mimeo)*

Salmon, P, 1987. "Decentralisation as an Incentive Scheme", *Oxford Review of Economic Policy*, 3(2):24-43.

Sbarbaro, J, 2000. "Trade Liberalization in Health Insurance – Opportunities and Challenges", CMH Working Paper WG 4:6, Commission on Macroeconomics and Health, World Health Organization, Geneva.

Sen, T.K. and D. Chand, 2004. "Public Expenditure for the Poor in Andhra Pradesh", National Institute of Public Finance and Policy (NIPFP), New Delhi. *(mimeo)*

Tilak, J.B.G and A.M. Nalla Gounden, 2006. "Private Costs and Public Financing of Elementary Education in a High Achiever State: Tamilnadu", in: Santosh Mehrotra *(ed.) The Economics of Elementary Education in India*, New Delhi: Sage Publishers.

TN-FORCES, 2006. *Fact Finding Report on the National Rural Employment Guarantee Scheme in Tamilnadu*, Department of Social Work, Loyolla College, Chennai.

UNESCO, 2006. *Teachers and Educational Quality: Monitoring Global Needs for 2015*. Oxford: Oxford University Press.

Van Doorslaer, E., A. Wagstaff *et.al.*, 1999. "The redistributive effect of health care finance in twelve OECD countries", *Journal of Health Economics*, 18:291-313.

Wagstaff A. and E. van Doorslaer, 1992. "Equity in finance of health care: some international comparisons", *Journal of Health Economics*, 11:361-387.