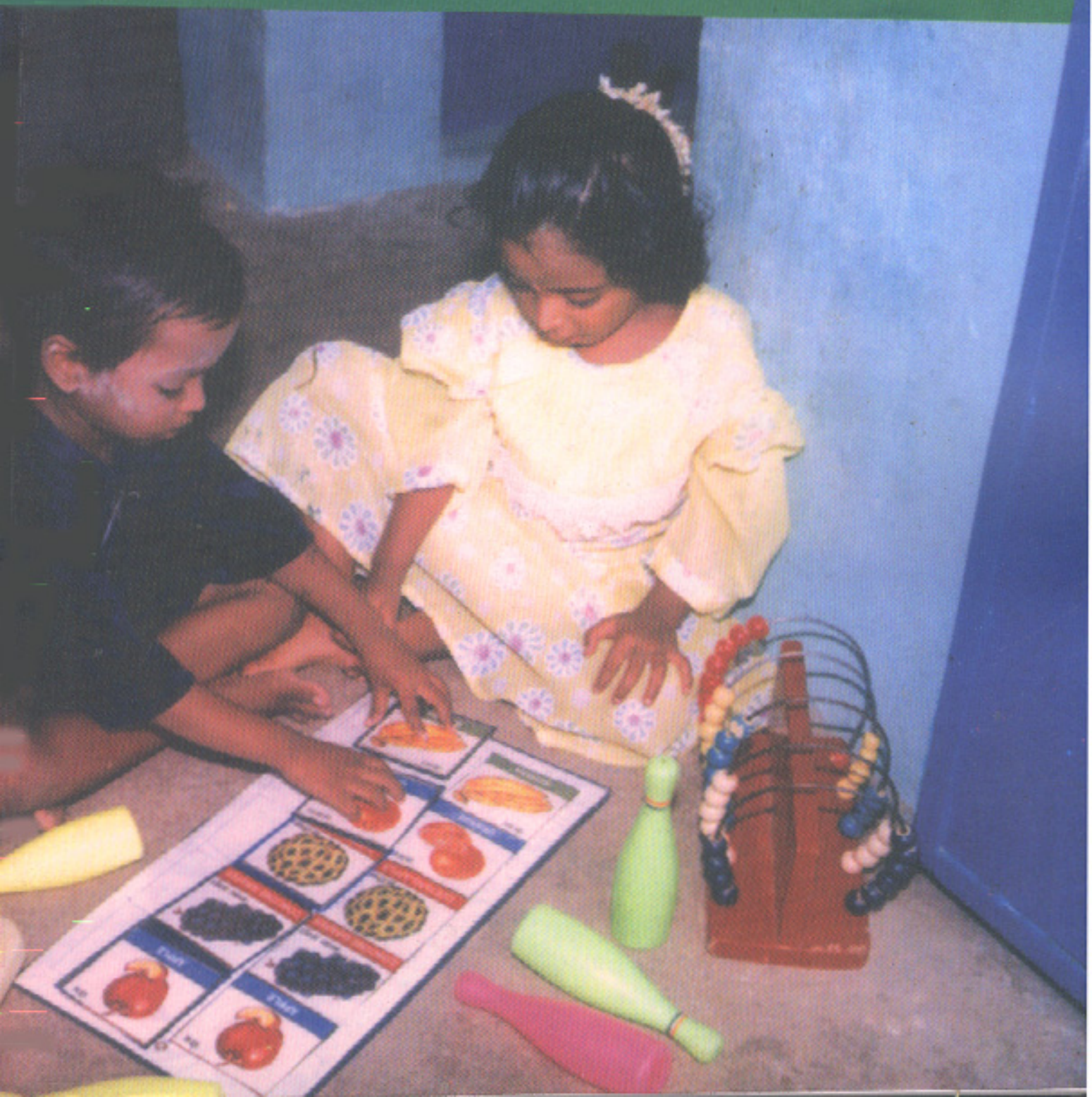
TAMIL NADU

Human Development Report



Tamil Nadu
Human Development Report

Government of Tamil Nadu
in association with

Social Science Press
Delhi
2003

Published by

The Government of Tamil Nadu
in association with
Esha Béteille
Social Science Press
69 Jor Bagh, New Delhi 110003
E-mail: beteille@del3.vsnl.net.in

Distributed by

D.K. Publishers and Distributors (P.) Ltd.
1 Ansari Road, Darya Ganj, New Delhi 110002
E-mail: dkpd@del3.vsnl.net.in

ISBN 81 87358 14 9

Front and back cover picture

Courtesy Government of Tamil Nadu

Cover design

Neelima Rao

Social Science Press logo design

Arpan Mukhopadhyay

Set in Giovanni Book
Typeset by Eleven Art, Delhi-110035
Printed by Ravindra Printing Press
1590 Madrasa Road
Kashmiri Gate
Delhi 110006

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Foreword

I have pleasure in introducing the Human Development Report for Tamil Nadu. This is the first Report of its kind for the State. The economic development of a State and higher Gross State Domestic Product does not necessarily reflect the actual well being of its people. Development objectives are being defined not just in terms of increase in Gross Domestic Product or per capita income but more broadly in terms of enhancement of human well being. The concept of Human Development Indices has, therefore, been advocated to measure the improvement and status of well-being of the people.

As the name suggests, the concept of human development focusses on the actual well-being of the people in terms of indicators like attainment of education health, life expectancy, income, access to safe drinking water, sanitation facilities etc. The UNDP has been publishing the Human Development Report since 1990. The Union Planning Commission has released the National Human Development Report 2001 recently.

The State Planning Commission took the initiative of preparing a similar report for Tamil Nadu. The preparation has been done as a totally in-house exercise in the State Planning Commission in consultation with experts and academicians. One of the main objectives has been to measure the development district-wise, thus throwing light on the areas needing improvement. In addition to Human Development Index, Gender Development Index also has been computed, bringing out the basic capabilities such as life-expectancy, literacy, income, etc. and the gender inequalities which need to be attended to in order to bring about an egalitarian society.

Tamil Nadu has a rich cultural and historical heritage. Even though the State is not endowed with rich natural resources, the State is excelling on all fronts with a well-established infrastructure, both physical and social. The report summarizes the overall development of the State. The Tamil Nadu Human Development Report will serve as an important tool in planning for growth, social justice and equity in the State. This report would help in reassessing the investment strategy and areas for future attention and, if the challenges identified in the Report are tackled, the dream of making Tamil Nadu the number one State in India will be realized.

J. JAYALALITHAA
CHIEF MINISTER
OF TAMIL NADU

Acknowledgements

The preparation of the Tamil Nadu Human Development Report has been an initiative of the Government of Tamil Nadu supported by the United Nations Development Programme (UNDP) and the Union Planning Commission. The State Planning Commission took up the assignment as a totally in-house exercise. A Core Committee undertook this task, with the then Member Secretary, State Planning Commission Thiru L.N. Vijayaraghavan, I.A.S., as the Chairman, the Full Time Member of the State Planning Commission, Thiru K.V. Palanidurai, Tmt. Thangam Sankaranarayanan, I.A.S., then Secretary to Government, Planning and Development Department, Tmt. Anandi Ravichandran, I.E.S., then Adviser (IPT), State Planning Commission, Dr C. Chandramohan, I.E.S., then Director of Evaluation and Applied Research, Thiru R. Bhaskaran, I.A.S., then Director of Economics and Statistics and Dr (Tmt) Anuradha Khati Rajivan, I.A.S., Tmt. Girija Vaidyanathan, I.A.S., Tmt. Sheela Rani Chunkath, I.A.S., Thiru K. Rajaraman, I.A.S., as Members. The preparation of the TNHDR has been possible owing to the untiring efforts of this team who collected and furnished a lot of data and information and ensured that it was woven into an integrated report.

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The exercise was fully supported by the Union Planning Commission, Dr Rohini Nayyar, Adviser, Rural Development, Planning Commission and Mr B.N. Nanda, Director, Rural Development, Planning Commission, took a keen interest and guided the State Planning Commission in the effort. Dr A.C. Kulshereshtha and Dr N.J. Kurien, Adviser (Resources) provided inputs for the chapters relating to income and employment respectively.

Dr Brenda Gael McSweeney, Resident Representative, UNDP India Country Office provided consistent support to the endeavour. Dr R. Sudarshan now with the UNDPs Centre for Governance at Oslo was a prime mover behind the conceptualization and early design of the Report. Dr K. Seeta Prabhu and Dr Suraj Kumar from the Human Development Resource Centre (HDRC) provided critical inputs for the preparation of the Report with the help of their team—Aparna Pande, Elena Borsatti, Meenakshi Kathel and Trishna Satpathy.

Extensive discussions were held with the officials and the departments concerned of the Government of Tamil Nadu. A workshop was organized apart from several intellectual discussions for the preparation of the Report. The names of others who made a contribution to the Report, are listed below in alphabetical order:

Dr Almas Ali, Dr Anjana Mangalagiri, Professor S. Anandalakshmy, Dr S. Ananthalakshmi, Dr V.B. Athreya, Mrs Devaki Jain, Dr P.R. Gopinathan Nair, Dr Kamala Krishnasamy, Mr K.P. Kannan, Ms Manabi Majumdar, Dr Mina Swaminathan, Mr K. Nagaraj, Dr Padmini Swaminathan, Thiru. Paul Diamond, Dr S. Rajagopal, Mr P.S. Rana, Professor V.M. Rao, Dr Renuka Viswanathan, Ms Revathi Narayanan, Mr Sandeep Dikshit, Dr Santappa, Tmt. E.V. Shanta, Dr V. Shanthi Ghosh, Dr A. Sivakumar, Dr Solomon Benjamin, Mr V. Srinivasan, Professor S. Subramanian, Ms Sunitha Rangaswami, Dr M.H. Suryanarayana, Mr S.S. Suryanarayanan, Dr Swarna S. Vepa, Dr A. Vaidyanathan, Dr Vinod Vyasulu, Dr Vinodhini Reddy, Mr Yash P. Aggarwal.

The Directorate of Economics and Statistics provided the extensive data base and undertook the formidable task of pooling expenditure data of the Central and State samples from the National Sample Survey in order to calculate the district level poverty and income estimates. Thiru R. Bhaskaran, Thiru. Palani and Tmt. Ananthalakshmi deserve a special mention in this regard. The Census Commissioner, Dr C. Chandramouli, made available the Census data, including the provisional results of Census, 2001.

Ms Ranjini Murthy helped the Core Committee in scripting the chapter, Gender, Thiru. R. Bhakthavatsalu provided the methodology to calculate the district-wise age specific projections from the 1991 Census for calculating the gross enrolment ratio and Dr V. Soundararajan made valuable comments in the chapter, Employment, Income and Poverty.

Last, but not the least, all the officers and staff of the State Planning Commission contributed their might in making this effort fruitful.

Message

The real growth of a State is reflected through the well-being of the people. The traditional indicator of economy, GSDP, does not reveal the actual state of human well-being in the State. Any indicator reflecting the development not only illustrates the present situation but also creates an environment to frame future policies. Thus the concept of human development focusses on the people who from the society and human development must be the major objective of planning.

Through a 15-point programme launched by the Honourable Chief Minister of Tamil Nadu, the State is focussing its attention on the sustained human security and well-being. Over the past decades, we have made enormous efforts to augment growth in the fields of education, health, poverty alleviation, employment generation, nutrition, etc. Now, it is time to assess whether our investments foster sustainable economic as well as societal growth giving equal opportunities to people from all works of life.

The emphasis of the Tamil Nadu Human Development Report is on development in the spheres of education, employment and health and longevity, gender equity, and access to basic needs. These issues are discussed in detail in this report. It is equally important that while analysing the present status of development, appropriate parameters should be identified to enable the Government to evolve specific schemes to promote gender and social equity based development.

This report aims at increasing transparency and depth in the presentation of district level, rural–urban and gender-wise information, strengthening information on human development and also gender development, which will in turn enhance its utility to policy makers, researchers and all interested in the development of the State and its people.

Nobel Laureate Dr Amartya Sen and the late Dr Mahabub ul Haq deserve our gratitude for their vision in arousing global consciousness on the need to focus on human development. The support and guidance of UNDP in the preparation of this report is gratefully acknowledged. I also thank the Planning Commission, Government of India for their assistance. Finally, I congratulate the officers of the State Planning Commission and other departmental officers whose sincere and dedicate efforts helped greatly in bringing out the Report.

M S Swaminathan
Vice Chairman, State Planning Commission
Government of Tamil Nadu, Chennai

सत्यमेव जयते

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Message

Date 29th July 2002.

I congratulate the State Government of Tamil Nadu on the preparation of its first State Human Development Report, with the support of the Planning Commission and the UNDP.

There is a growing acceptability of the human development framework set out by the UNDP over the last decade, which *inter alia* recognize that income is but one dimension of the quality of life. There is no direct correspondence between measures of economic development and those of social development. Adequate provision of social services could ensure relatively better living conditions for the people. Moreover, they would create conditions that support better opportunities in the future.

The Tamil Nadu Human Development Report has put these issues within its own development perspective, bringing out the levels of attainment in respect of specific human development indicators. It is recognized that there are considerable inter-district differences in levels of achievement with respect to income, education and health indices. The HDI, which is a composite index also reflects these differences. Therefore, as a follow up to the conclusions emanating from the Report appropriate polices and programmes need to be devised and targeted to districts/blocks, which are lagging behind in respect of human development and income levels. Resources must also be allocated in a way that more backward areas receive funds. Better performance would also require greater community participation, better governance and decentralized development.

I am confident that the State Government of Tamil Nadu would take appropriate steps to reduce intra-State disparities and achieve more equitable development in the State.

(KAMALUDDIN AHMED)

United Nations Development Programme

Message

I would like to express appreciation of the Tamil Nadu Human Development Report, which shows the status, achievements and challenges, as also the way forward for achieving women's empowerment, and strategies for development of the social sectors in the State.

Tamil Nadu is the sixth State in India to bring out its State HDR, as a document of the people and blueprint for future action. The Report highlights the issues of poverty eradication, employment generation, HIV/AIDS and social security. Further, it stresses the role of government, civil society and media in the process of development.

I am very pleased that the analysis presented in the Report has emphasized decentralization and gender equity—also key themes of India's UN Development Assistance Framework (UNDAF)—as a means for attaining human development objectives.

I compliment the Government of Tamil Nadu for its sensitivity and commitment to the cause of human development, and express confidence that the Report will be an important instrument for integrating growth with human development, and mainstreaming gender and poverty issues into district planning.

Brenda Gael McSweeney
UNDP Resident Representative
UN Resident Coordinator

Introduction

> *'Human Development is defined as the process of enlarging people's range of choices. The most critical of these wide ranging choices are to live a long and healthy life, to be educated and to have access to resources needed for a decent standard of living. Additional choices include political freedom, guaranteed human rights and personal self-respect.'* (United Nations Development Programme, UNDP, 1990)

The concept of human development is much broader than the conventional theories of economic development. It goes beyond economic growth models, human resource development and other welfare approaches. Human development brings together the production and distribution of commodities and the expansion and use of human capabilities. It is a paradigm which is equally applicable to developing as well as industrial countries. Human development has four components: productivity, equity, sustainability and empowerment. Further, this concept emphasizes gender equality; as long as women are excluded from the development process, development will remain weak and lopsided. Sustainable human development implies engendering the development paradigm.

In 2000, the UN General Assembly had set eight goals for development, known as *Millennium Development Goals,* to be achieved by 2015; they are: eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality, combat human immuno deficiency virus (HIV), Acquired immuno-deficiency syndrome (AIDS), malaria and other diseases, ensure environmental sustainability and develop global partnership for development. Most of these goals have quantifiable, monitorable targets to measure progress against standards set by the international community.

The concept of human development has been used as a very powerful advocacy too, to argue in favour of pro-poor growth. It has highlighted the fact that it is not merely the quantum of growth but its distribution, which is important. To compare levels of development across countries, Human Development Reports (HDRs) have proposed simple composite indices such as Human Development Index (HDI), Gender Development Index (GDI), Gender Empowerment Measure (GEM) and Human Poverty Index (HPI) to reflect the status of human development, gender development, empowerment of women and human poverty, respectively. The parameters of HDI are life expectancy at birth (LEB), adult literacy rate and the gross domestic product (GDP) per capita (PPP US $). The parameters for GDI are the same as those for HDI but it adjusts the achievement to reflect the achievements between men and women. The GEM captures gender inequalities in female and male percentage shares of parliamentary seats, their shares of position as legislators, senior officials and management and also percentage shares of professional and technical positions and estimated earned income (PPP US $). And finally, the parameters for HPI are probability at birth of not surviving to age 60, percentage of adults (aged 16–65) lacking functional

literacy skills, percentage of people living below the income poverty line and rate of long term employment (12 months or more).

The Planning Commission (Government of India) has calculated HDI, HPI and Gender Equality Index (GEI) for the Indian States. The parameters for HDI are consumption expenditure (per capita per month), literacy rate for seven years and more, intensity of formal education (estimated), life expectancy at age one and infant mortality rate (IMR). The parameters for HPI are proportion of people living below the poverty line, proportion of population not receiving medical attention at birth, proportion of population living in kutcha houses and of people without access to basic amenities. The GEI is expressed as a proportion of attainment level of females to that of males and instead of per capita monthly expenditure, economic attainments for males and females are captured by taking the respective worker population ratios.

The State Level Human Development Reports (SHDRs) are expected to galvanize greater resources for human development priority sectors in the States, and to help improve data systems and reporting practice at the State, district and community levels. So far, twenty-two States are in different stages of preparing SHDRs. These reports can act as powerful tools to initiate widespread dialogue on developmental alternatives for States. They can also be used to support additional funding for the development programmes of States in collaboration with other international donors. So far, Madhya Pradesh, Karnataka, Sikkim, Rajasthan and Maharashtra have released their SHDRs.

Tamil Nadu is the sixth State in the Indian Union and the second South Indian State to prepare an SHDR. The Tamil Nadu SHDR is important as it provides insights into the process of development in a State characterized by heavy industrialization, urbanization, better growth rates (marginally ahead of fifteen major States) and poverty levels which are below national average. It is a relatively middle income State (fifth among major States) and boasts of impressive attainments in human development indicators. Further, its gender sensitive policies are also appreciable. In short, Tamil Nadu is a model of a middle income State that has tried to enhance the level of human development through the formulation and implementation of programmes that address the needs of the poor, vulnerable and marginal population of the State. The report not only identifies problem areas, it also assesses the successes of Tamil Nadu, especially in the areas of women's empowerment and social development. Based upon a candid appreciation of the ground reality, the document highlights the future thrust areas for the government and civil society in the State.

This is Tamil Nadu's first HDR. While this report examines the HDI in Tamil Nadu, it goes beyond the HDI in order to investigate, in greater detail, the overall human development situation in the State. In other words, the report recognizes that the HDI too is 'limiting' in the sense that other dimensions of human development such as shelter, social security and decision making etc. which are also important for increasing overall well-being are not necessarily captured by the HDI.

The factors specific to Tamil Nadu's human development achievements are detailed in this report. The report not only serves as a summary of the human development scenario in Tamil Nadu, but also seeks explanations as to why the State has fared well in certain areas but not in others. Factors contributing to human development are disaggregated and analysed at the district level with a view to understanding the regional disparities and the reasons behind them. The report also highlights the policy interventions that are required to correct such imbalances. There is no doubt that in the years to come, the Tamil Nadu HDR will become an important tool in planning for growth, social justice and equity in the State.

1. Tamil Nadu—A Profile

Chapter

1

Tamil Nadu—A Profile

Tamil Nadu, the southern-most State of India, nestles in the Indian peninsula between the Bay of Bengal in the east, the Indian Ocean in the south and the Western Ghats and the Arabian Sea on the west. In the north and west, the State adjoins Karnataka, Andhra Pradesh and Kerala. Tamil Nadu shows rich variety and diversity in its geography and climate with coastal plains co-existing with tropical rain forests, river valleys and hill stations. The eastern extremity of the State is Point Calimere situated at 80°20′ E longtitude while the western tip is the Mudumalai Sanctuary at 71°15′ E longtitude. The northern and southern extremities are defined by Pulicat Lake (13°35′ N latitude) and Cape Comorin in Kanyakumari (8°5′ N latitude).

Traditionally, the State has been divided into five physiographic divisions viz., *Kurinji* (mountainous area), *Mullai* (forest), *Palai* (arid zone), *Marudham* (fertile region) and *Neidhal* (coastal area). Apart from the Western Ghats that separate Tamil Nadu from Kerala, the State also has another mountainous chain, the Eastern Ghats that comprise mainly low rocky hills. The main river is the 760 km long Cauvery, which flows along the entire breadth of Tamil Nadu. Other major rivers are the Palar, Pennar, Vaigai and Tamiraparani.

This chapter presents an overview of the physical, historical, cultural and economic facets of the State and places it in an appropriate context in relation to human development. A detailed analysis of the various issues is taken up in the chapters that follow.

History

Tamil Nadu has a very ancient history which goes back some 6000 years. The State represents Dravidian culture in India which preceded Aryan culture in the country by almost a thousand years. Historians have held that the architects of the Indus Valley Civilization of the fourth century BC were Dravidians and that at a time, anterior to the Aryans, they were spread all over India. With the coming of the Aryans into North India, the Dravidians appear to have been pushed into the south, where they remained confined to Tamil Nadu, with the other southern States such as Andhra Pradesh, Karnataka and Kerala forming repositories of Dravidian culture. The Tamil country was not subjugated by any external power over any long period of time or over large areas, and was not subjected to the hegemony of Hindu or Muslim kingdoms of North India. The rise of Muslim power in India in the 14th century AD had its impact on the South, however, by and large the region remained unaffected by the political upheavals in North and Central India. The Tamil area, for the most part, has maintained a certain political integrity, while at the same time has not insulated itself from the rest of South India.

Tamil Nadu was subject to the rule of four great kingdoms: Cholas, Cheras, Pandyas and Pallavas. The Cholas

established their supremacy between AD 100 and 200 and continued their dominance over the Cheras in the southwest and the Pandyas in the southeast till the 5th century AD. Karikala Chola, who ruled during this period, is credited with the building of large irrigation tanks, based on harnessing the Cauvery through a system of barrages and tanks. The Pallavas came to the fore in the 6th century AD and their domain extended to a considerable part of present day Tamil Nadu. The Pandyas, who re-emerged during this period, held sway in the southeastern part of the State. The Pallava period extended till the 9th century AD and marked a fusion of Aryan elements with Dravidian culture. This period is known for the establishment of a land revenue system and the emergence of an agrarian economy.

The Cholas re-emerged in the 9th century AD, defeating the Pallavas, and consolidated their empire over the next four centuries. The Chola period witnessed maritime expeditions to neighbouring Sri Lanka and South East Asian countries and forging of trade and cultural links with these countries. Historians refer to the existence of an elaborate bureaucracy during this period with some autonomy for village level political units. The decline of the Cholas saw a brief period of Muslim rule till the rise of the Vijayanagar rulers, who ruled the Tamil territories through Telugu warrior chiefs or *Nayaks* and through local Tamil chieftains. Dominant landed groups emerged and the rights of share cropping peasants—which was a feature of Chola rule—suffered erosion. With the decline of the Vijayanagar Empire, the Tamil territories were parcelled out among several petty kings such as the Nayaks of Madurai and Thanjavur who declared themselves independent. This was a period of political, economic and social instability which enabled the British to take full advantage.

With the arrival of the East India Company at Madras in 1639, a new chapter was opened in the history of South India and very soon, most of South India came under the hegemony of the British. During the next two centuries, the East India Company gradually extended its influence and obtained possession of the entire area from Cape Comorin to the Northern circars, the Danish station of Tranquebar, the French settlements at Pondicherry and the territories of the five native States[1] all of which together came to be called Madras Presidency with its capital city at Madras. The area of the then Madras Presidency was 141,705 sq. miles.

With India attaining independence in 1947, the Madras Presidency continued in its original form comprising Tamil Nadu, Andhra Pradesh, Karnataka and parts of Kerala. However, the agitation for a separate Andhra State compelled the Government of India to bifurcate the Madras Presidency into Andhra with Telugu speaking areas and Madras with Tamil speaking areas. The old capital, Madras, was retained by the new Madras State. Under the State Reorganization Act of 1956, Madras lost Malabar district and Kasargod *taluk*, to the newly formed State of Kerala while Madras gained four taluks of Trivandrum district and Shencottah taluk of Quilon district of Kerala. The four taluks gained were constituted as Kanniyakumari district in the new Madras State. The new Mysore (Karnataka) absorbed some parts of the old South Kanara district (excluding Kasargod taluk) and the Kollegal taluk of Coimbatore district in 1960. Four hundred and five sq. miles of Chittoor district of Andhra Pradesh was transferred to Madras in exchange for 326 sq. miles from Chengalpattu and Salem districts. The Madras State thus constituted has today an area of 130,000 km and is the fourth largest State in the country. It was renamed as 'Tamil Nadu' on 14 January 1967.

In the initial years, following the reorganization, Madras State had 13 districts which rose to 14 by 1971. In the 1980s and 1990s, in keeping with the government policy of reducing the size of districts in order to accelerate development, many of the larger districts such as Ramanathapuram, Tirunelveli and Madurai were split into smaller districts. Several other districts were also bifurcated. With the recently formed Ariyalur district (carved out of the old Tiruchirappalli district) in January 2001, the total number of districts in Tamil Nadu stands at 30. The population of Tamil Nadu as per the 2001 Census is 62.11 million, constituting 6.05 per cent of the total

[1]Travancore, Cochin, Pudukkottai, Banganepalli and Sandur.

population of India. Wherever feasible, data for 29 districts have been generated and this formed the basis of analysis in the present report.[2] Wherever dependable current data are not available for all 29 districts, census data covering the erstwhile 21 districts have been relied upon.

Tamil Language

The official language spoken in the State is Tamil, which is one of the oldest languages of India. It has undergone several panoramic changes with significant contributions made by poets, scholars and rulers over several centuries. 'Tholkappiam', dating back to the 5th century BC, is a standing monument testifying to the antiquity of the Tamil language. The earliest literature, viz. Sangam poetry, originated in Madurai and reached its zenith in the 2nd century. Poetry and literature flourished for almost three centuries during the Sangam age. Sangam literature is remarkable for its high literary quality and sophistication. The best known work of this age is 'Thirukkural' (couplets providing philosophy and guidelines for a righteous living), written by Saint Thiruvalluvar, which is relevant even today. 'Silapathikaram' (written by Elango Adikal, son of a Chera King in the 2nd or 3rd century AD) and 'Manimegalai' are two major classics. Other great poets of this age were the Nayanmars and the Alwars. Kambar, who composed a Tamil version of Ramayana, lived during this time. The then rulers nurtured the Tamil language, fostering its growth and development. Tamil is the medium of instruction in educational institutions and is widely used in the conduct of government business in the State. However, it is worth noting that people in Tamil Nadu have also learnt other languages by osmosis and acculturation.

Art, Architecture and Culture

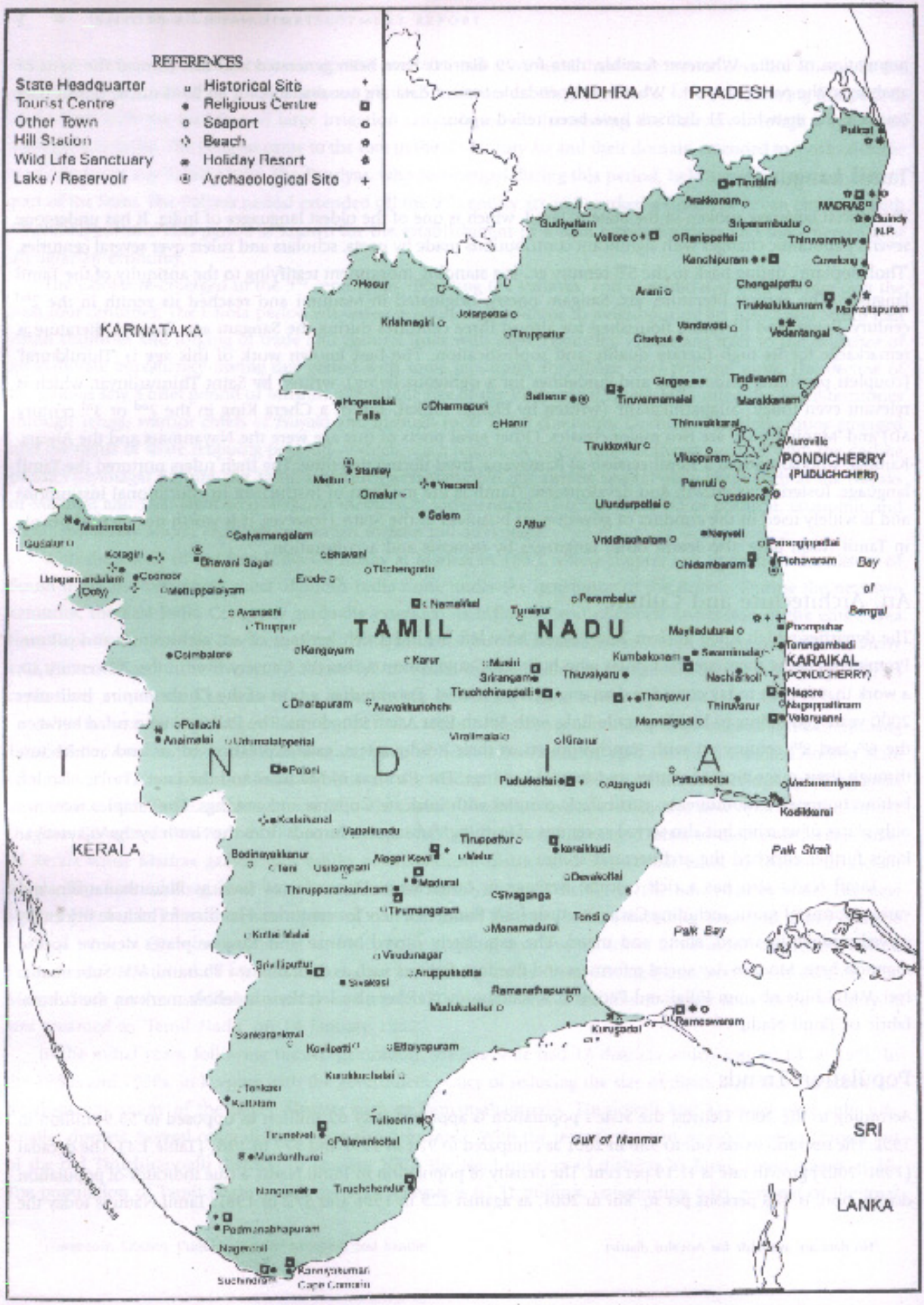
The dynasties which ruled ancient Tamil Nadu have left behind a rich heritage of art, architecture and culture. Prominent among them are the Cholas who built the Grand Anicut across the Cauvery river in the 2nd century AD, a work that is even today considered an engineering marvel. Poompuhar, a port of the Chola empire, built over 2000 years ago points to bustling trade links with South East Asian kingdoms. The Pallavas, who ruled between the 6th and 8th century AD with Kancheepuram as their headquarters, gave expression to art and architecture through their magnificent temples and temple carvings. The Pandyas of Madurai and the later Cholas also left behind impressive monuments, particularly temples with intricate Gopuras and carvings. The temples were not only places of worship but also served as centres of learning. Subsequent inroads from the North by the Vijayanagar kings further enriched the architectural scene.

Tamil Nadu also has a rich cultural heritage in other areas. Dance forms such as Bharathanatyam and various forms of music including Carnatic music have flourished here for centuries. Handicrafts include intricately carved designs in wood, stone and metal. The exquisitely carved bronze and Tanjore plates deserve special mention here. Modern day social reformers and freedom fighters such as Subramanya Bharathi, V.V. Subramania Iyer, V.O. Chidambaram Pillai and Periyar E.V. Ramasamy Naicker also left their indelible mark on the cultural fabric of Tamil Nadu.

Population Trends

According to the 2001 Census, the State's population is approximately 62 million as opposed to 55.9 million in 1991. The sex ratio works out to 986 in 2001 as compared to 974 in 1991 and 977 in 1981 (Table 1.1). The decadal (1991–2001) growth rate is 11.19 per cent. The density of population in Tamil Nadu, a true indicator of population distribution, is 478 persons per sq. km in 2001, as against 429 in 1991 and 372 in 1981. Tamil Nadu is today the

[2]No data are available for Ariyalur district.


REFERENCES
State Headquarter
Tourist Centre
Other Town
Hill Station
Wild Life Sanctuary
Lake / Reservoir
Historical Site
Religious Centre
Seaport
Beach
Holiday Resort
Archaeological Site
ANDHRA PRADESH
KARNATAKA
KERALA
TAMIL NADU
PONDICHERRY (PUDUCHCHERRY)
KARAIKAL (PONDICHERRY)
I N D I A
SRI LANKA
Bay of Bengal
Palk Strait
Palk Bay
Gulf of Mannar
Laccadive Sea
MADRAS
Pulicat
Tiruttani
Arakkonam
Sriperumbudur
Vellore
Ranipettai
Thiruvanmiyur
Kanchipuram
Chengalpattu
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Tiruchengodu
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Nachiarkoil
Tiruchchirappalli
Thanjavur
Thiruvarur
Nagore
Nagapattinam
Velanganni
Dharapuram
Aravakkurichchi
Pollachi
Anaimalai
Udumalaipettai
Virdhachalam
Ariyalur
Perani
Pudukkottai
Aranguli
Pattukkottai
Vedaranniyam
Kodikkarai
Kalaiyarkovil
Vadakkangulam
Tiruppattur
Karaikkudi
Bodinayakkanur
Theni
Usilampatti
Madurai
Devakottai
Thirupparankundram
Sivaganga
Tirumangalam
Tondi
Manamadurai
Kutlat Malai
Virudunagar
Sri Liliputtur
Aruppukkottai
Sivakasi
Ramanathapuram
Mudukulattur
Rameswaram
Kilakarai
Sankarankoil
Kovilpatti
Ettayapuram
Kurukkuchalai
Tenkasi
Kuttalam
Tuticorin
Tirunelveli
Palayamkottai
Manaparai
Nanguneri
Tiruchendur
Padmanabhapuram
Nagercoil
Suchindram
Kanniyakumari
Cape Comorin

most urbanized State in the country with 42 per cent of its population living in urban areas.[3] Tamil Nadu's slum population was estimated in 1993–4 to be 3.13 million which is 16.5 per cent of the total urban population of the State. More than 30 per cent of Chennai's population lives in slums and 50 per cent of these are in dense slum areas.

TABLE 1.1—BASIC DEMOGRAPHIC INDICATORS

S.no.	*Indicators*	*1971*	*1981*	*1991*	*1997*	*2001 (Provisional)*
1.	Population (Million)	41.2	48.2	55.9	60.0	62.1
2.	Decennial growth (%)	22.3	17.5	15.4	7.5	11.2
3.	Density of population per sq. km	317.0	372.0	429.0	462.0	478.0
4.	Urban population (%)	30.3	33.0	34.2	36.8	43.9
5.	Sex ratio	978.0	977.0	974.0	975.0	986.0
6.	Percentage of 0–14 years old	37.8	35.0	30.9	30.3	NA

Note: NA—Not Available.
Source: Registrar General of India, Census Documents 1971, 1981,1991, 2001 (*Provisional*).

Table 1.1 shows that children below the age of 15 constituted 30.3 per cent of the population in 1997. It also shows that the dependency load in the State is high which may adversely affect capital formation of the economy. The scheduled castes (SCs) constitute a higher percentage of the population in Tamil Nadu (19.18 per cent in 1991 as against 18.3 per cent in 1981) compared to that for the country as a whole (16.3 per cent in 1991 and 15.7 per cent in 1991). However, Tamil Nadu has a much lower percentage of scheduled tribes (STs)—1 per cent in 1991 as against the all-India average of 8 per cent.

Economy

Agriculture

Agriculture has been the mainstay of the State economy since independence with more than 65 per cent of the population depending on this sector for a living. There are strong links between agriculture and economic growth. Agriculture spurs demand for inputs such as fertilizers, pesticides and machinery, and on the supply side it provides raw material for agro-based industries such as cotton textiles, sugar and vegetable oils. With increase in incomes, the increase in expenditure of rural households results in a higher demand for consumer goods including clothing, sugar and edible oils.

However, in the process of development, the share of agriculture in the net State domestic product (NSDP) gradually declines due to higher productivity and production in the non-agricultural sectors. In Tamil Nadu, the contribution of agriculture (inclusive of crop, livestock, fisheries and forestry) to NSDP has been declining over the last few decades (Table 1.2). Whereas agriculture accounted for 53.27 per cent of NSDP in 1950–1, it accounts for only 16.65 per cent in 2001–02. On the other hand, the share of the secondary and tertiary sectors has increased from 13.72 per cent and 33 per cent, respectively in 1950–1 to 34.04 per cent and 49.31 per cent in 2001–02 (Table 1.2). There was a decline in the primary sector at the national level from 49 per cent to 27.5 per cent during the same period.

[3]In 1991, the urban population in Tamil Nadu constituted 34.15 per cent of the total population and Tamil Nadu was the third most urbanized State after Maharashtra and Gujarat. The large increase in the urban population is mostly due to re-classification of rural areas as urban areas.

TABLE 1.2—SECTORAL DISTRIBUTION OF NET STATE DOMESTIC PRODUCT

Year	*Primary*	*Secondary*	*Tertiary*	*Total*
1950–51	53.27	13.72	33.01	100
1960–61	51.98	17.98	30.42	100
1970–71	39.86	26.12	34.02	100
1980–81	24.85	34.49	40.66	100
1990–91	22.20	34.53	43.27	100
2001–02*	16.65	34.04	49.31	100

Note: *at 1993–94 prices.
Sources: 1. GoTN (Government of Tamil Nadu), 8th Plan Document.
2. Department of Economics and Statistics.

The relatively greater decline in the State is to be ascribed to the lack of sustained growth in agriculture. The growth of the agriculture sector in the 1990s was 3.95 per cent as against 5.3 per cent in the 1980s. On the other hand, the annual growth rates in the manufacturing and tertiary sectors improved from 4.52 per cent and 6.72 per cent in the 1980s to 5.35 per cent and 7.12 per cent in the 1990s.

Some important features and possible long-term constraints of Tamil Nadu's agriculture are: (a) its dependence on the spatial and temporal distribution of the monsoon, (b) the fact that 95 per cent of surface water and 70 per cent of ground water has already been exploited, and (c) the growing pressure on land. Although the net sown area as a percentage of total geographical area is more or less the same as the all-India average, the irrigation intensity and cropping intensity are higher in the State. The shortage of water resources results, on an average, in about 12 to 16 per cent of the gross cropped area remaining fallow every year.

The scope for bringing additional area under irrigation has become not only limited but also prohibitive in terms of cost. Promotion of appropriate technology and development strategies in dryland and rainfed areas would result in multiple benefits: ensuring food security; increasing income of small and marginal farmers; enhancing viability of farming and restoring ecological balance.

In order to accelerate wastelands development, a Wasteland Development Programme was launched during 1999–2000. The aim is to convert wastelands into farming lands through a package of practices yielding adequate returns, particularly to small and marginal farmers. Efficient water harvesting and conservation methods and suitable technology and irrigation packages based on a watershed approach should alter the cereal-based farming system and increase the productivity of land. While efforts are being made to improve productivity, including evolving drought resistant varieties of pulses and coarse cereals (grown predominantly in these areas), diversification has become a necessity as the production of these foodgrains alone cannot support economic development. Diversification in agriculture ought to be achieved across sub-sectors as well as within each sub-sector such as horticulture, fisheries, livestock and dairy development.

Industry

Tamil Nadu is among the most industrialized States in India today. The State ranks next to Maharashtra in terms of the contribution of the manufacturing sector to NSDP. The major industries are automobiles, cotton, textiles, rubber, food products, machinery, transport equipment and leather and leather goods.

During the 1980s, the average growth of the industrial sector was 4.52 per cent while during the 1990s the average growth rate increased to 5.35 per cent. However, the industrial growth rate fluctuated significantly from year to year registering growth rates as high as 16 per cent in 1983–4 and as low as -7.4 per cent in 1991–2. Growth rates should become sustained in the future given current policy initiatives.

The Government of Tamil Nadu has followed and is following a very liberal and pragmatic industrial policy

which has created a conducive industrial climate in the State. The success achieved so far is also due to the fact that the State Government has been focussing on strengthening its industrial and social infrastructure in terms of power generation, communication networks and development of minor ports.

Evidence already exists that things are looking up for Tamil Nadu. The State is rapidly attracting a large number of foreign and domestic investors to locate their production facilities in Tamil Nadu. According to a report by the Centre for Monitoring the Indian Economy (CMIE), Tamil Nadu stands third in terms of foreign direct investment (FDI) approval. The FDI approval was of the order of 2351 billion in August 2002. This is 8.32 per cent of the total FDI in the country. More than 50 per cent of the investment is for the development of infrastructural facilities of which more than 50 per cent is for power generation. Tamil Nadu was also rated by CMIE as the second best State in the country in terms of the quality of infrastructural facilities.

Tamil Nadu also has been at the forefront in attracting foreign investment into the local information technology (IT) industry. In 1998, the State announced an industry friendly IT Policy, and set up an IT task force to monitor its implementation. The software exports have zoomed from almost nothing to over US $ 1 billion in 2001–02. The Chief Minister announced the new IT Policy, 2002 on 19 September 2002, designed to establish the State as the 'Destination of Choice' for information technology (IT) investments and to develop the State as a global centre for business process outsourcing (BPO). Besides promoting e-governance and IT applications in Government and introducing electronic delivery of services (EDS), the digital divide will be bridged by accelerating internet penetration in rural areas, setting up of kiosks and online libraries and a bilingual internet portal with links to State Government Departments and Services.

Growth, Income and Poverty

The all-round development of the State over the last five decades can be seen from the increased contribution from the industries (secondary) and services (tertiary) sectors to the real income of the State's economy.

Tamil Nadu's performance during the different Plan periods compared to the performance of the country as a whole (at constant prices) shows that the rate of growth of the State's economy has been marginally higher than that of the country during the First and Fourth Plans, Fifth to Seventh Plans and in the first three years of the Ninth Plan, and marginally lower than that of the country during the Second, Third and Eighth Plan periods (Table 1.3). Tamil Nadu's NSDP growth rate was 6.3 per cent per annum during the 1990s, ahead of the NSDP growth rate of 5.99 per cent of the 15 major States in the country.

TABLE 1.3—ANNUAL GROWTH RATE AT 1980–1 PRICES, TAMIL NADU AND INDIA

(Percentage)

Plan Period	*Tamil Nadu*	*India*
First Plan	4.45	3.6
Second Plan	2.90	4.0
Third Plan	1.58	2.2
Fourth Plan	3.40	3.3
Fifth Plan	7.00	5.2
Sixth Plan	6.01	5.2
Seventh Plan	4.94	5.8
Eighth Plan	5.97	6.8
Ninth Plan	5.46*	5.34*

Note: *at 1993–4 prices, DOES.

Sources: 1. TN at Fifty—A Statistical Compendium, Department of Economics and Statistics (DOES).
2. TN Ninth Plan Document.
3. Government of India (GOI), Five Year Plan documents VI, VII, VII, IX & X.

An attempt by the Department of Economics and Statistics (DOES) to work out the growth rate of domestic product at the district level for the period 1993–4 to 1996–7 showed wide variations, from 4.38 per cent in Thanjavur to 10.66 per cent in Madurai with only three districts (Kancheepuram, Erode and Madurai) registering a growth rate of over 10 per cent.

Per Capita Income

Tamil Nadu's per capita income was below the national average during the 1980s but crossed the all-India average marginally in 1991–2. Ever since the early 1990s this higher per capita income has been maintained.

Tamil Nadu ranks fourth among major States in terms of per capita income. Tamil Nadu's per capita income (at current prices) was Rs 19,889 in 2000–01. Maharashtra, Punjab and Haryana are the three States which have per capita income higher than Tamil Nadu. Among the southern States, Tamil Nadu's per capita income was higher than that of Kerala (Rs 19,463), Karnataka (Rs 18,041) and Andhra Pradesh (Rs 16,373).

Poverty Levels

The estimates of poverty made by the Union Planning Commission in 1999–2000 show that 21.12 per cent of the State's population lives below the poverty line, this is less than the all-India average of 26.10 per cent.[4] The percentage of population below the poverty line in Tamil Nadu in 1973–4 was 56.51 per cent indicating a decline by 35.39 percentage points during this time period. Moreover, in 1973–4, the population below the poverty line was higher than the all-India average of 54.93 per cent and Tamil Nadu was sixth among major States in terms of below the poverty line population.

If the above indicators are disaggregated and analysed on a micro level, it becomes obvious that sharp differences between rural and urban areas as as well as among various geographical regions will emerge. While micro-level data are available for several indicators such as health and literacy levels, other indicators have not been analysed at the micro-level. Further, there does not appear to be any direct correlation between some of the social economic indices. For example, Kanniyakumari with a high literacy level and low birth rates on par with Kerala, shows an exceptionally high figure of 48 per cent of people below the poverty line. In fact seven districts (Vellore, Tiruvannamalai, Cuddalore, Salem, Dindigul, Thoothukudi and Kanniyakumari) have higher poverty levels as compared to the State average (31.66 per cent as per NSS data for 1993–4).

Social Sector

Health

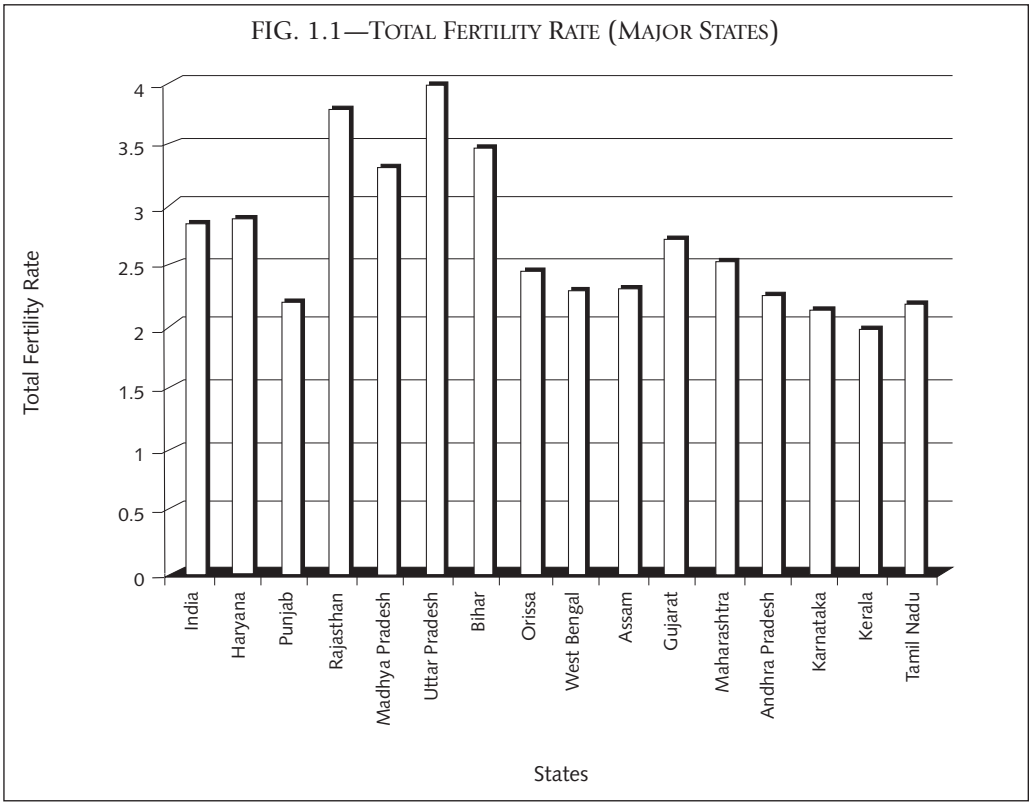
Comparison of some major health indicators of Tamil Nadu with All India figures shows that the State has made impressive strides. Tamil Nadu has shown, over the last two decades, faster reduction in population growth rate as compared to all other States except Kerala. The annual population growth rate during 1981–91 was 2.14 per cent for All India, while it was 1.43 per cent for Tamil Nadu, second only to Kerala (1.34 per cent).

For health indicators such as life expectancy, total fertility rate (TFR) etc. there are often two data sets, at the national and State levels. Both of these have been presented here, when deemed useful, to give comparative figures. Life expectancy at birth indicates the quality of health care in the State. The vital events survey (VES) for the reference year 1997, conducted by the Tamil Nadu Danish International Development Assistance (DANIDA) Health Care

[4]There have been doubts raised over the recall methodology adopted by the 55th Round of NSS. There are some who feel that the head count ratios have been underestimated because of this methodology.

Project (TNHCP), revealed that LEB, which was 41.09 years for males in 1959–60, rose to 64.91 years in 1997 and for females from 38.24 years to 68.85 years during the same period. The sample registration system (SRS) estimates for the year 1997–2001 ranked Tamil Nadu's LEB (65.2 for males and 67.6 for females) next only to Kerala, Maharashtra and Punjab. The crude birth rate (CBR) for the State declined from 31.4 in 1971 to 19.3 in 2000 (SRS), and was second only to Kerala (18.2). The crude death rate (CDR) declined from 14.4 in 1971 to 7.9 in 2000 (SRS) and the State ranks eighth in the country in this respect.

FIG. 1.1—TOTAL FERTILITY RATE (MAJOR STATES)



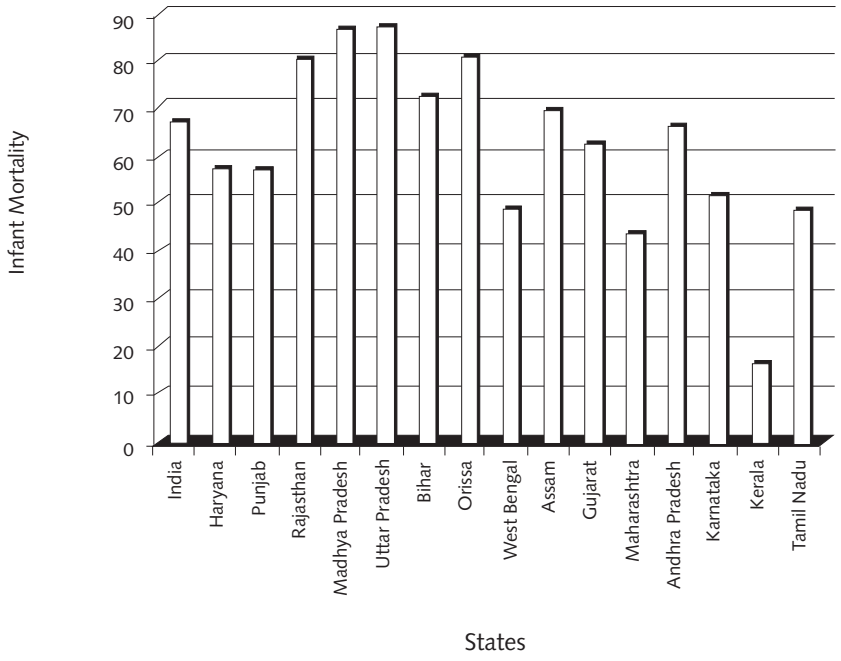
Source: National Family Health Survey-2 (1998–9)

The TFR for Tamil Nadu has shown a sharp decline from 3.9 in 1971 to 2.0 in 1997 (SRS). The VES for 1997 also indicates a TFR of 2.0. However the recent National Family Health Survey (NFHS-2) 1998–9 data show Tamil Nadu's TFR to be 2.48 (Figure 1.1), next only to Kerala (2.0). Significantly, NFHS-2 shows an increase in TFR for Kerala also from 1.8 in 1997 (SRS) to 2.0 in 1998–9.

With respect to IMR, the State has made rapid progress. The IMR has been reduced from 113 in 1971 to 48.2 in 1998–9 (Figure 1.2). The NFHS-2 survey shows that the State stands fifth among major States in IMR with Kerala maintaining the lead (16.3) and Maharashtra (43.7) replacing Punjab as the State with the second lowest IMR. However, perinatal mortality decline has not been very significant, from 55.2 in 1971 to 43.4 in 1997 (as per SRS), while the corresponding figures for Kerala and India in 1997 were 17.5 and 43.2, respectively.

The State's policy of 'Health for All by the Year 2000'—which had as its objectives immunization against infectious diseases and control of endemic diseases, provision of maternal and child care, and provision of drugs (to mention but a few)—had a positive impact (but was not solely responsible) for the creditable achievements in the health sector. The NFHS-2 survey reveals that in antenatal care, Tamil Nadu is a close second to Kerala in providing all the six summary indicators of antenatal care. In post-natal care, NFHS-2 survey results show that

FIG. 1.2—INFANT MORTALITY RATE (MAJOR STATES)



Source: National Family Health Survey-2 (1998–9)

Tamil Nadu, with 53 per cent of non-institutional deliveries with a post-partum check-up within two months of birth and 10 per cent within two days, tops the list of States with respect to both post-natal care indicators. The State also ranks third in delivery care indicators, as surveyed by NFHS-2. These achievements are quite creditable and partly due to the government's policy of adopting the primary health care approach to provide free, curative and preventive health services to large sections of the population. However, some areas of concern still remain such as infant and maternal morbidity and mortality, and control of communicable and non-communicable diseases.

Literacy and Education

Tamil Nadu's human development achievements have been largely a result of its strong educational heritage. Even in the early years, when the State was Madras Presidency, education was actively pursued and promoted (see Box 1.1). The results of this are evident in the post-independence period as well.

Box 1.1—Education in Early Years of Madras Presidency

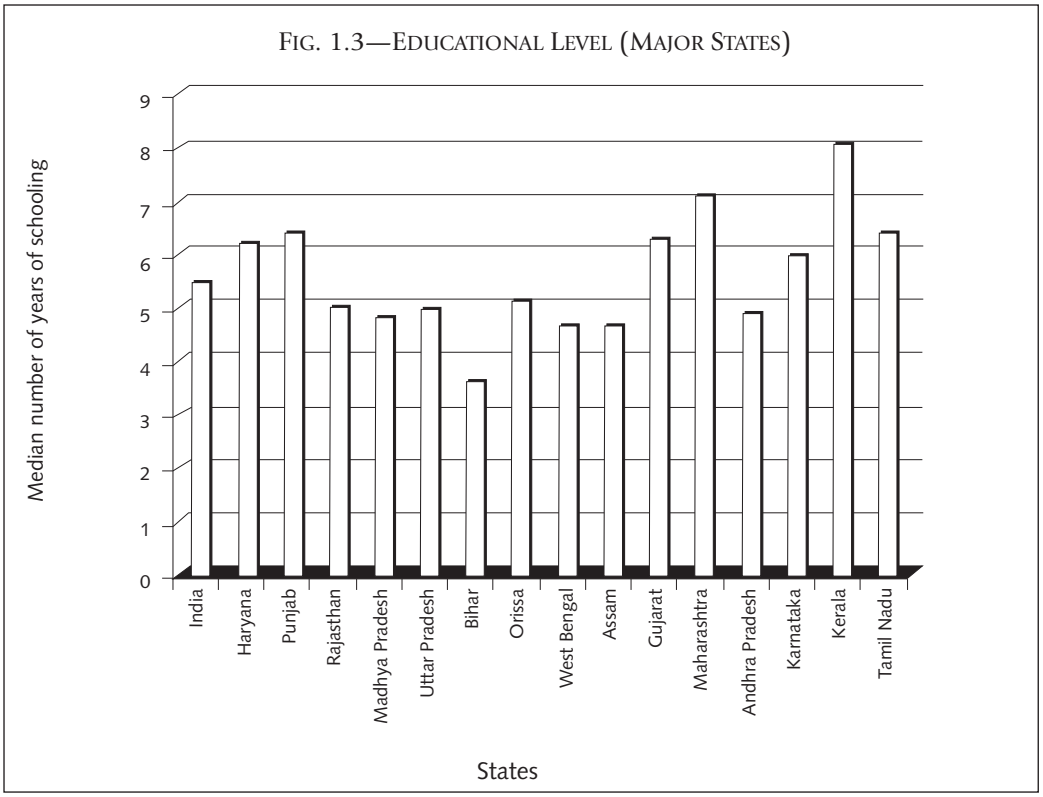
Government enquiry into the State of education in Madras Presidency, initiated by Sir Thomas Munro in 1822, showed that there was approximately one school per thousand population and that the number of boys taught was one-fourth of the total school age population. It also showed that the instruction imparted in these indigeneous institutions was of little practical value tending to burden the memory rather than to train the intellect. A board was, therefore, appointed to organize a system of public instruction, and an annual grant of Rs 50,000 was sanctioned for the establishment of schools. In 1826, 14 collectorate and 81 taluk schools, with a central school at Madras, were opened. In 1836, this scheme

was pronounced a failure and the schools were abolished as inefficient. In 1840, a University Board was constituted by Lord Ellenborough's Government to organize and establish a central school and a few provincial schools. In 1841, the central school was converted into a high school; in 1853, a college department was added to it and later it developed into the Presidency College. In 1854, the Court of Directors issued its memorable dispatch regarding education. Thereupon the Department of Education, with the Directorate of Public Instruction and its inspecting staff was organized; the so-called Madras University was re-modelled and designated the Presidency College; a normal school was established; *zilla* or district schools were opened; and the grant-in-aid system was introduced. While in 1853 there were 460 educational institutions with 14,900 pupils, by 1904 this number had risen to 26,771 with 784,000 pupils.

Source: Madras Gazetter (M. Francis).

The literacy rate of the State has been increasing progressively over the years. As per the 2001 Census, the literacy rate stands at 73.47 per cent, next only to Kerala and Maharashtra and far higher than the all-India level of 65.38 per cent. The State Government in its endeavour for 'Universalization of Primary Education' has invested considerably in education infrastructure, especially in rural areas. The combined gross enrolment rate in the State for the year 1998–9 was 83.15 per cent. At the primary level, the gross enrolment of boys is 106.37 per cent and that of girls 104.01 per cent. The results of the NFHS-2 (1998–9) show that the median number of years of schooling for Tamil Nadu is 6.4 years as against the all-India figure of 5.5 years, which is a close third to Kerala (8.1) and Maharashtra (7.1) (Figure 1.3).

FIG. 1.3—EDUCATIONAL LEVEL (MAJOR STATES)



Source: National Family Health Survey-2 (1998–99)

Tamil Nadu is the first State in the country to provide computer education in all government higher secondary and high schools. Over 100,000 students have benefitted from this innovative scheme. The State is also a pioneer in providing multi-skilled training through vocational education to improve the quality of secondary education. In the field of higher education, self-financing institutions, polytechnics, industrial training institutes and arts and science colleges have been encouraged so that the State's burden in providing higher education is considerably reduced.

2. Status of Human Development in Tamil Nadu

Chapter

2

Status of Human Development in Tamil Nadu

As mentioned at the outset of this report, the UNDP's HDI serves as a broad-based benchmark of human development if not as a comprehensive indicator of the overall state of human development (Box 2.1). It would, after all, be of interest to know how the quality of life as measured by the three indicators of the HDI, namely longevity of life, education and command over resources (income) been enhanced in Tamil Nadu and its districts due to developmental activities. Human development indicators (HDI and GDI) will, moreover, help the State to integrate human development concerns into its development strategy.

Also, one of the main considerations for adopting the UNDP methodology to construct the HDI is to facilitate comparison of human development in Tamil Nadu with other States in India, and other developing and developed countries. Similarly, the GDI will help examine Tamil Nadu's achievements in terms of gender equality in a comparative framework. This chapter is, therefore, a background to the wider discussion on human development that follows.

Human Development Index

Box 2.1—State of Human Development

The HDI value ranges from 0 to 1 and the value for a country shows the distance that it has to travel to reach the maximum possible value of 1—or its shortfall—and also allows inter-country comparisons.

Of the 174 countries, for which the HDI was constructed this year, 46 are in the high human development category (with an HDI value equal to or more than 0.800), 93 in the medium human development category (0.500–0.790) and 35 in the low human development category (less than 0.500).

Source: UNDP, 2000.

Human Development Index—Tamil Nadu in the South Asian and Indian Context

Tamil Nadu's HDI (2001) was 0.657 as compared to 0.571 for India as a whole.[1] The global HDI ranks were 116 and 132, respectively. Tamil Nadu is also placed well in the South Asian context. It fares better than countries

[1]The following data were used to construct Tamil Nadu's HDI: district-wise income estimates (new series at 1993–4 prices) for the year 1998–9, estimated by DOES; LEB for the year 1997 calculated by the VES conducted by DANIDA Health Project; literacy rates for 2001; and combined gross enrolment ratios for 1998–9.

such as Pakistan, Nepal, Bhutan and Bangladesh with HDI values of 0.508, 0.463, 0.454 and 0.440 respectively and global HDI ranks of 138, 144, 145 and 150. Only the Maldives and Sri Lanka with HDI values of 0.716 and 0.721, respectively fared better. Their HDI ranks in the world were 93 and 90.

Tamil Nadu's good performance (medium human development rank) and its placement well above the all-India average can be better understood if the HDI is disaggregated. The State's per capita income is above the national average and it occupies fifth place in the ranking of 15 major States in India. Tamil Nadu has the second lowest fertility rate next only to Kerala. Life expectancy at birth for males and females was 64.85 and 65.20, respectively. The literacy rate has been increasing over the years and reached the level of 73.47 per cent in 2001, next only to Kerala and Maharashtra.

The National HDR prepared by the Planning Commission, Government of India, places Tamil Nadu at the third position with an HDI value of 0.531 among 15 major States.[2] Specific data, on each of the indicators such as LEB, literacy and income suggest, however, that while Tamil Nadu is placed well above the all-India average, it still lags behind some States. For example, Kerala is well ahead of Tamil Nadu in literacy and LEB while Maharashtra is ahead in LEB and income. Therefore, Tamil Nadu's focus in the next decade should be to reach the levels attained by Kerala in health and educational attainment, while aiming at increasing the levels of SDP to those of Punjab or Maharashtra in order to reduce poverty and inequality.

Human Development Index—Inter-district Variations

An HDI has been constructed for 29 districts in the State using the UNDP methodology. As indicated above, the HDI for the State is 0.657 (Table 2.2). This value varies from 0.757 to 0.584 at the district level. Chennai district takes the top position while Dharmapuri is placed at the bottom. The high per capita income of Chennai has considerably influenced its HDI value. Chennai's literacy rate and life expectancy are also fairly high. However, this district cannot be a representative district for Tamil Nadu because of its urban character. The gap between the HDI value of Chennai, the first ranked district and Kanniyakumari, the second ranked district is substantial (0.045). In the case of other districts, the gap in achievement is not very wide. Eleven districts have an HDI value above the State HDI value.

An attempt has also been made to present an overview of the status of human development in the districts with respect to each of the indicators separately. The best performing five districts and the least performing five districts have also been identified (see Table 2.1).

Chennai is the only district, which figures among the top five districts in the State in all the human development indicators considered for computing the indices. Next comes Kanniyakumari in literacy, enrolment ratio and longevity, followed by Thoothukudi in literacy and enrolment ratio, Coimbatore in per capita income and longevity, the Nilgiris in literacy and longevity and Kancheepuram in per capita income and longevity. Dharmapuri ranks the lowest in literacy rate, gross enrolment ratio (GER) and longevity and Villupuram in per capita income.

A closer examination of the level of achievement in the three indicators of human development reveals some insights into their inter-relationship. The importance of income for achieving higher standards of living is well known. Income gives people the ability to buy goods and services, that is as income increases it widens the range of consumption options. Nonetheless, high literacy and health can be achieved even with low per capita income. Kanniyakumari is a typical example of this category. Similarly, the reverse is also true. For example, even though per capita income is relatively high in Salem and Perambalur districts, their performance in literacy and health is relatively low.

[2]The parameters used by the NHDR for calculating the HDI are longevity, education and command over resources. The HDI rank for Tamil Nadu was seventh in 1981, it moved up to third rank in 1991 and 2001.

TABLE 2.1—TOP AND BOTTOM FIVE DISTRICTS IN HUMAN DEVELOPMENT INDICATORS

Indicators	*Top 5*	*Bottom 5*
Per capita Income	Kancheepuram	Thanjavur
	Chennai	Tiruvarur
	Coimbatore	Sivagangai
	Madurai	T.V. Malai
	Thoothukudi	Villupuram
Literacy Rate	Kanniyakumari	Perambalur
	Chennai	Erode
	Thoothukudi	Salem
	Trichy	Villupuram
	Madurai	Dharmapuri
Combined Gross Enrolment Ratio	Chennai	Virudhunagar
	Thoothukudi	Kancheepuram
	Madurai	Pudukottai
	Kanniyakumari	Villupuram
	Theni	Dharmapuri
Life Expectancy at Birth	Chennai	Thanjavur
	Kanniyakumari	Theni
	Coimbatore	Madurai
	Kancheepuram	Perambalur
	Nilgiris	Dharmapuri

Similar phenomena are observed at the State level also. The per capita income of States like Maharashtra and Punjab is fairly high, but these States have not made significant progress in the social sector—literacy and health—whereas Kerala with a relatively low per capita income has made rapid strides in human development. The point to note is, therefore, that: **enhancing income levels of the people is no doubt necessary but it must be ensured that the increased income is used by the people for improving their literacy and health status. Accessibility and affordability of education and health services for the people is crucial for States to improve their level of human development.**

Gender Development Index

Gender Development Index—Inter-district Variations

The GDI is a summary measure which has been found to be useful in comparing stages of gender development. It is also useful to compare GDIs and HDIs to assess the extent of gender equality. The GDI (2001) for Tamil Nadu is 0.654 as against the all-India value of 0.560 (HDR 2002).[3] This shows that Tamil Nadu's achievement in gender equality is better than that in the country as a whole. Gender Development Index values for the districts in Tamil Nadu vary from 0.766 to 0.582 (Table 2.2). Once again, Chennai fares the best and Dharmapuri (and Villupuram) the worst. The other districts which fare well are Kanniyakumari, Thoothukudi, Kancheepuram and Coimbatore—the same districts which fare well with regard to the HDI.

Table 2.3 gives the top and bottom five rankings of districts for the various components of GDI for 1991.

[3]India's GDI, like its HDI, has not been recalculated using the literacy rates for 2001. In that sense, it is not strictly comparable with Tamil Nadu's GDI for 2001.

Chennai district ranks first in women's per capita income, combined GER and LEB and second in literacy rate. Women's position was the lowest in Dharmapuri district in terms of literacy rate, enrolment ratio and LEB. Villupuram district is also one among the lowest five in per capita income, literacy rate and enrolment ratio.

TABLE 2.2—DISTRICT-WISE HDI AND GDI VALUES, 2001

District	*HDI value*	*GDI value*
Chennai	0.757	0.766
Kancheepuram	0.712	0.710
Thiruvallur	0.654	0.651
Cuddalore	0.644	0.643
Villupuram	0.587	0.582
Vellore	0.658	0.655
Tiruvannamalai	0.612	0.608
Salem	0.626	0.625
Namakkal	0.636	0.631
Dharmapuri	0.584	0.582
Erode	0.658	0.656
Coimbatore	0.699	0.697
Nilgiris	0.685	0.686
Tiruchirapalli	0.671	0.671
Karur	0.647	0.641
Perambalur	0.596	0.592
Thanjavur	0.630	0.629
Nagapattinam	0.654	0.652
Tiruvarur	0.637	0.633
Pudukkottai	0.618	0.615
Madurai	0.661	0.661
Theni	0.628	0.628
Dindigul	0.641	0.638
Ramanathapuram	0.629	0.626
Virudhunagar	0.651	0.649
Sivagangai	0.640	0.635
Tirunelveli	0.658	0.656
Thoothukudi	0.703	0.703
Kanniyakumari	0.711	0.708
STATE	0.657	0.654
INDIA	0.571	0.553

Links between HDI and GDI

It is interesting to note that there is not much divergence between human development values and gender development values at the State or district levels. If the GDI rank is less than the HDI rank in a district, it shows that women in the district suffer lower achievement than men. If the GDI and HDI ranks are the same in a district, it is indicative of gender equality in human development.

Table 2.2 gives the HDI and GDI values for 2001 for all the districts in the State. As the table illustrates, there is little variation between the HDI and GDI.

TABLE 2.3—TOP AND BOTTOM FIVE DISTRICTS IN GENDER DEVELOPMENT INDICATORS

Indicators	*Top 5*	*Bottom 5*
	Female	*Female*
Per capita Income	Chennai	Thanjavur
	Kancheepuram	Thiruvarur
	Coimbatore	Sivaganga
	Madurai	T.V. Malai
	Thoothukudi	Villupuram
Literacy Rate	Kanniyakumari	Salem
	Chennai	Villupuram
	Thoothukudi	Perambalur
	Nilgiris	T.V. Malai
	Trichy	Dharmapuri
Combined Gross Enrolment Ratio	Chennai	Thiruvallur
	Madurai	Salem
	Kanniyakumari	Villupuram
	Thoothukudi	Kancheepuram
	Vellore	Dharmapuri
Life Expectancy at birth	Chennai	Dindigul
	Kanniyakumari	Theni
	Nilgiris	Madurai
	Kancheepuram	Perambalur
	Erode	Dharmapuri

Classification of Districts

For the purpose of convenient and meaningful analysis, the HDI and GDI values of the districts have been divided into three categories, that is high, medium and low. To explain further, if A and D denote the highest and lowest values of the indices, then B and C were obtained as arithmetic mean values of the indices for the districts falling respectively above and below the arithmetic mean of the values of the Districts X. The three categories, thus arrived at, are constituted by the districts falling between (1) A and B, (2) B and C and (3) C and D. This procedure for dividing districts into three categories has been followed for HDI and GDI values. Thus, all the districts were divided into three point scale viz., high (H), medium (M) and low (L) according to the levels of human/gender developmen.

The same districts fare well in terms of both HDI and GDI. The high faring districts include Chennai, Kanniyakumari, Thoothukudi, Kancheepuram, Coimbatore and the Nilgiris. The low faring districts include Pudukkottai, Tiruvannamalai (T.V. Malai), Villupuram and Dharmapuri. All the other districts, that is 19 in number, are classified as medium. Some of these are Thiruvallur, Cuddalore, Trichy, Madurai, Tirunelveli, Erode, Vellore, Theni, Salem, Thanjavur, Dindugul and Namakkal.

TABLE 2.4—COMPARISON OF DISTRICTS

	Districts
GDI rank less than HDI rank	1. Cuddalore(-1) 2. Vellore (-1) 3. Perambalur (-1) 4. Madurai (-1) 5. Theni (-1)
GDI rank equal to HDI rank	1. Chennai 2. Kancheepuram

(Contd...)

(Table 2.4 Contd.)

	Districts
	3. Thiruvallur 4. Villupuram 5. T.V. Malai 6. Dharmapuri 7. Coimbatore 8. Nilgiris 9. Trichy 10. Karur 11. Thanjavur 12. Nagapattinam 13. Pudukottai 14. Ramnad 15. Virudhunagar 16. Thoothukudi 17. Kanniyakumari
GDI rank greater than HDI rank	1. Salem (1) 2. Namakkal (1) 3. Erode (1) 4. Thiruvarur (1) 5. Dindigul (1) 6. Sivagangai (1) 7. Tirunelveli (1)

Note: The figures in brackets indicate GDI rank minus HDI rank.

Thus, this chapter concludes by reiterating that the underlying premise behind the concept of human development is that higher income is not an end in itself. What is important is what use a country or a State can put this increased income to, so as to improve the overall condition of its people. It can be seen from Table 2.5 that 14 districts have an HDI rank higher than the per capita GDP rank, implying that in these districts higher income has been converted into human development very effectively. Fifteen districts have an HDI rank lower than per capita GDP and in these districts the income generated has not been utilized fully for enhancing human development.

TABLE 2.5—COMPARISON BETWEEN DISTRICT GDP AND DISTRICT HDI

Districts with HDI rank lower than GDP per capita rank	*Districts with HDI rank higher than GDP per capita rank*
1. Dharmapuri	1. Chennai
2. Erode	2. Thiruvallur
3. Coimbatore	3. Cuddalore
4. Perambalur	4. Villupuram
5. Pudukkottai	5. T.V.Malai
6. Madurai	6. Nilgiris
7. Dindigul	7. Trichy
8. Kancheepuram	8. Thanjavur
9. Vellore	9. Nagapattinam
10. Salem	10. Tiruvarur
11. Namakkal	11. Sivagangai
12. Virudhunagar	12. Tirunelveli
13. Karur	13. Thoothukudi
14. Theni	14. Kanniyakumari
15. Ramanathapuram	

3. Employment Income and Poverty

Chapter

3

Employment, Income and Poverty

The proportion of the population engaged in productive work, the quality of employment and the renumeration received by the working population are important determinants of human development. A lack of adequate opportunity for gainful employment results in lowering of income levels which in turn pushes people into poverty. Thus, there is a close relationship between employment, income and poverty. Moreover, economic development is invariably associated with structural changes in GDP (income) and employment. A characteristic feature of a developing economy is a declining trend in the share of the primary sector in GDP. In the process of diversification of the economy, one would expect a shift in the share of workers from the primary sector to the secondary and tertiary sectors.

An analysis of the trends in the sectoral shares in income and employment in Tamil Nadu shows that though there has been a decline in the share of the primary sector in income, this has not been accompanied by a significant shift in the share of employment. Consequently, a very sizeable section of the labour force (nearly 50 per cent) continues to depend on the primary sector. The average income of persons depending on the agricultural sector is considerably less than that of those working in the secondary and tertiary sectors. The prevalence of poverty in rural areas is widespread mainly due to the low productivity of workers in the agricultural sector and the seasonal nature of employment. In order to understand better the linkages between employment, income and poverty, this chapter undertakes a detailed analysis of the employment situation and structural changes which have taken place over time in the State.

Employment

Size of the Workforce and Work Participation Rates

The working population in Tamil Nadu was 27.8 million in 2001, an increase of approximately 3.6 million from the 24.2 million in 1991. As can be seen from Table 3.1, however, the work participation rate (WPR), that is the proportion of workers to the total population, has actually declined during the period 1961–2001 from 45.7 to 44.8 per cent. Having said that, there has been an upward trend between 1981 and 2001, from 41.7 per cent to 44.8 per cent.

Nonetheless, what is worrisome about the 2001 Census results is that the number of marginal workers has gone up from 1.4 million in 1991 to 4.1 million in 2001. This suggests that the increase in WPR during this time

TABLE 3.1—TOTAL WORKERS AND NON-WORKERS IN TAMIL NADU

(million)

Category	*1961*	*%*	*1981*	*%*	*1991*	*%*	*2001*	*%*
Workers	15.4	45.7	20.2	41.7	24.2	43.3	27.8	44.76
(i) Main	–	–	19.0	39.2	22.8	40.8	23.6	38.00
(ii) Marginal	–	–	1.2	2.5	1.4	2.5	4.12	6.63
Non-workers	18.3	54.3	28.3	58.4	31.7	56.7	34.2	55.06
Population	33.7	100.0	48.5	100.0	55.9	100.0	62.11	100.00

Sources: Census 1961, 1981, 1991 and 2001.

period is largely accounted for by an increase in marginal workers as opposed to main workers. The number of main workers has only risen from 22.8 million to 23.7 million, by less than a million.

The WPR for 2001 was 58.96 per cent for men and 31.32 per cent for women. In 2001, Tamil Nadu had the highest WPR for men, 58.05 per cent (Table 3.2). The All-India figure was 51.93 per cent. The WPR for women at 31.32 per cent, was also substantially higher than that for many States and All India (25.68 per cent).

TABLE 3.2—TAMIL NADU WPR AND NUMBER OF WORKERS

Rural/ Urban	*WPR (%)*			*Workers (million)*		
	1981	*1991*	*2001*	*1981*	*1991*	*2001*
Rural						
Male	59.24	58.28	59.38	9.67	10.82	10.40
Female	33.55	38.50	41.33	5.41	7.01	7.18
Persons	46.48	48.49	50.39	15.08	17.83	17.58
Urban						
Male	51.25	52.78	56.37	4.18	5.14	7.76
Female	11.97	13.10	18.42	.93	1.22	2.48
Persons	32.05	33.34	37.59	5.11	6.36	10.24
Total						
Male	56.58	56.39	58.06	13.85	15.96	18.16
Female	26.52	29.89	31.32	6.34	8.24	9.66
Persons	41.73	43.31	44.78	20.19	24.19	27.82

Sources: Census, 1981, 1991, 2001 (Provisional Population Tables).

To compare the longer term picture in terms of growth of employment, National Sample Survey (NSS) data have been disaggregated into two periods. The aggregate growth of employment has stayed more or less the same, namely 1.71 and 1.74 per cent between the periods 1972–3 to 1983 and 1983 to 1993–4 (Table 3.3). What can also be seen is that employment for males has increased at an annual rate of 1.36 per cent and 1.87 per cent, respectively between these two periods. In the case of females, employment grew faster in the first period, namely at 2.36 per cent, as compared to 1.45 per cent in the latter period. However, preliminary analysis of NSS 55th round data for 1999–2000 suggests that the annual growth rate has dropped to 0.24 per cent, well below the anticipated growth rate of 2.0 per cent. This is a worrying trend, which will have to be addressed.

As Table 3.2 also illustrates, WPRs were higher in rural areas than in urban areas. Tamil Nadu 's rural WPR increased from 46.48 per cent in 1981 to 50.39 per cent in 2001, whereas urban WPR increased from 37.59

per cent to 33.34 per cent. However, the urban WPR accelerated at a faster rate compared to the rural WPR during this period. One salient point is that the female WPRs, in both rural and urban areas, increased at a faster rate than male WPRs. As a result of the faster growth of female WPRs, female workers as a percentage of total workers in the State increased from 31.4 per cent in 1981 to 34.7 per cent in 2991.

TABLE 3.3—GROWTH OF EMPLOYMENT BY SEX

	Total Employment			*Growth Rate*		
NSS Rounds	*Male*	*Female*	*Total (in million)*	*Male (%)*	*Female (%)*	*Total (%)*
1972–73	12.61	7.68	20.28	–	–	–
1977–78	13.48	8.92	22.40	1.34	3.05	2.00
1983	14.43	9.60	24.03	1.37	1.68	1.42
1987–88	15.74	10.14	25.87	1.75	0.90	1.49
1993–94	17.37	11.19	28.56	1.65	1.66	1.66
1999–2000	18.26	10.73	28.98	0.83	(–) 0.70	0.24
1972–73/1983	Compound Growth Rate per Annum			1.36	2.36	1.71
1983/1993–94				1.87	1.45	1.74

Source: Sarvekshana, Various issues.

Spatial Distribution of Workers

In Tamil Nadu, as per the 2001 Census, Namakkal had the highest WPR (56.28 per cent). The districts of Chennai (34.19 per cent) and Kanniyakumari (32.68 per cent) had the lowest WPR mainly because of low female WPRs of 12.09 per and 12.23 per cent, respectively. As many as 13 districts had higher WPRs than the State's average of 44.78 per cent.

The WPR for males was above 60 per cent in Erode (66.80 per cent), Coimbatore (64.01 per cent), Karur (63.33 per cent) and Salem (60.84 per cent) districts. It was below the State average (58.06 per cent) in Kanniyakumari (53.39 per cent), Thoothukudi (56.33 per cent) and Chennai (55.19 per cent). The female WPR was highest in Namakkal (88.71 per cent), followed by The Nilgiris (55.28 per cent), Perambalur (52.19 per cent), Erode (44.76 per cent), Karur (42.95 per cent) and Aniyalur (41.21 per cent). The female WPR was below the State average (31.32 per cent) the lowest being in Chennai (12.09 per cent) and Kanniyakumari (12.23 per cent).

Distribution of Workers by Age

The NSSO gives details with regard to age-specific worker population ratio (WPR). Worker population ratio is defined as the total number of persons employed as a percentage to the population.[1] The WPR's, in both rural and urban areas, in respect of all age groups are significantly higher in Tamil Nadu than those at the national level, in view of relatively higher WPR's for females in the State. The WPR's for both rural and urban areas steadily increase with older age groups, starting with the age group 20–4 and peaking with the age group 40–4. Thereafter,

[1]WPR 'as defined by the NSSO and WPR as defined by the census are essentially the same thing, that is the number of workers to total population. In general, WPR's, which are based on a sample, are slightly higher than WPRs. We have generally made use of census WPRs to capture the overall situation in terms of number and percentage of workers, but have made use of WPR' for a more detailed age-specific analysis.

the WPR's decline. The estimated number of workers in the older age group of 60 and above in Tamil Nadu is about two million, accounting for about 6.9 per cent of the total workforce. The corresponding proportion for All India is 7.4 per cent (Table 3.4).

TABLE 3.4—AGE-SPECIFIC WORKER POPULATION RATIO, 1993–94 AND 1999–2000

Age Group	Tamil Nadu				All India			
	1993–94		1999–2000		1993–94		1999–2000	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
5–9	21	5	4	1	13	5	7	3
10–14	183	88	86	47	140	56	93	43
15–19	579	330	451	297	481	236	411	218
20–24	706	516	653	467	651	436	618	420
25–29	799	592	751	600	732	571	713	543
30–34	888	712	837	625	782	632	758	599
35–39	867	668	833	705	807	651	784	637
40–44	893	715	841	724	798	685	791	664
45–49	872	675	833	698	789	678	780	645
50–54	812	715	815	616	763	636	741	633
55–59	752	564	751	537	702	550	688	517
60–64	649	412	460	258	619	371	430	241
65 and above	396	244			375	212		
All	539	402	513	393	444	347	417	337

Source: NSS 50th Round Results, *Sarvekshana*.

Between 1993–4 and 1999–2000, child labour has come down from 1.02 million to 0.45 million—a significant decline of 56 per cent.[2] While the number of rural child workers declined from 0.81 million to 0.34 million, the decline in urban areas was from 0.21 million to 0.11 million (Box 3.1). An interesting feature is the reversal of the trends hitherto observed with regard to sex composition of child labour. Female child workers accounted for about 55 per cent of the total child workers in 1987–8 and 1993–4. During 1999–2000, however, male child workers (56.3 per cent) outnumbered female child workers (43.7 per cent).

Child workers, like all other workers, can be classified either as principal or subsidiary. Female child workers accounted for 5.1 per cent (5.73 lakhs) and 4.2 per cent (1.96 lakhs) of the total female workers in 1993–4 and 1999–2000 respectively. Subsidiary status female workers accounted for only 11.3 per cent (65,000) in 1993–4 and 16.3 per cent (32,000) in 1999–2000 of the total female child workers (principal and subsidiary). It follows that the decline in child labour is mainly due to a decline of principal status workers. The State's efforts in reducing and ultimately eliminating child labour through various social sector programmes (nutrition, noon-meal schemes, free supply of uniforms and books, free bus passes, girl child development schemes, marriage assistance and other incentive schemes for increasing school enrolment), appear to have been successful. The accelerated growth of per capita income and relatively better standard of living has made it possible for some of the households to withdraw younger/older age group earners and occasional workers (mostly women) from the labour market.

[2]This decrease should be interpreted with caution.

Box 3.1—Child Labour Declines in Tamil Nadu

Employment of children under a specified age in business is prohibited by law as it deprives them of educational opportunities at the right time and stunts their productive capacity to a greater degree. The Indian Constitution provides, under Article 24, that no child below the age of 14 years shall be employed to work in any factory or mine or engaged in any other hazardous employment. It also specifies, under Article 39, that the tender age of children is not abused and that they are not forced by economic necessity to enter vocations unsuited to their age or strength, and are protected against exploitation and against moral and material abandonment.

The incidence of child labour is the highest in the unorganized, informal and unregulated sectors. Higher incidence of child labour is also observed in home-based activities (beedi-rolling), apprentices in traditional crafts and in certain factory employment (match work). While elimination of child labour is the ultimate goal, the most urgent need is to prevent exploitation in terms of wages, duration of work and working conditions. As per the 1991 Census, child labour accounted for 2.39 per cent of the total work force. Unlike the national picture, female child workers (3.64 per cent) outnumber the male child workers (1.7 per cent) in Tamil Nadu. The most recent evidence, however, suggests a great fall in the employment of child labour.

ESTIMATED CHILD LABOUR IN TAMIL NADU *(million)*

Area	*1987–88 (43rd NSS)*			*1993–94 (50th NSS)*			*1999–2000 (55th NSS)*		
	Girl	*Boy*	*Child*	*Girl*	*Boy*	*Child*	*Girl*	*Boy*	*Child*
Rural	0.59	0.45	1.04	0.48	0.34	0.81	0.16	0.18	0.34
Urban	0.13	0.14	0.26	0.09	0.11	0.21	0.04	0.07	0.11
Tamil Nadu	0.72	0.59	1.30	0.57	0.45	1.02	0.20	0.25	0.45

Industrial Classification of Workforce

A broad analysis of census data shows a declining share of cultivators, a significant increase in agricultural labourers and a declining share of household industry workers (Table 3.5) upto 1991 Census. While the proportion of cultivators declined from 42.0 per cent in 1961 to 23.4 per cent in 1991, that of agricultural labourers recorded an increase from 18.4 per cent to 31.1 per cent for the corresponding period. In absolute terms, also similar trend was seen. However, 2001 Census show that while share of cultivators decline (18.4 per cent from 25.0 per cent) that of agricultural labourers and workers in household industries moved up moderately. There is a steady increase in the share of other industries, indicating that village industries and crafts are not in a position to accommodate surplus labour from agriculture (Table 3.5).

TABLE 3.5—INDUSTRIAL CLASSIFICATION OF WORKERS IN 1981 AND 1991 CENSUSES (MAIN AND MARGINAL WORKERS) COMBINED

(in millions)

Industrial category	*1961*	*Percentage Share*	*1981*	*Percentage Share*	*1991*	*Percentage Share*	*2001*	*Percetange Share*
Cultivators	6.46	42.0	5.82	28.8	6.04	25.0	5.11	18.4
Agricultural labourers	2.83	18.4	6.77	33.5	8.76	36.2	8.67	31.1
Household industry and manufacturing etc.	2.06	13.4	0.97	4.8	0.87	3.6	1.46	5.3
Other workers	4.03	26.2	6.64	32.9	8.53	35.2	12.57	45.2
Total workers	15.37	100.0	20.20	100.0	24.19	100.0	27.81	100.0

Source: Census Documents.

The indications are, however, that there has been growth in the manufacturing and service sectors. The estimated number of 'other' workers increased from 4.03 million in 1961 to 12.57 million in 2001. Consequently, the proportion of 'other' workers to total workers went up from 26.2 per cent to 45.2 per cent. Most of these other workers would have been either manufacturing or service sector employees in occupations such as construction, manufacturing, trade and transport, hotels and financial and community services.

TABLE 3.6—INDUSTRIAL CLASSIFICATION OF WORKERS

	Employment (millions)			*Growth Rate*	
Sectors	*1987–88*	*1993–94*	*1999–2000*	*1987–88 to 1993–94*	*1993–4/1999–2000*
1. Agriculture	13.79	15.34	14.44	1.79	(–) 1.00
2. Mining	0.11	0.10	0.14	0.00	3.60
3. Manufacturing	4.94	5.05	5.30	0.37	0.80
4. Electricity	0.09	0.11	0.10	3.40	(–) 1.19
5. Construction	0.92	1.08	1.45	2.87	4.90
6. Trade, hotels, transport	3.20	3.57	4.67	1.79	4.65
7. Services	2.85	3.32	2.88	2.63	(–) 2.41
All	25.90	28.56	28.98	1.66	0.24

Source: NSS 43rd, 50th and 55th Rounds.

A more detailed industrial classification based on NSS data is given in Table 3.6. It is seen that the number of workers engaged in agriculture increased from 13.79 million in 1987–8 to 15.34 million in 1993–4, but then declined to 14.44 million in 1999–2000.[3] Agriculture, however, still accounts for close to 50 per cent of the total employment. Next to agriculture, the manufacturing industry accounts for 18.3 per cent (5.3 million) of total employment. The third largest provider of employment is trade, hotels and transport which accounts for about 16 per cent (4.67 million) of total employment. Financial and community services together employs 2.88 million.

Trend analyses show a deceleration in the growth of employment in the agricultural sector in the recent period (Table 3.6). This is on account of the decline in the number of female subsidiary workers and child labour. There is some acceleration in growth of employment in the manufacturing sector. Construction industries show a robust accelerated annual growth rate of 4.9 per cent between 1993–4 and 1999–2000 as against 2.87 per cent between 1987–8 and 1993–4. The trade sector also shows a similar trend.

Sectoral Composition of Workers

In sectoral terms, the primary sector is the major sector in terms of employment. Though the proportion of main workers in this sector decreased from more than 60 per cent in 1961 to approximately 50 per cent in 1999–2000, it is still by far the biggest contributor to employment. The secondary sector accounted for 23.6 per cent of total employment in 1999–2000 while the tertiary sector accounted for 26.1 per cent (Table 3.7).

It is likely that the scenario will change in favour of the secondary and tertiary sectors in the future. The growth of employment in the primary sector has decelerated in both rural and urban areas; on the other hand, the growth of secondary sector employment has accelerated in both rural and urban areas, though the acceleration in rural areas has been higher (2.5 per cent per annum) as compared to urban areas (0.60 per cent per annum)

[3]Census and NSS numbers do not match exactly so in that sense they are not strictly comparable. However, by and large the trends are similar.

(see Table 3.7). Tertiary sector employment actually declined between 1993–4 and 1999–2000 in rural areas while in urban areas it increased at an annual rate of 3.1 per cent (Table 3.7).

TABLE 3.7—COMPOSITION OF WORKERS BY MAJOR SECTORS, 1987–88 AND 1999–2000

(*in million*)

	Primary			*Secondary*			*Tertiary*			*Total*		
	A	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*	*A*	*B*	*C*
Rural	13.0	14.4	13.7	2.9	3.1	3.6	2.4	2.9	2.7	18.3	20.4	20.1
		(1.70)	(–0.8)		(1.42)	(2.5)		(2.4)	(–0.8)		(1.75)	(–0.26)
% Share	70.9	70.7	68.4	15.7	15.3	18.1	13.4	14.0	13.5	100.0	100.0	100.0
Urban	0.9	1.0	0.8	3.0	3.1	3.2	3.6	4.0	4.8	7.5	8.1	8.8
		(2.66)	(–3.2)		(0.31)	(0.6)		(1.93)	(3.1)		(1.37)	(1.46)
% Share	11.5	12.3	9.3	40.7	38.1	36.2	47.8	49.6	54.5	100.0	100.0	100.0
All	13.9	15.4	14.5	5.9	6.2	6.8	6.0	6.9	7.5	25.8	28.5	28.9
		(1.77)	(–0.96)		(0.82)	(1.6)		(2.22)	(1.6)		(1.66)	(0.24)
% Share	53.7	54.1	50.3	23.0	21.8	23.6	23.3	24.1	26.1	100.0	100.0	100.0

Note: Figures in brackets indicate growth rate (%) per annum.
Source: *Sarvekshana*, NSS. A-1987–88; B-1993–94; C-1999–2000.

Gender-wise analysis is also in order here. The share of male workers in primary sector employment has been steadily declining. It declined from 57.4 per cent in 1977–8 to 42.9 per cent in 1999–2000 (Table 3.8). The corresponding ratios for females were 73.2 per cent and 62.8 per cent, respectively. A significant development in recent years is the increase in the share of tertiary sector employment for females, from 13.7 per cent in 1993–4 to 16.5 per cent in 1999–2000. The loss of share in primary sector employment for females has been more or less equally gained by the secondary and tertiary sectors. However, in the case of males, the secondary sector accounted for a relatively higher share in the recent period. If one examines the situation from the late 1970s onwards, it can be seen that the share of male employment in the tertiary sector has increased steadily from 22.9 per cent in 1977–8 to 31.4 per cent in 1999–2000.

TABLE 3.8—SECTORAL DISTRIBUTION OF WORKERS BY SEX

(*percentage*)

NSS	*Primary*		*Secondary*		*Tertiary*		*Total*	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*
1977–78	57.4	73.2	19.7	16.2	22.9	10.6	100	100
1983	49.2	70.4	23.1	16.4	27.6	13.1	100	100
1987–88	46.1	65.8	24.6	20.4	29.3	13.8	100	100
1993–94	45.5	67.3	23.6	19.0	30.8	13.7	100	100
1999–2000	42.9	62.8	25.7	20.7	31.4	16.5	100	100

Source: NSS 32nd, 38th, 43rd and 50th Rounds.

Sector-wise Output

Even though agriculture continues to account for the bulk of employment, this is not reflected in the income originating from the sectors. The agriculture income declined from 24.82 per cent in 1993–4 to 18.16 per cent in 1999–2000, whereas the share of income from secondary and tertiary sectors improved from 33.72 per cent to 34.12 per cent and 41.46 per cent to 47.72 per cent, respectively. In per capita terms, this means that the

average output per worker in the primary sector increased only marginally compared to other sectors where significant increase were noticed (Table 3.9).

TABLE 3.9—SECTORAL SHARE OF NSDP, EMPLOYMENT AND PER WORKER OUTPUT

(At 1993–94 Prices)

	GSDP (Rs Million)				*Employment (in million)*				*Per worker output (Rs)*	
Sector	*1993–94*	*% share*	*1999–2000*	*% share*	*1993–94*	*% share*	*1999–2000*	*% share*	*1993–94*	*1999–2000*
Primary	142,646.6	24.82	155,072.6	18.16	15.4	54.1	14.5	50.3	9263	10,695
Secondary	193,809.3	33.72	291,323.8	34.12	6.2	21.8	6.8	23.6	31.260	42,842
Tertiary	238,364.2	41.46	407,515.3	47.72	6.9	24.1	7.5	26.1	345,546	543,335
Total	574,820.1	100.00	853,911.7	100.0	28.5	100.0	28.9	100.0	20,169	29,547

The low per capita output in the primary sector has wider implications in terms of distribution of income and consumption. As employment in the secondary and tertiary sectors is concentrated in the urban areas, high differentials in per worker output would create an acute rural/urban dichotomy in the State.

Remedial measures are, therefore, necessary for increasing the per worker output in the agricultural sector, both in physical and monetary terms. Diversification of agriculture with adequate emphasis on high value crops and allied activities aimed at increasing the physical productivity per unit of capital would greatly mitigate the problem. The government has already implemented the Tamil Nadu Agriculture Development Project which is a multi-sector development project aimed at improving rainfed agriculture and initiating a more decentralized appoach to decision making.

Employment Structure

It is worthwhile to look at the employment scenario in terms of certain structural characteristics such as casualization of employment, wages and earnings and organized and unorganized sectors. Table 3.10 shows that the percentage of wage labour has increased from 51.4 per cent in 1977–8 to 63.9 per cent in 1999–2000. Wage labour is particularly high amongst female workers (76.7 per cent) and amongst rural workers (81.4 per cent). Having said that, female wage labour has actually decreased from 87.7 per cent in 1977–8 to 76.7 per cent in 1999–2000. Moreover, the percentage of male casual labour also remains high, it has in fact increased from 51.8 per cent in 1977–8 to 60.1 per cent in 1999–2000.

The share of casual employment to total employment increased from 32.9 per cent in 1977–8 to 42.7 per cent in 1993–4 and has remained at about that level (42.2 per cent) up to 1999–2000. The disaggregated scenario between 1993–4 and 1999–2000 suggests that while male casual employment increased from 6.78 million to 7.15 million, female casual employment decreased from 5.41 to 5.07 million. The decline in respect of urban females was steeper, namely –5.95 per cent as opposed to –0.44 per cent for rural females (Table 3.10). Casual labour as a proportion of wage labour amongst agricultural labourer households is as high as 90 per cent. The proportion of casual labour to rural wage labour in general is as high as 81.4 per cent (1999–2000).

TABLE 3.10—DISTRIBUTION OF WORKERS (USUAL STATUS) INTO VARIOUS CATEGORIES

	1977–78	*1983*	*1987–88*	*1993–94*	*1999–2000*
1. Self-employed	48.6	43.3	42.8	40.0	36.1
2. Regular/Salaried	18.5	17.2	19.9	17.3	21.7

(Contd...)

(Table 3.10 Contd.)

	1977–78	*1983*	*1987–88*	*1993–94*	*1999–2000*
3. Casual	32.9	39.5	37.3	42.7	42.2
4. Wage Labour (2+3)	51.4	56.7	57.2	60.0	63.9
5. Total Workers	100.0	100.0	100.0	100.0	100.0
6. Proportion of casual to total wage labour					
(a) Male	51.8	59.8	57.4	64.0	60.1
(b) Female	87.7	85.9	78.4	82.5	76.7
(c) Rural	75.1	82.6	80.4	84.1	81.4
(d) Urban	35.7	40.5	32.6	41.5	32.5
7. All	64.0	69.7	65.2	71.1	66.0

Source: *Sarvekshana*, Various issues.

The rising incidence of casualization is related to the nature of agrarian transformation taking place in the State. The modernization of agriculture appears to have reduced the demand for labour in crop husbandry. A host of other factors—such as the eviction of tenants, immiseration of petty landowners, declining payments in kind, declining area under coarse cereals, expansion of public distribution system (PDS) network and consequent decline in dependence on landlords for food security—have all contributed to the structural change and qualitative transformation of the workforce in rural areas.

One of the consequences of casualization is the high degree of inter-sectoral mobility of labour. A vast majority of the brick-kiln workers, quarry workers and construction workers are basically agricultural labourers and petty landowners. Casualization also brings with it a lack of job security, frequent change of work place, increasing exposure to exploitative, informal, contractual arrangements, intermittent work, poor working conditions and consequently a high level of income instability.

The other component of wage employment is salaried employment. Between 1993–4 and 1999–2000 such employment increased from 4.94 million to 6.29 million. While employment for males in regular salaried employment increased at an annual compound growth rate of 3.78 per cent between 1977–8 and 1999–2000, employment for females in the same category increased at a rate of 5.09 per cent. The increase in regular salaried employment has been faster in urban areas (4.28 per cent) than in rural areas (3.78 per cent). It is also evident from Table 3.10 that the proportion of self-employed workers has declined from 48.6 per cent in 1977–8 to 36.1 per cent in 1999–2000.

Wages and Earnings

Given the high percentage of wage labourers in Tamil Nadu, wage earnings are of considerable importance. There has been a significant increase in the wages of agricultural labourers in recent years. According to the 'Rural Labour Enquiry Report on Wages and Earnings', the increase in average daily earnings in agricultural occupations for men, women and children belonging to rural households was the highest in Tamil Nadu as compared to other southern States as well as All India. The average daily earnings of men have increased by 156 per cent in nominal terms, while those of women and children by 144 and 125 per cent, respectively.

Wages in real terms also increased between 1993–4 and 1997–8 for agricultural labourers. The index of real wages for ploughmen increased by 26.8 per cent, that for male and female transplanters and weeders by 19.3 per cent and 23.4 per cent, respectively and that for male and female reapers and harvesters by 15.2 per cent and

8.9 per cent, respectively. Apart from increases in money wages, the extensive PDS network in the State has not only insulated the poor from price increases but has also contributed significantly in holding the price line in general.

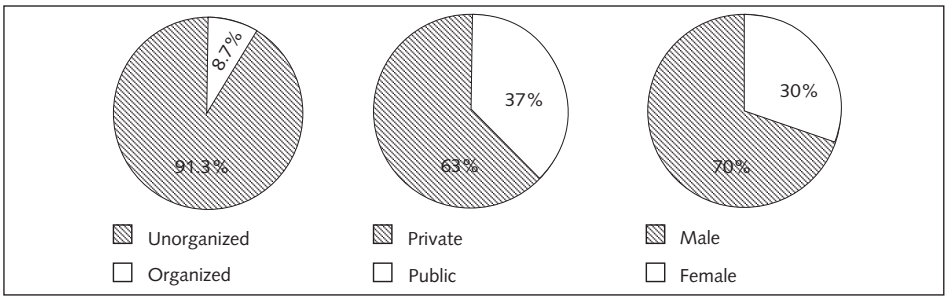
The average daily earnings for men in non-agricultural occupations were even higher in absolute terms as compared to those in agriculture and witnessed an overall growth of 183 per cent between 1987–8 and 1993–4. However, the average daily earnings for women increased by only 131 per cent, that is at a slower rate than for agriculture. As there was not much difference between the average daily earnings of women and children, it can be inferred that, other things remaining the same, women were not getting adult wages in non-agricultural occupations.

Organized Sector Employment

Another important structural indicator of employment is the extent of organized sector employment. The total organized sector employment of 2.52 million accounted for 8.7 per cent of total workers (28.98 million) in 1999–2000. In the organized sector, the share of women has increased from 2.97 lakhs (16 per cent of total organized sector employment) in 1979–80 to 7.54 lakhs (30 per cent) in 1999–2000. Women in public and private sector employment accounted for 4.26 lakhs and 29.9 lakhs, respectively.

The overall scenario suggests the following. First, the indication is that the absorptive capacity of the organized sector has improved somewhat. While the average annual growth rate in organized employment was 1.3 per cent in the Seventh Plan period, it was 2.4 per cent in the Eighth Plan period, with private sector employment registering the fastest growth. Second, despite this growth, the organized sector accounts for only a small percentage of total employment, that is, 8.7 per cent (Figure 3.1).

FIGURE 3.1—TOTAL EMPLOYMENT AND EMPLOYMENT IN ORGANIZED SECTOR, 1999–2000



Public Sector Employment

The structure of the organized sector indicates the dominance of the public sector. This sector accounts for 63 per cent of organized sector employment. Within the public sector, State employees, quasi-government employees, central government employees and local body employees account for 39 per cent, 35 per cent, 15 per cent and 11 per cent of the total, respectively.

A more disaggregated picture highlights other important points. Among the various constituents of the public sector, growth of employment has been most significant within the State government. State government employment increased from 3.75 lakhs in 1979–80 to 6.32 lakhs in 1999–2000. On the other hand, central government employment has actually decreased. Among the various industry-groups providing employment in the public sector, community and social services accounted for the major share (60.3 per cent) in 1999–2000 followed by transport and communication (19.2 per cent). The manufacturing sector which accounted for 9.0 per cent of public sector employment during 1979–80 now accounts for only 6.6 per cent (1999–2000).

The overall scenario, however, is one of growth. In the last two decades, public sector employment has

grown at an annual compound growth rate of 1.42 per cent. Female public sector employment has been growing even faster, namely at a rate of 5.5 per cent.

Private Sector Employment (Organized)

Total organized private sector employment in Tamil Nadu accounted for 9.27 lakhs jobs in 1999–2000. This is signficantly higher than that of previous decades, largely due to the increase in overall growth rates. Whereas growth of employment in the private sector was only 0.65 per cent in the 1980s, it increased to 2.76 per cent in the nineties. In the last two decades, employment for men increased by only 0.80 per cent per annum, while that for women increased at a rate of 3.95 per cent per annum. Consequently, the share of women's employment in the private sector has increased from 22.8 per cent in 1979–80 to 35.4 per cent in 1999–2000.

Almost two-thirds (64.7 per cent) of the organized private sector employment is concentrated in the manufacturing industry. The next major contributor is community and social sevices, accounting for 20.8 per cent. Other tertiary sector employment such as trade, hotels and restaurants, transport and communication and financial services which experienced a negative growth during the eighties started to grow quite quickly in the nineties.

Unemployment

Usual status unemployment refers to relatively long-term unemployment, that is chronic unemployment. It is, in other words, a good indicator of the numbers who are in search of regular employment. Daily status unemployment is, however, considered to be a more inclusive and more useful indicator of the actual magnitude of unemployment.

As per recent NSS data (1999–2000), the unemployment rate for the State as a whole in terms of usual principal status[4] is 2.4 per cent, corresponding to 710,000 unemployed people. The percentage of unemployed is 2.0 per cent in rural areas and 4.0 per cent in urban areas corresponding to 344,000 and 367,000 unemployed people, respectively. The unemployment rate for males is higher than that for females in the rural areas. However, in urban areas the female unemployment rate is higher.

These estimates, as mentioned above, do not actually reflect the true unemployment situation in the State. Most importantly, they do not capture the existence of disguised unemployment and underemployment. Employment Exchange data show about 4.3 million applicants in the live registers, of which one-third are women applicants. This figure should be understood in a situation where 'registration' at the employment exchange is purely voluntary. The other side of the coin is that not all registered persons are necessarily unemployed. However, there is no denying that educated unemployment is on the increase in the State. Among job seekers, 70 per cent have tenth standard qualifications at least.

The net addition to the fast growing labour force combined with the backlog of unemployed/underemployed persons pose a great challenge to development planning in general and manpower planning in particular. With the polytechnics turning out about 30,000 technically qualified persons annually and engineering colleges around 22,000 persons per annum, the growth of technical manpower has been extremely rapid. Furthermore, these numbers do not include the 300,000 or so people who emerge each year with a collegiate education. While the supplementary wage employment programmes and other infrastructure development programmes could mitigate the problems of uneducated and less educated unemployed persons, educated manpower needs to be properly utilized by matching jobs with qualifications and expectations.

[4]NSS data make the distinction between usual principal status and usual principal and subsidiary status unemployment. Usual principal status unemployment refers to all those who are not engaged in economic activity for at least half the year, that is, it does not consider subsidiary employment of a lesser time period.

Policy Initiatives for the Future

A number of critical points emerge from the analysis in terms of the existing employment scenario and the requirements for the future. This section summarizes the important findings and suggests possible policy interventions.

- Given the limited capacity of agriculture to absorb additional labour, more so in water scarce Tamil Nadu, it is desirable to promote a strategy which encourages agricultural labour to be absorbed in other sectors and to consequently raise labour productivity in the farm sector as well.
- With a rapidly expanding technically qualified workforce, greater emphasis should be placed on self-employment ventures in both agriculture and allied activities, particularly horticulture and food processing, as well as in small-scale industries and other non-farm occupations which focus on producing items of mass consumption.
- Self-employment will have to be promoted given the fact that salaried wage employment has been shrinking. Recent trends in industrial employment indicate continued domination of traditional activities such as cotton textile and textile products, food products, leather products, etc. Other industries such as the manufacture of paper and paper products, electrical machinery and IT hardware have also generated significant employment.
- Institutional arrangements for financing self-employment ventures need to be promoted, and the existing region-wise status of non-performing assets of lending institutions studied carefully to diagnose the problem and adopt appropriate measures that would include imparting of skills and training (especially in marketing). In the rural areas, institutional arrangements that promote home-based work linked with marketing offer a good scope.
- Continual manpower development has to be emphasized to train the expanding workforce so as to be abreast of emerging demands in the market.
- Undesirable practices of child labour and bonded labour need to be stopped. Additionally, all workers will have to be brought under either the state-assisted or insurance-based social security umbrella.

Income

Per Capita Income

The per capita income of Tamil Nadu was Rs 15,929 at current prices in 1996–7 as compared to an all-India per capita income of Rs 11,554. This was a reversal of the situation in the 1980s when Tamil Nadu's per capita income was below the all-India average. Tamil Nadu occupies fifth place out of the 15 major States in terms of per capita income. Maharashtra had the highest per capita income, Rs 19,098; followed by Punjab, Haryana and Gujarat which had per capita incomes of over Rs 15,000. Tamil Nadu, however, had a per capita income higher than the other southern states.

Tamil Nadu's recent better performance in terms of per capita income has been due to an annual growth rate of 6.3 per cent between 1990–1 and 1996–7, higher than the growth rate of the other 14 major States.[5] A disaggregated growth rate for the period 1993–4 to 1996–7 illustrates that the tertiary sector grew the fastest at 13.11 per cent annually. The secondary sector grew by 8.78 per cent while the primary sector registered a –0.46 per cent growth rate.

District-wise Per Capita Income

An analysis of district-wise estimates of per capita income reveal wide divergences. Kancheepuram has the highest per capita income and Villupuram the lowest. The per capita income (at current prices) in 1996–7 was Rs 23,075

[5]The 15 States (Tamil Nadu included) are classified as non-special category States by the Union Planning Commission and together account for 96 per cent of total income generated in the country.

in Kancheepuram, almost three times that of Villupuram. Other districts with high per capita income were Chennai, Coimbatore, Madurai, Salem and Erode (See Table A6.4 for district-wise sectoral contribution, Table A6.2 for per capita income and Table A6.5 for percentage growth rate of gross district domestic product). The State average was Rs 13,985.

In general, the urbanized districts such as Chennai and Coimbatore have high per capita incomes. Equally, important, the manufacturing and tertiary sectors contribute a high percentage to total income while the primary sector's contribution in these districts is insignificant. Other districts such as Tiruchirapalli, Madurai and Virudhunagar have high levels of trading and business activities, leading to higher per capita incomes.

Per capita income levels can be classified into different ranges: above Rs 20,000, between Rs 14,000 and Rs 20,000, between Rs 10,000 and Rs 14,000 and below Rs 10,000. As can be seen from Box 3.2, only Kancheepuram and Chennai had per capita incomes of more than Rs 20,000 in 1996–7. Six districts, however, had per capita incomes below Rs 10,000, namely Thanjavur, Cuddalore, Tiruvarur, Sivagangai, Tiruvannamalai and Villupuram. The most surprising (or interesting) case is that of Thanjavur, the granary of the State—which illustrates once again that agriculture does not contribute much to overall income levels.

Box 3.2—District-level Income Categories

Per Capita Income Range(1996–97)	*No. of Districts*	*Names of Districts*
Above Rs 20,000	2	Kancheepuram, Chennai
Rs 14,000 to Rs 20,000	8	Coimbatore, Madurai, Salem, Erode, Tiruchy, Thoothukudi, Thiruvallur, Virudhunagar
Rs 10,000 to Rs 14,000	13	Nilgiris,Vellore, Tirunelveli, Nagapattinam, Namakkal, Theni, Dindigul, Karur, Perambalur Dharmapuri, Pudukkottai, Ramanathapuram, Kanniyakumari
Below Rs 10,000.	6	Thanjavur, Cuddalore, Tiruvarur, Sivagangai, Tiruvannamalai, Villupuram.

In terms of contribution to overall NSDP, Chennai district contributes the maximum (1996–7), namely 11.38 per cent and Coimbatore contributes the next largest share of 9.07 per cent. These two districts together account for approximately one-fifth of NSDP in Tamil Nadu. Nine districts—Theni, Nagapattinam, Pudukkottai, Perambalur, Ramanathapuram, Tiruvarur, Karur, Sivagangai and Nilgiris together contribute about one-fifth as well.

Per Capita Income, Health and Education

Districts with high per capita income would generally be expected to have better education and health standards. A close examination of data, however, reveals that this relationship does not necessarily hold true in Tamil Nadu. While Chennai with a high per capita income does have a high level of literacy (above 80 per cent), districts such as Salem and Erode which have relatively high income levels have quite low literacy levels (below 70 per cent). Moreover, a district such as Kanniyakumari, with a relatively low per capita income, has a literacy rate of over 80 per cent (Table 3.11). In the case of school enrolment, the scenario is similar. Four districts with relatively high income levels, namely Kancheepuram, Thiruvallur, Salem and Erode have low enrolment rates. Having said this, there are districts such as Dharmapuri which have low income levels as well as low literacy rates.

TABLE 3.11—PER CAPITA INCOME AND LITERACY (*per cent*)

Per Capita Income 1996–97 (Current Prices)	*Literacy rate 2001 Census->*	*Above 80*	*70–80*	*60–70*	*50–60*
Above Rs 20,000		Chennai	Kancheepuram		
Rs 15,000–2,0000		Thoothukudi	Madurai Tiruvallur Coimbatore	Salem, Erode	
Rs 12,000–15,000		Udhagamandalam	Vellore, Tiruchy Nagapattinam Virudhunagar Tirunelveli	Namakkal	
Rs 10,000–12,000		Kanniyakumari	Pudukkottai, Theni Cuddalore Ramanathapuram	Karur Perambalur Dindigul	Dharmapuri
Rs 8000–10,000			Thanjavur Tiruvarur Sivagangai	Villupuram T.V. Malai	

Source: Directorate of Evalution and Applied Research.

On the health side, as mentioned above, the story is the same. In a district like Chennai, a positive relationship between income and health holds as also in districts like Dharmapuri, where low income levels translate into low LEB (Table 3.12). Perambalur, Theni, Villupuram, Thanjavur and Tiruvarur also have low per capita income and low LEB (60 to 63 per cent). On the other hand, Kanniyakumari again performs well on the health front despite its low income level, more in line with Kerala.

TABLE 3.12—PER CAPITA INCOME AND LONGEVITY (LEB)

Per capita Income (Rs)	*LEB Years >*	*72–75*	*69–72*	*66–69*	*63–66*	*60–63*
Above Rs 20,000		Chennai	Kancheepuram			
Rs 15,000–20,000			Erode Coimbatore	Thiruvallur Thoothukudi	Salem	Madurai
Rs 12,000–15,000			The Nilgiris	Namakkal Trichy Nagapattinam Virudhunagar	Tirunelveli Vellore	
Rs 10,000–12,000		Kanniyakumari		Karur	Pudukkottai Dindigul Ramanathapuram	Dharmapuri Perambalur Theni
Rs 8000–10,000				Cuddalore T.V. Malai Sivagangai	Villupuram Thanjavur Tiruvarur	

Note: Per capita income 1996–7 at current prices, LEB 1997–8.
Source: Directorate of Evaluation and Applied Research.

Poverty and Inequality

Poverty is another critical issue which requires attention. Poverty, according to official definitions is the inability of an individual to secure a normative minimum level of living. Thus, those living below the poverty line are not

able to secure such a level of living. The poverty lines recommended by the Task Force on Projection of Minimum Needs and Essential Consumption Demand, viz. monthly per capita total expenditure of Rs 49.09 and Rs 56.64 (at 1973–4 prices) for rural and urban areas, respectively at the all-India level are still the base line from which poverty estimates are made. However, as recommended by the Expert Group on Estimation of Proportion of Number of Poor constituted by the Planning Commission, Government of India (1993), State-level poverty lines have been adopted. Thus, while Rs 205.84 per capita and Rs 281.35 per capita (at 1993–4 prices) were adopted as the rural and urban poverty lines at the all-India level, the Planning Commission has stipulated that the rural poverty line in Tamil Nadu be Rs 196.53 per capita per month and the urban Rs 296.63 per capita per month. Based on this poverty line, moreover, the head count ratios, that is those living below the poverty line, have also been calculated for 1999–2000.

Trends in Poverty—India and Tamil Nadu

According to the 55th round of NSS, 26.10 per cent (or 260 million) of India's population still lives below the poverty line. While this is no doubt a significant number, in both percentage and absolute terms, the number of people living below the poverty line has declined significantly over the last few decades. Whereas in 1973–4, 54.88 per cent of people were living below the poverty line, this figure has come down to 26.10 per cent.[6] In terms of numbers, this implies that the number of people living below the poverty line has decreased from 321 million to 260 million. Out of these 260 million, 193 million live in rural areas and 67 million in urban areas.

There are wide divergences in the head count ratios in the country. In 1999–2000, Orissa had the dubious distinction of having the highest percentage of people below the poverty line, 47.15 per cent. The national average was 26.10 per cent. A little over 50 per cent of the total poor (133 million) are concentrated in just four States of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. Among the major States, Assam, Bihar, Madhya Pradesh, Orissa, Uttar Pradesh and West Bengal have poverty ratios higher than the all-India average. Two States, Haryana and Punjab, have less than 10 per cent of the population below the poverty line. Punjab, with a head count ratio of only 6.16 per cent, has the lowest level of poverty.

There has, however, been an overall declining trend in the head count ratio between 1993–4 and 1999–2000. This trend has no doubt differed significantly from State to State. Haryana recorded the highest reduction in poverty level, from 25.35 per cent per cent in 1993–4 to 8.74 per cent in 1999–2000—a reduction of 16.61 percentage points. The decline was the lowest in Orissa, a mere 1.41 percentage points.[7]

TABLE 3.13—TRENDS IN POVERTY LEVELS IN TAMIL NADU

YEAR	*Population BPL (percentage)*			*No. Persons BPL (millions)*		
	Rural	*Urban*	*Combined*	*Rural*	*Urban*	*Combined*
1973–74	57.43	49.40	56.94	17.26	6.69	23.95
1977–78	57.68	48.69	54.79	18.25	7.30	25.95
1983	53.99	46.96	51.16	18.25	7.85	26.10
1987–88	45.80	38.64	43.39	16.18	6.93	23.11
1993–84	32.48	39.77	35.03	12.17	8.04	20.21
1999–2000	20.55	22.11	21.12	8.05	5.00	13.05

Note: BPL—Below Poverty Line.
Source: Planning Commission, Government of India.

[6]There is considerable controversy surrounding the recall methodology adopted in the 55th round of NSS. There are many who argue that the drop in head count ratio (numbers below the poverty line) between 1993–4 and 1999–2000 is actually exaggerated.

[7]Again, the decline in poverty levels between 1993–4 and 1999–2000 needs to be interpreted with some caution because of the change in recall methodology adopted by the NSSO.

While poverty levels remained relatively static in the 1970s and 1980s and well above the 50 per cent level, as mentioned above, there has been a dramatic decrease in poverty levels since that time. Whereas in 1987–8, the poverty level was 45.80 per cent, it declined to 32.48 per cent in 1993–4 and further to 21.12 per cent in 1999–2000. The estimated number of people living below the poverty line in Tamil Nadu in 1999–2000 was 13.05 million (8.05 million in rural areas and 5 million in urban areas). Whereas poverty rates declined from 32.38 per cent to 20.55 per cent in rural areas, the decline in urban areas was from 39.77 to 22.11 per cent. Thus, the levels of poverty are almost equal in rural and urban areas.

Incidence of Poverty—Region and District-wise

As there are no region and district-wise data available yet for the 55th round, data from the 50th round (1993–4) have been utilized. A report entitled 'Counting the Poor—Where are the Poor in India brought' out by the Department of Statistics, Government of India in 1998 provides some useful insights into the prevalence of poverty among different regions in Tamil Nadu (Table 3.14). As the data utilized are only up to 1993–4, it must be noted that the districts included are those which existed at that time (22 only) and consequently are different from the 29 districts utilized in much of the report.[8]

TABLE 3.14—TAMIL NADU—REGION-WISE ESTIMATES OF POVERTY

	Region 1987–88	*Per cent below Poverty Line 1993–94*	*Decline in Poverty Levels in % Points*
Chennai	58.17	44.23	13.94
Coastal	37.09	21.09	16.00
Madurai	50.27	37.35	12.92
Coimbatore	28.78	22.50	6.28
Tamil Nadu	42.90	34.42	8.48
All India	39.60	33.38	6.22

Note: All regions show rural and urban combined.
Source: Department of Economics and Statistics.

Tamil Nadu has been divided into four regions: (1) Chennai (Chennai, Kancheepuram, North Arcot, Tiruvannamalai, South Arcot, Villupuram); (2) Coastal (Tiruchirapalli, Thanjavur, Nagapattinam, Pudukkottai); (3) Madurai (Madurai, Dindigul, Virudhunagar, Tirunelveli, Kanniyakumari, Thoothukudi, Ramanathapuram, Sivagangai); and (4) Coimbatore (Coimbatore, Erode, Nilgiris, Salem, Dharmapuri). According to the above mentioned study, 30.44 per cent of the State's total population lived below the poverty line in 1993–4. The region-wise poverty estimates show that poverty levels have been especially high in the Chennai and Madurai regions and below the State average in the Coastal and Coimbatore regions. While the percentage of people living below the poverty line was the highest in Chennai at 44.23 per cent, it was only 21.09 per cent in the Coastal region. In all the regions, however, there was a significant drop in the number of people below the poverty level between 1987–8 and 1993–4, the most significant drop being seen in the coastal region.

It must be noted that while NSS data were also the basis for calculating district-wise poverty ratios, the State sample was clubbed with the central sample in order to get better results.[9] According to these estimates,

[8]While the analysis applies to only 22 districts, it is not strictly comparable with the data presented in the rest of the HDR. Also, it is slightly dated. Having said that, it gives a broad indication of the region and district-wise poverty and the inequality situation in the State.

[9]By clubbing the central and State samples, the results have changed slightly in terms of the percentage of people below the poverty line. The numbers given in this section pertaining to poverty in 1993–4 are, therefore, not strictly comparable with those in the previous section which used the Planning Commission estimates directly.

31.66 per cent of the population was below the poverty line in 1993–4 (Table A6.6). The incidence of poverty was relatively higher in urban areas (38.63 per cent) than in rural areas (28.93 per cent).

The incidence of poverty in 1993–4 was the highest in South Arcot district, where approximately half of the population was living below the poverty line. Other districts with high levels of poverty were Kanniyakumar (48.59 per cent), Thoothukudi (47.02 per cent), Dindigul (46.28 per cent and Tirunelveli (44.10 per cent). Erode had the lowest percentage of people living below the poverty line, 18.32 per cent. Overall, the six districts of South Arcot, Tiruchirapalli, Kancheepuram, Salem, Dharmapuri and Coimbatore together accounted for approximately 50 per cent of the population below the poverty level.

The districts were also grouped into three broad categories, namely high poverty districts (more than 40 per cent of the population living below poverty line), moderately poor districts (30 to 40 per cent living below poverty line) and low level poverty districts (below 30 per cent).[10] As seen from Table 3.15, six districts were considered to be high poverty level districts in 1993–4, five were moderate districts and eleven low poverty districts. What is noticeable is that Chennai which is a high per capita income district nonetheless had a moderate level of poverty. Moreover, Dharmapuri, a low per income district, is classified as a low poverty district.[11] Another puzzling case is that of Thoothukudi which had high per capita income as well as a high poverty level.

TABLE 3.15—DISTRICTS ACCORDING TO LEVEL OF POVERTY

Poverty Ratio Range	*No. of Districts*	*Names of Districts*
High poverty (above 40%)	6	Cuddalore, Tiruvannamalai, Dindigul, Thoothukudi, Kanniyakumari and Tirunelveli
Moderate poverty (30–40%)	5	Chennai, Vellore, Salem, Thanjavur and Madurai
Low poverty (below 30%)	11	Kancheepuram, Dharmapuri, Nilgiris, Tiruchy, Pudukkottai, Sivagangai, Coimbatore, Virudhunagar, Ramanathapuram, Nagapattinam and Erode.

Poverty Levels in Social Groups

Evidence also exists that the incidence of poverty among the SC and ST population is much higher than the State average for all communities. According to a study by Ray (2000), 48.50 per cent of rural SC and ST households and 56.30 per cent of urban households lived below the poverty line compared to 33.38 per cent of total rural households below poverty line and 34.80 per cent of total urban households respectively in 1993–4.[12] Poverty levels in female-headed households, in both rural and urban areas, were also higher than the poverty levels in all households (Table 3.16).

TABLE 3.16—POVERTY LEVELS AMONG SC AND ST HOUSEHOLDS, 1993–94

State	*Per Capita Total Expenditure in Rupees*			*Poverty Percentage*		
	All HH	*SC, ST HH*	*FH HH*	*All HH*	*SC, ST HH*	*FH HH*
Tamil Nadu-R	309.22	252.61	302.87	33.38	48.50	36.80
Tamil Nadu-U	483.76	371.45	380.07	34.80	56.30	46.59

(Contd...)

[10]The category 'low' poverty districts does not suggest that poverty levels in the 20 per cent range are absolutely low, but that they are just relatively low.

[11]How Dharmapuri was considered a low poverty level district needs further analysis.

[12]Unlike the previous analysis which relates to individuals below the poverty line, these numbers pertain to households.

(Table 3.16 Contd.)

State	Per Capita Total Expenditure in Rupees			Poverty Percentage		
	All HH	SC, ST HH	FH HH	All HH	SC, ST HH	FH HH
All India-R	308.27	272.35	326.66	34.40	44.70	32.64
All India-U	513.92	433.43	502.61	24.30	32.40	28.45

Note: All HH-ll Households, SC, ST HH-SC and ST Households and FH HH-Female Headed Households, R-rural, U-urban.
Source: Ranjan Ray, 'Poverty Household Size and Child Welfare in India', Economic and Political Weekly, 23 September 2000.

Inequality in Consumption

As can be seen from Table 3.17, there is considerable inequality in terms of consumption as well. Whereas the poorest 10 per cent of the population account for a mere 3.5 and 4.0 per cent, respectively of total urban and rural consumption expenditure (1993–4), the top 10 per cent account for 26 and 24 per cent of consumption expenditure, respectively. It is also noticeable that consumption inequalities are greater in urban areas.

TABLE 3.17—SHARE OF CONSUMPTION EXPENDITURE

Population share			Expenditure share			
Population (%)		Cumulative % of population	Rural	Cumulative % of Expenditure	Urban	Cumulative % of Expenditure
Bottom	10%		4.0		3.5	
Next	10%	20	6.0	10	5.0	8.5
Next	10%	30	6.5	16.5	5.5	14.0
Next	10%	40	7.5	24.0	7.0	21.0
Next	10%	50	8.0	32.0	7.0	28.0
Next	10%	60	8.0	40.0	9.0	37.0
Next	10%	70	10.5	50.5	10.0	47.0
Next	10%	80	11.5	62.0	11.5	58.5
Next	10%	90	14.0	76.0	15.5	74.0
Next	10%	100	24.0	100.0	26.0	100.0

An index widely used to assess the inequality in consumption (as well as in income) is the Gini Index. It measures the extent to which the distribution of consumption expenditure among individuals and households within an economy deviates from a perfectly equal distribution. The Gini Index ranges from 0–100 with zero suggesting perfect equality and 100 perfect inequality. The NSS data on consumption expenditure have once again been used. The Gini Index for Tamil Nadu as a whole in 1993–4 was 28.3 (27.0 for rural areas and 31.7 for urban areas). This urban–rural differential can be explained if one compares the cumulative consumption of different income categories (Table 3.17). In urban areas, the bottom 30 per cent of the population accounted for 14 per cent of expenditure, while in rural areas, the bottom 30 per cent of the population accounted for 16.5 per cent of expenditure. Moreover, the top 10 per cent of the population in the urban areas accounted for 26 per cent of the expenditure as opposed to 24 per cent in rural areas.

Interestingly, Dharmapuri district has the distinction of having the least inequality in the State while Chennai has the highest (Table 3.18) Other districts with relatively higher inequality scenarios are

Tiruvannamalai, Coimbatore, Kancheepuram and Thanjavur. Other better performers include North Arcot, South Arcot, Virudhunagar, Sivagangai and Madurai.

TABLE 3.18—GINI INDEX

S.no. Districts	GINI INDEX		
	Rural	*Urban*	*Total*
1. Chennai		33.3	33.30
2. Kancheepuram	29.7	30.5	30.22
3. North Arcot	30.5	21.9	24.36
4. Dharmapuri	24.7	22.6	22.78
5. Tiruvannamalai	22.7	33.1	32.17
6. South Arcot	29.3	22.8	23.73
7. Salem	33.2	28.0	29.32
8. Erode	25.9	24.6	24.75
9. Nilgiris	28.6	21.8	24.22
10. Coimbatore	32.5	30.4	31.25
11. Dingidul	33.5	25.3	26.83
12. Tiruchy	30.0	24.2	24.89
13. Thanjavur	36.3	26.8	30.26
14. Pudukkottai	28.7	26.1	26.47
15. Sivagangai	29.5	21.2	23.33
16. Madurai	26.0	22.5	23.92
17. Virudhunagar	30.1	19.7	23.12
18. Ramanathapuram	26.5	24.1	24.60
19. Thoothukudi	25.2	25.5	25.39
20. Tirunelveli	32.4	25.4	28.44
21. Kanniyakumari	28.1	26.4	26.64
22. Nagapattinam	30.0	22.4	24.07
STATE	27.0	31.7	28.32

The relationship between income, poverty and inequality, therefore, seems quite complicated. While Chennai fares well in terms of income, it has quite high levels of poverty as well as inequality (Table 3.19). On the other hand, Dharmapuri which fares poorly not only in income terms but also in terms of education and health indicators, fares better in terms of poverty and inequality. Why this is so is difficult to say. One possible explanation is that Dharmapuri fares better in terms of inequality and poverty because most people have low levels of income, but nonetheless are marginally above the poverty line. On the hand, understanding why Chennai has high other inequality levels is easier. While there are many who earn high salaries in Chennai, there are as many who continue to live on the margin. The other noteworthy point is that districts such as Salem fare quite well in terms of income, inequality and poverty but not well at all in terms of social indicators.

TABLE 3.19—PER CAPITA INCOME AND POVERTY IN DISTRICTS, 1993–94

Poverty ratio % Æ Per capita Income in Rs Ø	*Above 50%*	*45–50%*	*40–45%*	*35–40%*	*30–35%*	*25–30%*	*Below 25%*
Above 10,000		Thoothukudi			Chennai	Coimbatore Kancheepuram	
9001–10000					Salem, Madurai	Virudhunagar	Erode
8001–9000		Dindigul	Tirunelveli	North Arcot			The Nilgiris and Trichy
7001–8000					Thanjavur	Dharmapuri	Nagapatinam
6001–7000	South Arcot	Kanniyakumari				Pudukkottai, Ramanathapuram Sivagangai	
5001–6000			Tiruvannamalai				

Future Policy Imperatives

Tamil Nadu has made significant strides in terms of poverty reduction and it has also achieved a lot in terms of the social sector. Besides the budgetary reasons for this (the State has spent more over time), the achievements are also due to the following factors: the implementation of poverty alleviation schemes aimed at income generation and employment creation, the noon meal scheme covering school children and old age pensioners and the implementation of other nutrition programmes such as the Integrated Child Development Services Scheme (ICDS) aimed specifically at improving women and children's nutritional status.

Having said this, the fact that many people continue to live below the poverty line and that there are glaring shortcomings in terms of specific social sector indicators, there is need for concern. While many of the interventions necessary in the social sector have been highlighted in other chapters, a number of points specifically in terms of employment and income are highlighted below.

- Poverty reduction strategies in Tamil Nadu should lay emphasis on urban areas. While at the national level the incidence of poverty is more in rural areas, in Tamil Nadu the reverse is true.
- More emphasis should be placed on employment generating schemes. Unemployment rates are quite high in Tamil Nadu, especially in terms of daily unemployment. In the past, povety alleviation schemes have focussed more on asset creation—as a result not enough emphasis has been placed on employment generation.
- Specific attention is required for inter-district variations. Clearly, the problems that districts face in terms of income, poverty and inequality are signficantly different and warrant district-specific interventions.
- Given the structural changes taking place in the economy, employment creation will have to focus increasingly on non-farm employment, in the manufacturing and service sectors.

4. Demography, Health and Nutrition

Chapter

4

Demography, Health and Nutrition

In the HDI, life expectancy is the indicator which is meant to capture the overall health status of the population. However, health is much more than just life expectancy, it includes questions of fertility, morbidity, mortality and nutrition. The other important point is that health status is rarely the outcome of government policies and programmes alone. In fact, it is often the outcome in spite of government programmes.

This chapter documents the demographic, health and nutrition status of Tamil Nadu. It analyses the trends and changes in health and nutritional indicators in the State, the effectiveness of government policies and programmes and the role that social norms and culture play in influencing health outcomes.

Demographic Trends and Health Indicators

Population and Demographic Transition

An analysis of the decennial growth of population in the State from 1901 to 2001 shows that total population grew over three times during this period. This is much less than the four-fold growth at the all-India level. Tamil Nadu's population in 2001 was 62.1 million as per the provisional figures of the 2001 Census.

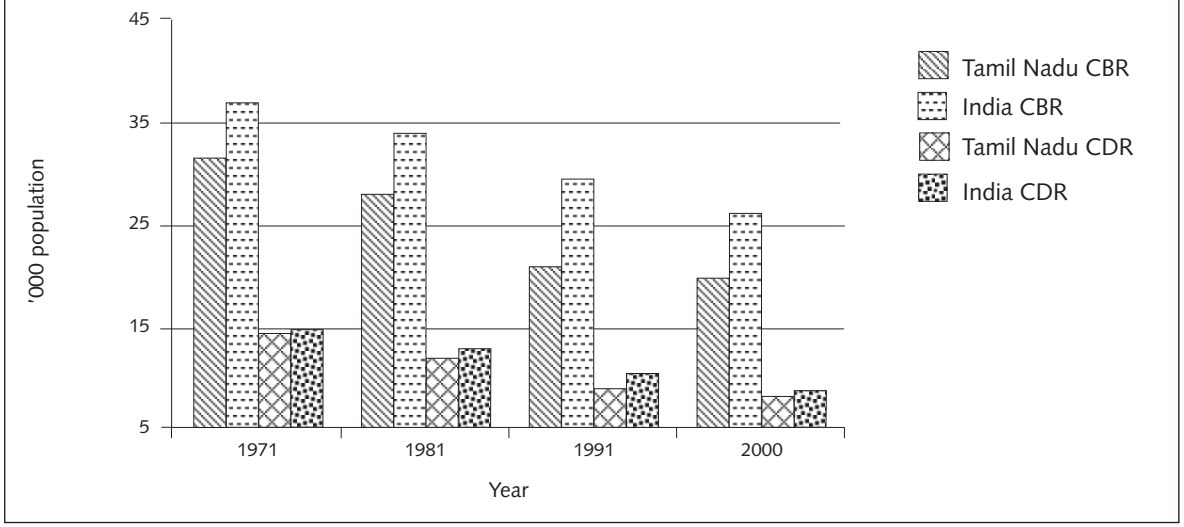
The growth of population in India and Tamil Nadu after 1951 has been much sharper than that before 1951. From the perspective of disease control and nutrition, this can be construed as a positive development. Birth rates declined significantly in the 1970s and even more so in the 1980s. Since then, both birth and death rates have been declining in such a way as to result in a slow but secular decline in the natural rate of growth. That this occured even before sustained and widespread increases in economic growth took place and, in spite of sharp inequalities in standards of living, is noteworthy.

Both morbidity and mortality are important indicators of health status. Data on morbidity patterns are scarce and are not easily reducible to simple and striking indicators. The discussion of basic indicators of the health status of Tamil Nadu's population comprises the following variables: birth and death rates, IMR, fertility rate, proportion of institutional deliveries and sterilizations.

Crude Birth and Death Rates

Between 1971 and 2000, the State's Crude Birth Rate (CBR) declined from 31.4 to 19.3, a decline of nearly 39 per cent, while for India as a whole CBR declined from 36.9 to 25.8, a decline of only 30 per cent (Figure 4.1).

FIG. 4.1—CBR AND CDR FOR TAMIL NADU AND INDIA, 1971–2000



Source: Sample Registration System.

Among the major States only Kerala experienced a faster decline of 42.0 per cent. The decline in CBR has been especially rapid since 1984.

Data from the VES 1999, for the reference year 2000 show that the decline in birth rate has been taking place uniformly across all districts. In fact, district CBRs varied within a band of 16.3 to 21.3, with only Dharmapuri outside this band at 26.1.

A second period of decline in birth rates for Tamil Nadu is observed after the mid-1980s. This rapid decline in fertility brought the birth rate in Tamil Nadu to a level almost as low as that for Kerala by the mid-1990s (Tamil Nadu 20.3; Kerala 18.0) and only a couple of points away from stabilization levels. The decline in fertility was greater among the less educated and SCs, as compared to the more educated and other category people. In recent years, however, there has been a levelling-off of the birth and death rates in Tamil Nadu, and consequently the natural growth rate of population in the State. This is particularly true after 1993. The all-India trend, however, has continued to show a decline.

The decline in death rates, while not as impressive as the decline in birth rates, has nevertheless been significant. From 14.4 in 1971, the Crude Death Rate (CDR) came down to 7.9 in 2000 as per the SRS, the corresponding figures for India being 14.9 and 8.5.

Rural–urban differences have been as expected, with rural birth and death rates exceeding the urban rates, but the gap between rural and urban rates has been declining sharply from the 1980s. Thus, even in the presence of significant rural–urban differences in settlement as well as other socio-economic indicators, a trend towards homogenization is observed particularly for birth rates. This phenomenon is called the 'homogenization of the demographic regime'—as differences between urban and rural mortality and fertility decline very sharply. In Kerala also, there is hardly any rural–urban gap in demographic behaviour. There, however, it is largely due to the fact that there is a strong rural–urban continuum in the settlement structure.

This homogenization is not observed at the all-India level. The SRS figures for Tamil Nadu and India show that for Tamil Nadu the rural birth rate stood at 21 as compared to 19 for urban (a gap of 2); the rural death rate stood at 8.8, compared to 6.6 for urban (a gap of 2.2). Against this, the all-India rural–urban differences were sharper. Regarding birth rate, the rural–urban gap was as high as 7.3, while that for the death rate was 3.2.

TABLE 4.1—IN-MIGRANTS OF LAST RESIDENCE WITH DURATION OF RESIDENCE 0–9 YEARS, 1991

S. no.	Districts	Total (in million)		
		Persons	Males	Females
1	Chennai	0.49	0.33	0.16
2	Chengalpattu	0.32	0.15	0.17
3	Coimbatore	0.20	0.10	0.10
4	Ramanathapuram	0.02	0.01	0.01
5	Kanniyakumari	0.02	0.01	0.01
6	Sivagangai	0.03	0.01	0.02

Source: Census of Tamil Nadu, TN State Disrict Profile 1991.

Migration

Apart from birth and death rates, migration is another variable that impacts population levels. In the census, migration is studied as a movement from the place of last residence or from place of birth. Migration can be rural–rural, rural–urban, urban–rural or urban–urban, each having either intra-state, inter-state and/or international components.

Both for Tamil Nadu and India, intra-state migrants account for the highest share of all migrants, followed by inter-state, with international migrants being the lowest. The share of female migrants is more than that of male migrants, both for Tamil Nadu and All India. Among intra-state migrants, rural to rural migration accounts for the largest share, followed by rural to urban, then urban to urban and finally urban to rural. Data show higher female migrants on account of the families having moved or due to marriage. In respect of males, much of the migration is either due to the family having moved or for employment.

Table 4.1 shows migration levels in selected districts. It may be surmised that the most desired destinations are those with better expected opportunities for livelihood, education and marriage. These are also likely to be places of urban stress, requiring State intervention. Rural–urban migration is known to result in shelter and environmental problems and associated problems such as worsening slum conditions, urban crowding and unsanitary living conditions.

Sex Ratio

Tamil Nadu's sex ratio has improved from 974 to 986 between 1991 and 2001 (Table 4.2). There has been an improvement in the sex ratio in some of the districts prone to female infanticide. Salem's sex ratio improved from 925 to 929, Dindigul 976 to 986, Madurai 964 to 978 and Theni 964 to 979. However, Dharmapuri has defied any positive change (Table 4.2).

TABLE 4.2—RURAL, URBAN SEX RATIOS IN SOUTHERN STATES AND INDIA, 1981, 1991 AND 2001

India/States	1981	1991	2001
India – Total	934	927	933
– Rural	952	939	NA
– Urban	879	894	NA
Andhra Pradesh – Total	975	972	978
– Rural	984	977	NA
– Urban	948	959	NA

(Contd...)

(Table 4.2 Contd.)

India/States	*1981*	*1991*	*2001*
Karnataka – Total	963	960	964
– Rural	978	973	NA
– Urban	926	930	NA
Kerala – Total	1032	1036	947
– Rural	1034	1037	NA
– Urban	1021	1034	NA
Tamil Nadu – Total	977	974	1058
– Rural	987	981	NA
– Urban	956	960	NA

Note: NA-not available.
Source: Census of India, 1991, 2001 (provisional).

Moreover, though the State's sex ratio has improved in the last decade and is much higher than the all-India figure of 933, the adverse female–male sex ratio is still of concern. Among the major States, however, only Kerala's sex ratio has consistently been above 1000.

Comparing rural–urban sex ratios for 1981, 1991 and 2001 data (Table 4.2), it can be seen that rural sex ratios in India are higher than urban ones. This has also been the case in the southern states. Trends, however, show a decline in rural areas and an increase in urban areas for Tamil Nadu and India. In Kerala, there is an increase for both urban and rural areas.

Juvenile Sex Ratio

While the overall sex ratio has increased in Tamil Nadu between 1991 and 2001, the juvenile sex ratio has decreased from 948 to 939. Salem has the lowest juvenile sex ratio of 826. Other districts with very low juvenile sex ratios are Dharmapuri (878), Theni (893) and Namakkal (896).

This trend of declining sex ratio has been attributed to a number of factors: missing women through undercounting, the lower status of women contributing to their being considered dispensable, higher mortality during childhood because of less care and nutrition, higher mortality during childbirth, female infanticide and recent technological developments that aid sex-selective abortions.

Life Expectancy at Birth

According to the SRS, LEB for Tamil Nadu for 1996–2001 was 65.2 years for males and 67.6 for females. The corresponding figures for India were 62.4 and 63.4, respectively. Only Kerala, Punjab and Maharashtra were ahead of Tamil Nadu in this regard.

District estimates show that LEB varies from a low of 61.83 years in Dharmapuri to a high of 74.21 years in Chennai. Apart from Chennai, LEB exceeds 70 years in only Kanniyakumari district. Most districts report LEB close to the State average of 66.74 years (Table 4.3).

TABLE 4.3—LIFE EXPECTANCY AT BIRTH, 1997

S.no	*District*	*Male*	*Female*	*Total*
1	Chennai	70.92	77.96	74.21
1	Kanniyakumari	70.36	74.96	72.65
2	Virudhunagar	64.24	69.11	66.59

(Contd...)

(Table 4.3 Contd.)

S.no	*District*	*Male*	*Female*	*Total*
3	Nagapattinam	64.46	68.45	66.36
4	Pudukkottai	64.36	66.75	65.53
5	Salem	65.12	65.36	65.24
6	Ramanathapuram	63.19	67.24	65.18
8	Thanjavur	61.98	66.88	64.38
9	Madurai	61.06	63.24	62.15
10	Dharmapuri	61.66	62.05	61.83
	State	64.91	68.85	66.74

Source: Vital Events Survey 1998, DANIDA, TNHCP, Chennai.

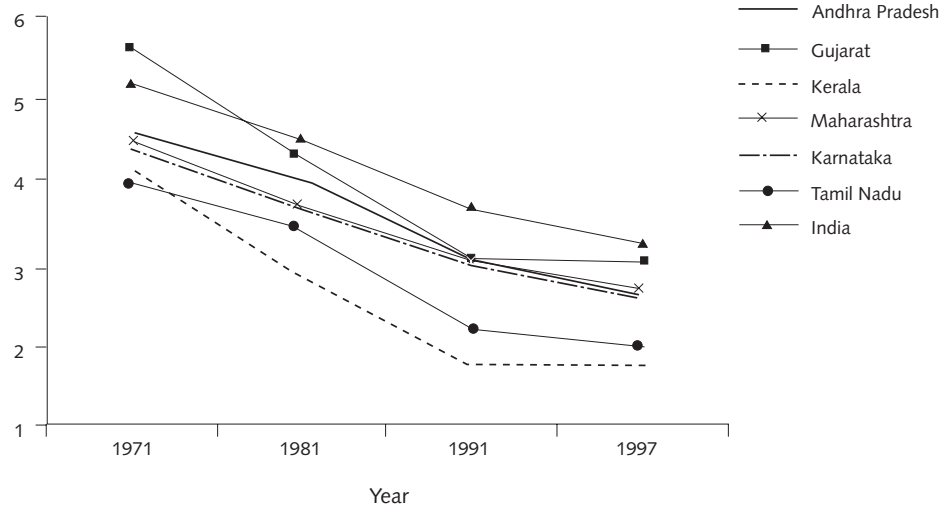
As noted earlier, there are two data sets for many of the health indicators. The VES estimate of LEB for males for the State as a whole at 64.91 years is very close to the SRS estimate for 1996–2001 at 65.2, while the VES estimate for females at 68.85 is slightly higher than the SRS estimate of 67.6. In all districts, female LEB exceeds male LEB with the difference being the highest in Chennai district at 7.04 years. In 10 out of the 29 districts, female LEB exceeds 70 years. Male LEB exceeds 70 only in Chennai and Kanniyakumari.

It is significant that unlike the biological norm in other countries, female life expectancies in India were by and large below male life expectancy. The 1991–6 average, however, was 60.6 for males and 61.7 for females, reversing the male–female gap. The Tamil Nadu figures over the same period start lower than the all-India figures with 41.09 years for males and 39.24 for females during 1951–61, but increase to more than the all-India averages by 1991–6 with figures of 62.85 for males and 63.05 for females.

Total Fertility Rate

The Total Fertility Rate (TFR) for Tamil Nadu has shown a sharp decline from 3.9 in 1971 to 2.0 in 1997 as per the SRS. The corresponding figures for India are 5.2 and 3.3, and for Kerala 4.1 and 1.8. The VES for reference year 1997 confirms the estimate of 2.0 for the State's TFR (Figure 4.2). District-level estimates of TFR show a clustering

FIG. 4.2—TOTAL FERTILITY RATE



Source: Sample Registration System.

of most districts around the State average of 2.05. Only Dharmapuri, Salem and Perambalur report a TFR above 2.4, and of these, the first two are high female IMR districts where female infanticide (FI) is widely prevalent.

It is also worth mentioning that the age-specific fertility rate (ASFR) for the young adult age group of 15–19 years has declined in Tamil Nadu from 70.7 in 1971 to 30.7 in 1997. The all-India figure for 1997 is 53.7. Punjab, Gujarat and Kerala have lower ASFR (15–19) (indicating higher age at marriage and first conception), the figures being 16.4, 25.4 and 26.0, respectively.

There are a number of reasons for the rapid decline in TFR in Tamil Nadu: the strong political commitment of successive governments, the progressive influence of socio-cultural movements such as that initiated by Periyar, an improved transport and communication network promoting diffusion of the small family norm and a sustained and intensive information, education and communication (IEC) effort. Rising aspirations of the people *vis-a-vis* living standards in the face of modest economic growth, better health, opportunities for women to engage in occupations outside the home, as well as improved levels of literacy have also contributed to this process. It is a matter of concern, however, that IMR remains high while TFR and CBR have declined dramatically (see section on IMR).

Family Welfare Measures

The remarkable decline in the State's TFR and CBR, as mentioned above, have been due to a number of reasons. Birth control measures, mostly sterilization, is one reason that should not be discounted. The nature of sterilization has, however, changed. While laproscopic sterilizations were preferred during the mid-1980s, owing to some failures in this procedure, conventional tubectomy is now preferred among women. The average age of acceptance, which was 30 years in 1982–3, has come down to 26.4 years in 1998–9. Conventional contraceptives (CC) and oral pills have played, if at all, only a marginal role. Nonetheless, with the AIDS epidemic, CC usage has gone up.

A break-up of sterilization indicates that 56.3 per cent of the sterilization acceptors in 1995–6 had two or less children. Of these acceptors with two or less children 46.1 per cent had at least one male child. Only 10.2 per cent of these acceptors had no male children. Strong preference for a son still exists in many districts of Tamil Nadu. The least preference for sons is exhibited in Erode and Coimbatore districts where 20 per cent and 18 per cent of the acceptors (with two or less children) have only female children. The strongest son preference is exhibited in the districts of Villupuram, Tiruvannamalai and Dharmapuri where the corresponding percentages are 3.7, 4.1, and 4.7, respectively.

Sustaining and consolidating Tamil Nadu's gains in population stabilization thus requires that attention be paid to the gender dimension of the population policy. Sterilization itself raises many ethical questions with regard to women's ability to exercise their voice. There needs to be much greater involvement of the men in contraception, both temporary and permanent. Currently the number of vasectomies performed per year in the State is negligible and the use of condoms by males is confined largely to urban areas. The Reproductive and Child Health Project (RCHP) rapid survey in 12 districts of Tamil Nadu (1998) reports that only 15 per cent of males in the sample were using modern methods of contraception (see Box 4.1). According to NFHS-2, only 5 per cent of the men report using or having ever used condoms and a smaller 0.8 per cent report having undergone sterilization.

An estimate of induced abortions in Tamil Nadu puts the figure at 447,000 for 1991 (assuming 25 abortions per 73 live births, of which 60 per cent are induced). During the early 1990s, the reported number of medical termination(s) of pregnancy (MTPs) performed in Tamil Nadu was around 45,000 per year. Allowing for some under-reporting of MTPs and overestimation of induced abortions, the data still suggest that a sizeable proportion of abortions go unrecorded and that safe abortion services remain inaccessible to a sizeable proportion of those who need them. Rural women are particularly vulnerable.

Box 4.1—Reproductive and Child Health (RCH) Project

The RCH project is a nationally co-ordinated project being implemented with loan assistance from the World Bank. In Tamil Nadu, the project has two components:

- A sub-project, covering Madurai and Theni districts, of five years duration commencing 1997–8, with an overall outlay of Rs 231.4 million.
- A State level component—the State Implementation Plan (SIP)—to cater to the infrastructure needs of all other districts, with an outlay of Rs 183 million, sanction for which is awaited.

The general objectives of the project includes empowering the community to demand better health services and improving substantially the performance of the health care delivery system. The Madurai–Theni sub-project seeks, in particular, to improve the health status of women, adolescents and children, and the quality of service provision. Specific goals include reduction of IMR and MMR as well as maternal and infant morbidity, improved MTP services and reduction in pregnancy wastage and elimination of female infanticide. The SIP focuses on promotion of institutional deliveries and effective provision of emergency and essential obstetric care at block PHCs through a paramedic oriented model. It will also supply drug kits to village health nurses (VHNs), and medicines and hospital equipment to PHCs and also undertake minor civil works in PHCs/HSCs/FRUs/district hospitals. Training in RCHP, awareness generation and mobility and communication skills training to female field health functionaries are also part of the project mandate. The project will also involve IEC efforts, utilizing in particular the *Kalaipayanam* (itinerant street theatre) strategy to mobilize and motivate the community around the issue of reproductive health.

Maternal Mortality Ratio

Estimates for the year 1992–3 put Tamil Nadu's maternal mortality ratio (MMR) at 376. More recent evidence suggests that the MMR in Tamil Nadu is substantially lower. Data from the VES of 1995, 1996, 1997 and 1998, involving a sample population of 4.5 million (confined to non-municipal areas) in 1995[1] and 9 million each in the other three years, suggest a fairly stable MMR for the State in the range of 150 to 200.

An analysis of the causes of maternal death in Tamil Nadu brings out the fact that a large number of these are preventable. **While there are well identified direct and indirect obstetric causes for maternal death, socio-economic factors also play a crucial role—for instance, patriarchal attitudes, the enormous burden of hard toil and poor nutrition, the lacunae in transport and communication facilities, delay in accessing proper health facilities and the lack of and/or poor quality of essential and emergency obstetric services.** Among the medical causes, haemorrhage, accounted for nearly 40 per cent of all maternal deaths in Tamil Nadu in 1996. Possible errors in the estimate notwithstanding, this highlights the importance of availability of blood in saving maternal lives. Other major causes include pregnancy-induced hypertension and eclampsia, rupturing of the uterus on account of obstructed labour, puerperal sepsis and septicemia. Important indirect obstetric causes include anaemia, heart disease, jaundice and malaria.

As 40 per cent of all maternal deaths are due to haemorrhaging, a key to the reduction of MMR lies in reducing haemorrhaging. Availability of adequate quantities of blood in time, therefore, is crucial. In the context of increasing concern over possible transmission of the HIV/AIDS virus through blood transfusion, the Government of India has brought into force strict regulations concerning licencing of blood banks and procedures for blood transfusion.

[1]'non-municipal' areas include all rural areas and town panchayats, but exclude municipalities and municipal corporations.

Anaemia, which is estimated to account for over 6 per cent of all maternal deaths directly, and which contributes indirectly in equal or greater measure, has to be tackled on a priority basis. The basic cause for anaemia is poor nutrition of the mother. Both poverty and intra-household gender inequality in the distribution of food play a role in this. Also relevant is the enormous burden of household and productive work borne by the mother in poor rural households.

Data from NFHS-2, conducted in Tamil Nadu in 1999, suggest that 56.5 per cent of women in the State are anaemic and around 20 per cent moderately or severely so. Among pregnant and lactating women, anaemia is prevalent in 54 per cent of the cases, if 11 grams per decilitre is taken as the norm. In the urban areas of Chennai with 12 decilitres as the norm, the percentage was higher at 81 per cent. These figures, though comparatively lower when compared to other States, are still high enough to warrant corrective action. Women need to be healthier, nutritionally speaking, to improve their own physical conditions. This is also required in the interest of the next generation.

The prevalence of low birth weight (LBW) is a cause for continuing concern. The aim should be to **eliminate cases of low birth weight since it is costly to the sufferers and to society**. For this, one may have to look at not only maternal malnutrition, but also to step back to focus on the growth patterns of adolescent girls. Instead of waiting for an undernourished and anaemic woman to get pregnant and then intervene, growth promotion among adolescent girls during their rapid growth spurt is likely to lead to healthier mothers in the future. **Adolescents of small weight and height, combined with nutritional deficiencies such as anaemia, is a very important area of concern.**

Institutional Deliveries

The State has made significant progress in increasing the proportion of institutional deliveries. According to SRS data, Tamil Nadu, which was behind Kerala and Maharashtra in terms of percentage of institutional deliveries in 1971, stood way ahead of all States except Kerala in 1996. Thus, while 97 per cent of all deliveries in Kerala in 1996 were institutional deliveries, in Tamil Nadu, institutional deliveries comprised 65 per cent of the total deliveries. In 1998–9, the share of institutional deliveries to total deliveries in Tamil Nadu was around 80 per cent.

Variations across districts are, however, seen. At one end, is the wholly urban district of Chennai with almost 100 per cent institutional deliveries, and at the other, is Tiruvannamalai with only 51 per cent institutional deliveries. Though a substantial number of primary health centres (PHCs) and health sub-centres (HSCs) are equipped to conduct normal deliveries, only about 8 to 10 per cent of all deliveries in Tamil Nadu take place in the 10,000 plus HSCs and PHCs in the State. This works out to less than one delivery per PHC or HSC per month.

As for the share of 'safe' deliveries, defined as all institutional deliveries plus all domiciliary deliveries attended to by trained personnel, the SRS figure for the State as a whole rose significantly from 39.3 per cent in 1971 to 85.6 per cent in 1996. The proportion of 'safe' deliveries to the total shows much less variation across districts. As Box 4.2 illustrates, the TNHCP Phase-III has made significant strides in empowering the medical staff in the public health sector so as to improve the likelihood of 'safe' deliveries.

Box 4.2—Empowering Female Field Functionaries

The DANIDA TNHCP Phase-III focuses on the districts of Dharmapuri, Thanjavur, Tiruvarur, Nagapattinam, Salem, Namakkal, Cuddalore and Villupuram besides dealing with training and IEC in the public health sector throughout the State. As part of its commitment to improving the delivery of the public primary health care

services, and its focus on women's empowerment, the project has taken the initiative to provide all female field health functionaries—VHNs, sector health nurses (SHNs) and community health nurses (CHNs) not only loans for purchase of mopeds, but also training in driving the vehicles. The project has allocated a sum of Rs 2.93 million towards mobility training for female field health functionaries to cover around 4000 nurses in all the project districts put together. Mobility training has been completed in all the project districts.

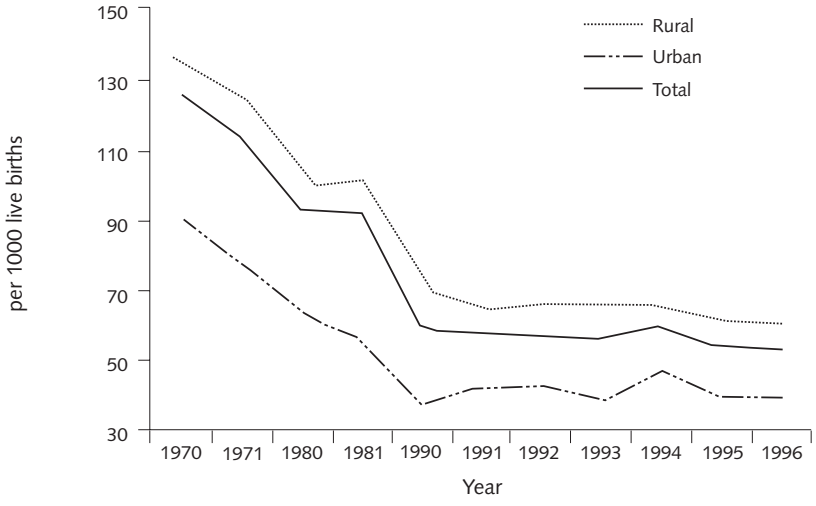
The mobility training was provided in residential camps at which the functionaries were also trained in communication skills and in yoga. These camps served to empower the female field health functionaries and enhance their self-image and confidence. It may be noted that these were precisely the outcomes of the mobility training initiative first implemented in the project district of Dharmapuri in the first two months of 1999. An independent evaluation of the mobility training initiative in Dharmapuri has noted that the use of mopeds by female field health functionaries has risen sharply from a pre-training level of 23 per cent to a post training level of 98 per cent. This has resulted in considerably enhanced coverage of outreach services. The empowerment of the functionaries has led, along with other factors, to improved public primary health care service delivery.

Infant Mortality Rate

Improvements in the above mentioned indicators such as MMR, institutional deliveries etc. have a positive impact on improving the Infant Mortality Rate (IMR) which is the indicator actually used in the HDI index. The IMR is a sensitive indicator, not just of the state of health, nutrition and caring accessible to infants below one year of age, but also of the general well-being of society. While the IMR for Tamil Nadu and India were close in 1970, at 125 and 129 respectively, Tamil Nadu's IMR has declined much more rapidly than India's. Tamil Nadu's IMR declined to less than 100 by 1980, while India's declined only to 114. By the end of the 1980s, the IMR had reached 68 for Tamil Nadu (91 for India) and by 2000 it was estimated at 51 (68 for India). However, given the relatively advanced position of the State, socio-economically speaking, combined with a massive network of pre-schooler health and nutrition centres, Tamil Nadu could aim for a sharper reduction.

An examination of the rural–urban differentials points to one area for improvement. As seen in Figure 4.3,

FIG. 4.3—IMR FOR TAMIL NADU BY PLACE OF RESIDENCE



Source: Sample Registration System.

rural IMRs have been consistently higher than urban IMRs over the 28 year period from 1970 to 1997, indicating a much higher risk of infant death in rural areas.

A disaggregation of the State's IMR into its early neonatal, late neonatal and post-neonatal components is also instructive. SRS data for the period 1970–97 show that early neonatal deaths as a share of total infant deaths, increased from 26.3 per cent in 1970 to around 60 per cent by the mid-1990s. In comparison, when Kerala's IMR in mid-1970s was about the same as Tamil Nadu's at present, the share of early neonatal deaths in total infant deaths was only around 40 per cent. Data from the VES 1999 for reference year 1998 also confirm the high share of early neonatal deaths in total infant deaths in Tamil Nadu. In the case of high female IMR districts such as Dharmapuri and Salem, the share of early neonatal deaths to total infant deaths for female infants is much higher.

Box 4.3—DANIDA Tamil Nadu Area Health Care Project

The Tamil Nadu Area Health Care Project (TNHCP), funded by the Danish International Development Agency (DANIDA), has been in existence since 1981. During its first two phases from 1981 to 1996, the project covered the erstwhile South Arcot and Salem districts (now, Villupuram and Cuddalore, and Salem and Namakkal, respectively). In its third phase, the project districts are Dharmapuri, Thanjavur, Tiruvarur and Nagapattinam. The designated project period is from December 1996 to December 2001, and the approved outlay Rs 591 million. The overall project objective is to improve the health and family welfare status of the rural population, especially of the weaker sections, with a focus on women and children. The project seeks to empower women and mainstream gender concerns. To achieve its objectives, the project has sought to strengthen the physical infrastructure of the health sector, the knowledge and skills of health service providers, the management of health services and the medical supply system. It also seeks to improve awareness of both the community and the health service providers on issues pertaining to health and health service delivery.

Finally, it needs to be noted that perinatal mortality in the State has not come down significantly. This is because of persistently high early neonatal mortality rates, accompanied by a relatively modest decline in still-birth rates (SBRs). Thus, the perinatal mortality rate (PNMR) only declined from 55.2 in 1971 to 43.4 in 1997 as per the SRS. The corresponding figures for Kerala and India in 1997 were 17.5 and 43.2. The SBR for the State declined, according to SRS data, from 22.1 in 1971 (India: 17.5) to 11.7 in 1997 (India: 8.7, Kerala: 11.3).

The major medical causes of infant deaths, as per the VES 1998, were birth asphyxia (17.7 per cent), low birth weight (14.6 per cent), acute respiratory infection (13 per cent) and prematurity (7.1 per cent). Most of these deaths typically take place in the neonatal, and especially early neonatal phase. The two key requirements for a significant reduction in IMR are antenatal care and high quality care of new borns. The former, by addressing issues of maternal nutrition and identification of high risk pregnancies, will help reduce infant death due to prematurity and low birth weight. The latter will help reduce infant death due to birth asphyxia and acute respiratory infection.

Where Tamil Nadu fares well is immunization. Tamil Nadu has the best record for immunization among the major Indian States. Practically, all the 1.1 million infants born every year are covered. 1.2 million pregnant women are also immunized against tetanus every year. The quality of the immunization programme has improved considerably over the past 15 years with cold chain maintenance and potency of vaccine being ensured, leading to a substantial reduction in vaccine preventable deaths.

Female Infanticide

A significant proportion of female infant deaths in the neonatal period are due to female infanticide (FI). In the last three or four decades, there has been a rapid decline in the juvenile sex ratio (defined as the sex ratio in the age group 0–6) in some districts of the State. These are also the districts that show considerable female IMR, for example Salem. Female infanticide deaths account for 7 per cent of all infant deaths in the State, 14 per cent of all female infant deaths, and between one-third and two-thirds of all female infant deaths in Salem and Dharmapuri. Data indicate that the practice occurs in about one-third of the State's 385 blocks, spread over the districts of Dharmapuri, Salem, Namakkal, Theni, Madurai, Karur, Dindigul, Erode and Vellore, with stray incidence in some other districts.

The government has sought to address this issue through a combination of legal action and community mobilization and motivation. The DANIDA TNHCP initiative of *kalaipayanams* in Dharmapuri is a good example which has been followed up by involving elected local body leaders in a sustained campaign against FI (see Box 4.3).

Female Foeticide

A closely related issue is that of female foeticide. With the emergence of technology that enables the identification of the sex of the foetus, the practice of female foeticide emerged in many parts of the country, especially Maharashtra, Punjab, Haryana and Delhi more than a decade ago. In recent years, it has also spread to Tamil Nadu. It is reported that female foeticide is being practiced in some districts in the name of 'genetic counseling'. Available data on sex ratios at birth also indicate that the practice has acquired significant dimensions in some parts of the State.

To deal with the issue, the Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Act 1994, a national act was passed in 1994 forbidding sex determination tests. It came into force on 1 January 1996. **Urgent action is needed to ensure both registration as well as strict compliance with the Act, and to mobilize and motivate the community against the practice of female foeticide.**

Both female foeticide and infanticide stem from and reflect the patriarchal nature of Tamil Nadu society and its strong son preference, with women consequently being given a low status. Thus, any strategy to tackle female foeticide and infanticide must also address the larger issue of weakening patriarchy and empowering women. It must take the nature of a social mobilization campaign, involving community participation.

Nutritional Status and its Relationship to Health

In many developing countries, including India, nutrient absorption and utilization by the body is less efficiently carried out because of the presence of frequent infectious episodes like diarrhoea and upper and lower respiratory infections. Infection causes nutrition status to deteriorate; at the same time undernutrition decreases resistance to infection—a synergistic relationship. Thus, the term **nutritional status** is used to describe an outcome of several biomedical processes, interacting over time.

Even when mortality is controlled, the nutritional status may not improve. Education and communication regarding the importance of nutrition can go a long way in bringing about long-term changes in attitudes and recognition by parents of the importance of nutrition for their children.

Nutrition Levels and Trends

Anthropometric measurements, like weight and height, are always an outcome of both heredity and the environment in which children grow. **Differences between socio-economic classes result in greater differences between the growth of children than differences due to ethnic factors across countries**. Thus, the more deprived the

population (in terms of access to nutrients, infection loads, hygiene and even care and attention) the lower are the weight and height outcomes likely to be.

A look at comparative international data shows that countries high on the human development scale show a lower percentage of underweight children under 5 years of age as compared with medium and low human development countries. During the period 1990–7, on an average, 30 per cent of the children under five years of age in the world as a whole were underweight—12 per cent in high human development countries, 19 per cent in medium human development countries (excluding China the figure increases to 23 per cent), and as high as 45 per cent in low human development countries (excluding India the figure decreases to 37 per cent). The figure for India was 53 per cent, with Pakistan (38 per cent) and Nepal (47 per cent) reporting lower percentages. **There is also a direct correlation between levels of economic development and percentage of underweight children. Among all developing countries, the figure for the under five year old children stood at 30 per cent whereas for the least developed countries it was 39 per cent.**

The National Nutrition Monitoring Bureau data show high percentages of children in India below five as underweight, stunted and wasted.[2] Child development programme data for rural children from the Tamil Nadu Integrated Nutrition Programme (TINP) show a high percentage of underweight[3] children among participants during the 1980s and 1990s. It appears that half or more of the children assessed are far below the international standards adopted for assessment. The exact percentages vary depending on the classification systems and norms used. Hence, programme data are not directly comparable with external data.

In Tamil Nadu, around 46.6 per cent of children below five years are underweight (Table 4.4).[4] The percentages are higher in rural areas (52.1 per cent) as compared to urban areas (37.3 per cent) as per 1992–3 data. While this is better than the all-India situation of 53 per cent, States like Kerala, Haryana and even Rajasthan are doing better than Tamil Nadu.

TABLE 4.4—PERCENTAGE PREVALENCE OF MALNUTRITION AMONG CHILDREN AGED 1–4 YEARS IN SELECTED STATES

(percentage)

State	*Underweight (Weight-for-age below 2SD of the Median)*			*Stunted (Height-for-age below 2SD of the Median)*			*Wasted (Weight-for-Height below 2SD of the median)*		
	Rural	*Urban*	*Total*	*Rural*	*Urban*	*Total*	*Rural*	*Urban*	*Total*
AndhraPradesh	52.1	40.00	49.10	NA	NA	NA	NA	NA	NA
Gujarat	45.8	40.50	44.10	44.60	41.60	43.60	20.30	16.10	18.90
Karnataka	NA	NA	54.30	NA	NA	47.60	NA	NA	17.40
Kerala	30.6	22.90	28.50	29.60	21.50	27.40	11.50	12.00	11.60
Maharashtra	57.5	45.50	52.60	50.80	39.10	46.00	21.50	18.30	20.20
Tamil Nadu	52.1	37.30	46.60	NA	NA	NA	NA	NA	NA

Note: NA-not available.
Source: International Institution for Population Sciences, 1995, NFHS, 1992–3.

Persistence of Undernutrition

Undernutrition is a persisting phenomenon in Tamil Nadu and in India as a whole. Even the most favourable data show that on the basis of weight-for-age around half the children under five years continue to be underweight, showing the widespread prevalence of current malnutrition. This in itself is a cause for serious concern from

[2]SD classification.
[3]IAP classification based on the Harvard standards of weight-for-age.
[4]Weight-for-age below 2SD of median in 1992–3.

the point of view of human development. If this persists, batch after batch of children will display stunted growth (low height-for-age), ending up with lower than 'normal' adult heights.

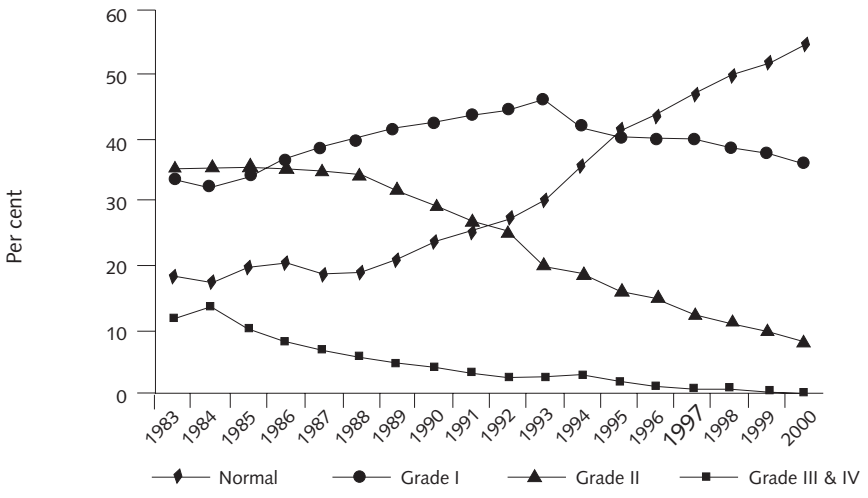
When data are analysed by caste, results show that children from SC households tend to be the worst-off among all communities, both for the 0–36 months age group as well as for the 36–60 months group. It is clear that the socio-economic status of the household has a direct effect on nutritional status. The education of both the father and the mother seem to have an effect on the child's nutritional status as well. The effects are a little more pronounced for the 0–36 months age group as compared to the 36–60 years age group.

The district-wise break-up of programme data in Tamil Nadu once again confirms the importance of the mother's educational status. Kanniyakumari, with the highest female literacy in Tamil Nadu is also the district that ranks the highest in respect of normal and grade I children. It is also the district with the lowest percentage of children in grades III and IV.

Weight-for-Age

Depending upon the classification system used (Gomez, standard deviation (SD) or the Indian Academy of Paediatrics (IAP)[5] and the reference population weight standards adopted (the US-NCHS or Harvard) for defining the various degrees of undernutrition, the actual percentages of children classified as 'normal', 'mild undernutrition', 'moderate undernutrition' and 'severe undernutrition' vary. Although direct comparisons of results across different studies are, therefore, not possible; changes over time can be assessed. Whichever classification is used, the conclusion is that around half or more of children in the 1–5 years age group in India are underweight. Correspondingly, the share of children severely malnourished more than halved from 15 to 6.2 per cent. The rest of the children were mildly or moderately undernourished. The same trend is observed

FIG. 4.4—TREND IN NUTRITIONAL STATUS OF RURAL TAMIL NADU CHILDREN (0–36 MONTHS)



[5]Gomez classification (4 grades): >=90 per cent of reference weight-for-age: Normal
75–90 per cent of reference weight-for-age: Grade I or mild malnutrition;
60–75 per cent of reference weight-for-age: Grade II or moderate malnutrition;
<60 per cent of reference weight-for-age: Grade III or severe malnutrition.
Indian Academy of Paediatrics (5 grades): >80 per cent of reference weight-for-age: Normal
71–80 per cent of reference weight-for-age: Grade I malnutrition
61–70 per cent of reference weight-for-age: Grade II malnutrition
51–60 per cent of reference weight-for-age: Grade III malnutrition
<=50 per cent of reference weight-for-age: Grade IV malnutrition

in the Tamil Nadu figures, with the percentages of normal and mild malnutrition higher than the all-India figures and the percentages of severely malnourished lower.

As per 17 years of programme data (TINP), the percentage of children in the nutritionally most vulnerable 6–36 months age group with normal weight-for-age[6] increased steadily from just 18.6 per cent in 1983 to over 52 per cent in 1999. Simultaneously, the percentage of children showing moderate malnutrition (grade II) as well as severe malnutrition (grades III and IV) showed a systematic decline, the former from over 35.4 per cent to 9.8 per cent and the latter from 12.3 per cent to just 0.5 per cent. The percentage of mildly malnourished children (grade I) was around 33 per cent—43 per cent with a mild upward trend. This indicated that children in grades III and IV climbed up to grades II, I and normal, and those in grade II climbed to I and normal (Figure 4.4).

Both NIN as well as internal programme sources confirm a common trend: an increase in the normal plus mildly malnourished categories and a decline in the severely malnourished, regardless of classification systems and standards.

As part of the endline evaluation of TINP done by NIN, male–female comparisons are made for 1997. Here it is concluded that girls do no worse than boys so far as weight-for-age is concerned. In fact, the female percentages are slightly better than those for males. This is true, separately for the 0–36 months as well as for the 36–60 months age groups. The normal and grade I percentages for females are higher than those for males while simultaneously the grades III and IV percentages are lower, both under the IAP and Gomez classifications. At the national level also, recent data for 1–5 year olds pooled from nine States (Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Uttar Pradesh, West Bengal and Tamil Nadu) for 1996–7 also show that male and female undernutrition are comparable (NIN, 1997). No bias against females is observed in weight-for-age.

A ranking of districts by nutritional grades has been attempted. Ranks were determined on the basis of monitoring data on participating children in the age group 6–36 months in 19 districts[7] from 1996 to 1999 where TINP (now World Bank (WB)-ICDS-III) is in operation. Of the top five districts overall in the normal plus grade I category (Kanniyakumari, Coimbatore, Vellore, Thoothukudi and Erode), as many as four, are also at the top in respect of low percentages in grades III plus IV (Kanniyakumari, Erode, Coimbatore, Dindigul and Vellore), showing remarkable congruence of the top ranks. The congruence among the bottom ranks also exists but it is less remarkable (Table 4.5).

TABLE 4.5—NUTRITIONAL GRADES IN DISTRICTS (UPPER AND LOWER CATEGORIES)

Top 5 Districts		*Bottom 5 districts*	
Rank	*District*	*District*	*Rank*
Normal + Grade I			
1	Kanniyakumari	Cuddalore	19
2	Coimbatore	Nagapattinam	18
3	Vellore	Villupuram	17
4	Thoothukudi	Ramanathapuram	16
5	Erode	Tiruchirappalli	15

(Contd...)

Standard Deviation Classification: The number of SDs away from the median weight-for-age class captures the extent of the gap from normal. Less than or equal to 3SD of weight-for-age or height-for-age indicates severe undernutrition or stunting, respectively. A gap of 3SD–2SD below median is relatively less severe, indicating moderate malnutrition; 2SD–1SD is mild; and 1SD to median, on either side, is taken as normal.

[6]IAP classification based on Harvard standards.

[7]Comparable data are not available for other districts and hence, regretfully, those districts had to be excluded from the comparison.

(Table 4.5 Contd.)

Top 5 Districts		*Bottom 5 districts*	
Rank	*District*	*District*	*Rank*
Grades III + IV			
1	Kanniyakumari	Virudhunagar	19
2	Erode	Nagapattinam	18
3	Coimbatore	Ramanathapuram	17
4	Dindigul	Tirunelveli	16
5	Vellore	Tiruvannamalai	15

Source: TINP Programme Data.

Kanniyakumari had the overall first rank for 1996–9. It is of interest that female literacy is the highest in this district. This brings into focus the importance of non-nutrition factors including overall human development and women's empowerment as part of improving the nutrition status of the population. The overall worst district was Cuddalore.

By and large, the ranking of districts did not change much over the period. Significant changes in ranks by more than 5 places in the normal plus grade I category occurred in the case of Tiruvannamalai (a decline from rank 7 to 14), Virudhunagar (decrease from rank 9 to 16), Sivagangai (an improvement from 13 to 8), Tirunelveli (a decline from 6 to 12) and Salem (an improvement from 12 to 6). In the grades III plus IV category, significant changes in ranks by more than 5 places were seen in Tirunelveli (a decline from 9 to 18), Salem (an improvement from 14 to 2), Dharmapuri (an improvement from 14 to 2) and Tiruchirapalli (an improvement from 11 to 6).

Height-for-Age

Lower than normal heights for given ages captures the extent of 'stunting'—a comparatively long-term indicator as compared with weight-for-age, capturing chronic undernutrition. The prevalence of stunting (below median–2 SD) in the States (pooled) decreased from 78.6 per cent to 57.7 per cent during 1975–9 to 1996–7. Severe stunting (below median–3 SD) decreased from 53 per cent to 28.8 per cent during the same period. Simultaneously, there was an increase in the percentage normal (median–1 SD to median plus above median) from a low 6.8 in 1975–9 to 18.1 per cent. The reduction was mainly in the prevalence of severe stunting, the moderate remaining largely unchanged (NIN, 1999) (Table 4.5).

Weight-for-height

This indicator captures 'wasting' (Table 4.5). It is age-independent, which is a merit when addressing populations where age estimation may be a problem. It also has the advantage of combining weight and height data. Nonetheless, the weight-for-height indicator has to be used cautiously. It cannot provide useful information when both weights and heights are low, as is most often the case in India, as that would lead to conclusions of normality when in fact there may be very severe undernutrition. Similarly, it is not very useful to capture the trend when both weights and heights move nearly proportionately in the same direction, as was the case in the period 1975–9 to 1996–7. The ratio did not change much during the period since both weights and heights recorded concomitant changes.

The NIN data showed that over the period 1975–9 to 1996–7, mean heights and weights for different ages and sexes did not increase significantly in Tamil Nadu. The same was the case for Orissa, Gujarat (except for school aged children and adolescents), Andhra Pradesh, Maharashtra and Karnataka. In respect of Kerala alone, there was

an overall increase in heights (1–2 cm) and weights (2–3 kg) among males and females for all age groups. In Gujarat, both boys and girls of school going age and adolescents showed an increase. However, in all States, the values were significantly lower than the NCHS norms (NIN, 1999).

Low Birth Weights

Low birth weight (LBW) is defined here as weight at birth less than 2500 grams. Birth weights are significant in as much as they set the pattern for future growth of a person. They are also positively associated with infant mortality, and prevalence of diseases like diarrhoea. Data from various States in India in 1990 show that Kerala figures were the lowest at 15.3 per cent (Thiruvananthapuram) and Gujarat the highest at 46.4 per cent (Vadodara) in terms of LBWs. For Tamil Nadu, while the average birth weight for the State stood at 2.63 in 1995, it increased to 2.75 in 1999 suggesting that there may have been a decline in the percentage of LBW cases (15.34 per cent in 1999) over time.

The TINP programme data on LBW cases, however, shows a far lower percentage of incidence of low weight at birth, ranging between a low of 3.6 per cent in phase I districts to a high of just 5.3 per cent in phase IV districts, averaging 4.5 per cent overall (pooled) among the weights recorded. This does not seem reconcillable with other data and may in fact be unrealistic. Earlier baseline and mid-term evaluations of TINP have yielded LBW of 22 and 23 per cent, respectively (NIN, ICMR, 1998).

Clinical Signs of Malnutrition

Some clinical signs of malnutrition among pre-school children such as oedema, marasmus and two or more signs of protein energy malnutrition (PEM) are less prevalent in Tamil Nadu as compared with pooled data, including six other States, during the period 1975–9 to 1996–7. However, angular stomatitis and bitot's spots seem to be prevalent in Tamil Nadu (Table 4.6). In respect of anaemia, nearly 30 per cent of pre-school children in Tamil Nadu are anaemic.[8] This is, nonetheless, better than other States such as Gujarat with 72 per cent, Maharashtra 67 per cent, Uttar Pradesh 63 per cent and West Bengal 95 per cent.

TABLE 4.6—PREVALENCE OF NUTRITIONAL DEFICIENCY SIGNS AMONG PRE-SCHOOL CHILDREN

(*percentage*)

Nutritional Deficiency Signs	*Year*	*Kerala*	*Tamil Nadu*	*Karnataka*	*Andhra Pradesh*	*Maharashtra*	*Gujarat*
NAD	1975–79	91.7	84.4	71.9	79.8	86.0	79.7
	1996–97	98.6	82.1	94.5	92	88.2	99.2
Oedema	1975–79			0.4	0.9	0.5	0
	1996–97	0	0	0.1	0	0.1	0
Marasmus	1975–79	0.2	0.6	0.9	2.0	0.8	3.8
	1996–97	0	0	0.5	0.2	0.2	0
Two or more signs of PEM	1975–79	0.2	0.6	2.3	3.0	0.6	0.2
	1996–97	0	0	0.5	1.1	1.8	0.1
Bitot's spots	1975–79	0.1	2.9	11.8	3.1	0.4	0.9
	1996–97	0.5	0.7	0.5	0.8	3.0	0
Angular Stomatitis	1975–79	1.6	5.0	11.8	7.9	1.0	1.5
	1996–97	0	10.6	0.5	3.4	1.2	0

Note: NAD—Clinically Normal Children.
Source: National Institute of Nutrition, Hyderabad, 1999.

[8]Haemoglobin less than 11 grams per decilitre.

The trend over the period shows that, overall, while the percentage of clinically normal children (NAD) increased from 80.7 per cent in 1975–9 to 93 per cent in 1996–7, in respect of Tamil Nadu it was the reverse. The NAD prevalence actually decreased in Tamil Nadu from 84.4 per cent to 82 per cent. In fact it was the lowest in Tamil Nadu by 1996–7. The trend for Tamil Nadu in respect of bitot's spots, marasmus and two or more signs of PEM was downward, but a jump has been observed in respect of angular stomatitis.

Independent Nutrition Surveillance

At present, weight-for-age and other detailed health and nutrition related monitoring data are available only for programme participants. These are from the relatively worse-off sections of society and do not reflect the overall prevailing nutrition condition. About two-thirds of the child population remains outside this system. Moreover, programme data are always open to questions of reliability, as they are generated by protagonists. It is suggested that an **independent nutrition surveillance system** be put in place on the basis of a suitable sample design and coverage so that the following comparisons can be made. This surveillance system can collect information with regard to location (rural vs urban), district, season (to pinpoint time of the year), sex, economic status, birth order (earlier born vs later born, educational status of parents and time trends.

Further, a suitable panel for monitoring a cohort from birth to adulthood may be set up. This will aid policy as well as function as a communication tool. Currently, the National Nutrition Monitoring Bureau (NNMB) is an agency monitoring nutrition status at the national and State levels. However, for States to be able to take targeted corrective action, data below State level are also required. The technical services of NNMB could be used to set up such a system which might even fit in with the national monitoring on nutrition. Given that Tamil Nadu already has a massive structure for nutrition intervention, the additional costs (financial and organizational) of surveillance would not be prohibitive.

State Provisioning of Direct Nutrition Services

Even in the most optimistic scenario, improvements in health and nutrition take place over a generation. Better nutrition has generally followed economic growth, not preceded it. Among the low income countries, and especially among those with considerable inequalities, the route of waiting for growth to address the problem of malnutrition has been found to be unacceptably long. The consequences of such delays are costly in terms of not only productivity, but also the direct well-being of the population, which is ultimately the objective of all development efforts. Direct interventions could shorten the time taken for improved nutritional status.

Moving From Hunger to Nutrition

Providing food is not equivalent to providing nutrition. Nutrition is the outcome of interactions between a variety of factors and processes, including health, care, environmental hygiene, etc. Providing food for children outside the home is not a new idea in Tamil Nadu. In some form or another this has been in operation since 1956. Starting with schemes meant primarily to combat hunger, nutrition consciousness has been in-built in strategies starting in the early 1980s.

While feeding programmess may have been started to combat hunger, over the years, the government in Tamil Nadu has made serious attempts to combine provision of food under the Noon Meal Programme (NMP) with other services such as health care, immunization, growth monitoring, pre and post-natal care for women, communication and nutrition education. This has been done through programmes like the ICDS and the TINP, which have been integrated with the NMP (see Box 4.4) infrastructure for pre-schoolers. The State's nutrition effort, however, does have a strong 'food bias'. Resource constraints have not reduced the coverage or calorific content over the decades.

Box 4.4—The Noon Meal Programme

Starting on 1 July 1982, Tamil Nadu saw the beginning of one of the largest phased expansions of mid-day feeding through the Noon Meal Programme (NMP). This is a major hunger programme. For the first time, the State focused on the difficulties of reaching the pre-school age group (2+ to 5 years). Operationally, this is the hardest age group to cover, but in terms of nutritional efficiency, perhaps better than older children so that problems may be tackled before any irreversible damage sets in. Successive governments have continued to commit very significant portions of the State's budget to it. This has resulted in one of the most expensive network of centres being established and staffed. The programme has a clear 'food bias'. From 1997 it has also caught the imagination of the Government of India, which is now starting to support similar efforts in all States.

Such a large scale programme has not been attempted before. The noon meal feeds a population of over 8.3 million, nearly every day by serving a hot rice meal cooked on the spot. The sheer logistics by itself can be mind-boggling. Yet, these schemes have grown and stabilized over the last 20 years. Starting from pre-schoolers and school children, today certain adult categories of pregnant women and pensioners are also covered. The scheme is now a combination of a hunger–health–nutrition effort with social security for the old, the destitute and widows.

School children eat their noon meal at school. The other categories that is pre-schoolers, pensioners and pregnant and lactating women eat at the pre-school centres. Taking all pre-school as well as school centres together, there are more than 71,100 NMP centres feeding well over 7.7 million children and 0.54 million adults. Under the programme, a hot lunch of rice cooked with dhal, soyabean flour, vegetables, oil and condiments is provided to the children below six. Food is supplied for all days of the year for pre-schoolers

Nearly all the pre-school NMP centres have now been merged with those of two other child development programmes—the TINP and the ICDS. In all, this accounted for 30,701 pre-school noon meal centres, 1,398,064 children and 535,502 adults. The 'pure' NMP centres (non-TINP, non-ICDS) operate in a few urban pockets (720 centres with around 29,309 children). While full integration has taken place at the village level, with no overlap or wastage, this has not taken place at the district and State levels. A district can have both standard ICDS and WB-ICDS-III (former TINP) offices and staff, which function independently. 'If these projects can be administered by one single set of functionaries, enough manpower can be saved for innovations in community capacity building and training'. (Shantha, 1997).

Though there was an income criteria, in practice any willing child in the eligible age group is permitted to participate. In actual fact it is the relatively poorer sections of the population who participate. One estimate indicates that at present around 33 per cent of the pre-school age group actually avails of the benefits under the programme (Shantha, 1997). This is a high percentage if it is recognized that those in poverty situations are more likely to avail of the noon meal (the percentage population below the poverty line ranges between 30–40, depending on which figures are accepted).

The noon meal is perhaps better described as a substitute rather than a supplementary nutrition input, as it is in lieu of a home meal, rather than in addition to it.

Another initiative which has picked up considerably in Tamil Nadu and which can have a positive impact on overall child care and nutrition is the establishment of women's self help groups (SHGs). Women SHGs, by empowering women financially, are able to make women more responsible decision makers *vis-à-vis* their family and children in particular (see Box 4.5).

Box 4.5—Women's Empowerment through Self Help Groups (SHGs)

Combining nutrition education with *women's empowerment* and *poverty alleviation* through regularity in savings and income generation is important. This achieves two things: women become aware and ambitious themselves and for their children and, they have the purchasing power combined with status within the household to take responsible decisions for their children. Women's empowerment has been facilitated with the extension of a major micro-finance scheme for women, the Tamil Nadu Women's Development Project, popularly called *Mahalir Thittam*, meaning women's scheme.

The scheme promotes social and economic empowerment among women through women's organization into SHGs, rotation of their collective savings to help satisfy emergency and consumption needs of households, reduce the dependence on money lenders, institutional credit access and income generation in the hands of women. The project's pilot phase has already demonstrated that poor rural women are credit worthy and can become financially savvy even when semi-literate. Around 9.5 lakh women in Tamil Nadu were reported as participating by December 2000. Strengthening and integrating women's working groups of TINP with SHGs, thus institutionalizing economic empowerment systems among women rather than working in independent compartments, would help in establishing inter-sectoral linkages across schemes.

In 1995, a State policy on nutrition was explicitly drafted with technical support from the United Nations Children's Education Fund (UNICEF). Tamil Nadu is probably the first State to draft such a policy, following the 1993 National Nutrition Policy. This has been reformulated in 2002–3 as Policy for Malnutrition Free Tamil Nadu. The State policy, for the first time, explicitly recognizes that food alone cannot eradicate malnutrition.

Public Distribution System

One should also not forget the PDS system as it is also a nutrition-based intervention of sorts. Tamil Nadu's PDS aims at price stability and attempts to make available a few selected articles of mass consumption, particularly to the vulnerable section at reasonable prices. The PDS network extends to 27,848 outlets including 36 mobile fair price shops. Essential commodities such as rice, wheat, sugar and edible oils are distributed to consumers at below market prices. As expenditure on food constitutes a considerable amount for families, the PDS is an essential element of the government's safety net for the poor in checking the erosion of real earnings.

The total number of family cards is 16 million, out of which only 2.5 million card holders have given the option for extra sugar instead of rice. Thus, about 13.6 million card holders are entitled to get rice up to a maximum of 20 kg per month per card at the flat rate of Rs 3.50. Tamil Nadu's retail price of rice is the lowest in the country and involves a total subsidy of more than Rs 15,000 million per annum.

However, in spite of the sustained and massive investments in direct nutrition in Tamil Nadu, of the kind not taking place in other States, the improvements in anthropometric indicators have not been considerable. Some States do better than Tamil Nadu, others do worse, but by and large, all demonstrate improvement. **Obstacles to improvements in nutritional status in Tamil Nadu could be partial or even full replacement of the usual diet at home when there is feeding in the centres, inadequacy of nutrition education among communities, inadequate focus on the adolescent girl who is to be the future mother, difficulties in adopting changed practices recommended by the programmess as they need time (frequent feeding) and resources (fuel for boiling water), a focus on the already undernourished for providing food inputs. This last factor, while it does help the currently malnourished, does not prevent new batches of malnourished children from being added every year.**

Non-nutritional Factors and their Impact on Nutrition

Various studies have shown the importance of factors like improved water supply, reduction in infections, near universal immunization, providing herd immunity etc., in improving nutritional status. In fact, as the 1999 NIN report shows, during the 1975–97 period there was no significant improvement in nutrient intake, and yet, an improvement in nutritional status of pre-school children was observed.

Many of the non-nutritional factors require very little effort on the part of individual households or child care givers. Most of these are under the purview of the State, and hence comparatively easier to control as against activities that require child care givers to put in special effort, acquire better knowledge and adopt nutritionally conducive practices. For example, it is easier to just provide a protected water supply point in a village than teach all the mothers the importance of diarrhoea management with oral rehydration therapy (ORT) combined with small and frequent feeds, and to ensure such practices within households.

Inter-sectoral coordination between the departments dealing with water, hygiene sanitation and health is crucial for the prevention of diseases, especially water-borne diseases. An analysis of the impact of health promoting factors on the health status of the population is dealt with here.

Water and Sanitation

Water and sanitation are two non-nutritional factors which have an impact on nutrition. An attempt is, therefore, made to look briefly at the water and sanitation situation in Tamil Nadu. With a growing population, there is mounting pressure to provide water supply and sanitation facilities on a sustained basis. Provision of these basic facilities is also crucial for achieving the goal of 'Health for All'. Specific attention is given to assessing the availability and accessibility of drinking water and sanitation facilities. Intra-state disparities are analysed and policy interventions are suggested. Data are mostly from the 1991 Census (though more recent data have also been used) as the socio-economic tables of the 2001 Census are yet to be published, and to a lesser extent from the NSS 44th and 49th rounds.

Water Supply

In 1991, about 68 per cent of households in Tamil Nadu had access to safe drinking water. This is, however, slightly misleading as there are substantial distributional inequalities between districts, between rural and urban areas, between major towns as well as between local bodies. In Madurai, for instance, more than 83 per cent of households had access to safe drinking water, compared to around 32 per cent in Ramanathapuram (Census, 1991).

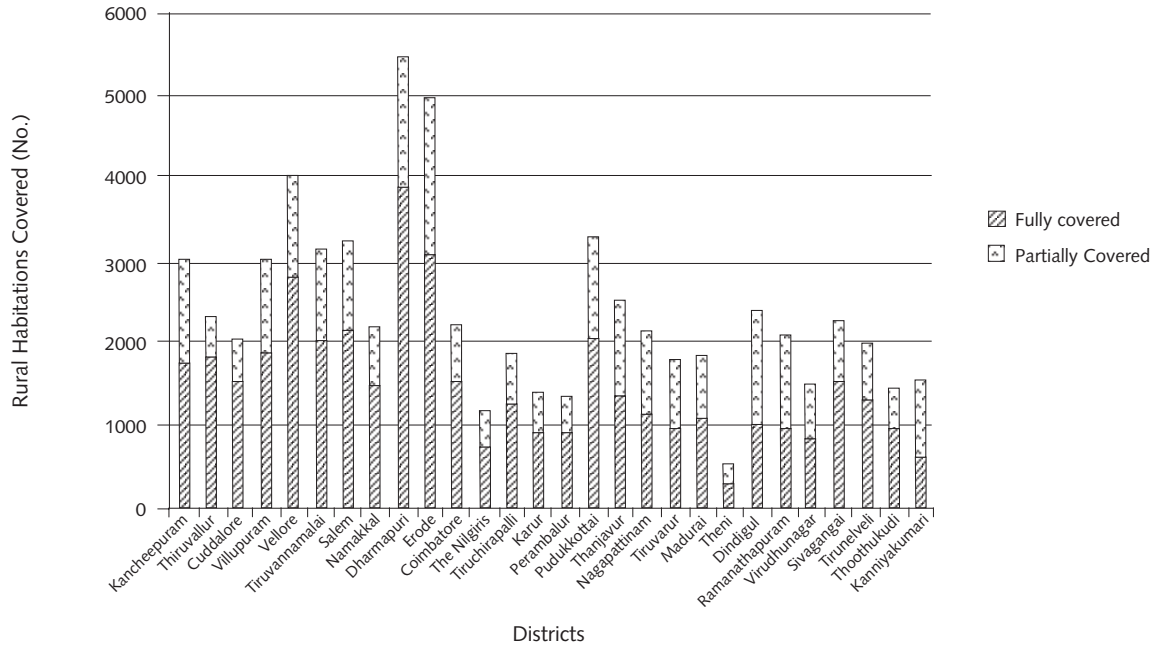
The urban and rural situation is significantly different. In 1999, 64 per cent of the State's urban population had access to drinking water. However, only 50 per cent had supply as per the norms. Moreover, less than 40 per cent of households residing in municipalities and about 24 per cent of households residing in town panchayats had house connections. Also, 35 per cent of water was unaccounted for, that is, it does not seem to reach the target, as compared to the world norm of about 10–15 per cent.

The position in regard to access to safe drinking water by households according to Census 2001 is set out in the Table 4.7.

TABLE 4.7—ACCESS TO SAFE DRINKING WATER BY HOUSEHOLDS (IN %)

	Total	*Within premises*	*Outside Premises*
Total	85.5	24.6	61.0
Rural	85.3	10.7	74.6
Urban	85.9	44.0	41.9

FIG. 4.5—DISTRICT-WISE ACCESS TO WATER SUPPLY



Source: Statistical Handbook, Tamil Nadu, 1998.

Failure of systems & sources and inefficient operation and maintenance by local bodies in the absence of expertise are factors which contribute to the problem of shortage of water supply to urban areas. All the 66,631 rural habitations identified in the 1992 resurvey have been covered with drinking water supply. To asses the drinking water status in rural areas, a resurvey has been taken up and the actual position will be known on completion of the resurvey report.

Figure 4.5 illustrates that the level of achievement, with respect to the habitations covered by water supply, varies across districts; with the percentage of fully covered habitations varying from about 41 per cent in Kanniyakumari to above 78 per cent in Thiruvallur district. The concentration of partially covered habitations is more in Kanniyakumari district (59 per cent) followed by Dindigul (57 per cent) and Ramanathapuram (53 per cent).

Access to water is not the only problem. Time and resources are required to access water from distant sources. During the summer months the problem of scarce water is accentuated, involving long and frequent treks to the nearest accessible water source. Primarily the women of the house undertake fetching of water. Thus, the development of basic services without a doubt benefits women. The development of local water supplies, sanitation, roads and rural energy programmes can do much to reduce womens' burden and improve the health conditions of women and children. Households that have no water source within their premises need to be covered on a priority basis.

Salinity in water sources, owing to Tamil Nadu's long coastal tract, is also posing a problem in the provision of protected water supply. This problem is particularly acute in Ramanathapuram. Desalination plants have been installed at 11 places in the district to convert brackish water, unfit for drinking, into drinking water. Among these is a major desalination plant with 3.80 mld capacity capable of converting sea water into potable water, installed at Narippaiyur and meant to benefit 345 rural habitations. An estimated 25,000 people in Chennai are benefiting from desalination plants in four different areas.

Sanitation

Toilet facilities are available to only 23 per cent of the households in Tamil Nadu (1991), a situation which is not too good. Unlike in other parts of the world, pit latrines have not picked up in India at all nor in Tamil Nadu.

Even in urban areas, less than 58 per cent of households have access to sanitation facilities, as compared to about 51 per cent in 1981. The fact that there has not been any significant improvement over a decade is worrisome. Chennai has the highest coverage with 82 per cent and Tiruvannamalai, with less than 9 per cent of households having access to toilet facilities, the lowest.

The rural scenario is even worse. Only about 7 per cent of the rural population has access to sanitation facilities (1991). According to 2001 Census, the coverage is as follows:

	Total	*Rural*	*Urban*
Toilet	35.2	14.4	64.3
No Toilet	64.8	85.6	35.7

In comparison, about 67 per cent of households in Kerala have access to toilet facilities (NSSO, 1993). This is a major area of concern. Though the Tamil Nadu Government initiated steps for the construction of rural toilets in 1986–7, the programme did not succeed due to lack of water facilities. Therefore, in recent years, the emphasis is on the provision of quality community toilets with water facilities. Dry type latrines no longer exist in village panchayat areas.

Toilets within or near dwellings are a rarity in rural areas. Defecation in the open is common among villagers, not only because there is no alternative, but also because it is a preference. Even among the upper caste households that have a latrine constructed within, only the women use it while the men continue to go to the fields. Water scarcity in some villages is another factor for dysfunctional latrines. Rural sanitation is a priority area and the goal is to cover at least 75 per cent of rural population with access to sanitary facilities by the end of the Tenth Plan. This will uphold the dignity and privacy of rural women and improve the quality of life in rural environs. In order to prevent defecation in open areas and in drains, **concerted effort is required to disseminate knowledge and create awareness among people on sanitation and its impact on their health and environment. This can be accomplished by educating a target group, in this case women, which would in turn influence the families.**

Water and Sanitation—Impact on Health

The link between water, sanitation and health status is a complicated one. Nonetheless, these non-nutritional factors do have a significant impact on the ability of individuals and households to attain a good nutritional status. Why? The World Bank has estimated that more than 30 million life years are wasted annually due to water-related diseases. It is estimated that 80 per cent of all diseases and sicknesses are water-borne and water-related.

Water pollution in developing countries creates a major problem of diarrhoeal disease, not only among children but also among adults. The conditions that facilitate the transmission of these diseases are all related to poverty and unhealthy living conditions.

In India, diarrhoeal diseases are a major cause of death among adults. It is observed that incidence of diarrhoea cases is less among those using own wells or piped water at home. An analysis of acute diarrhoeal disease cases in Tamil Nadu reveals that a higher percentage has been reported in districts such as Tiruvannamalai, Ramanathapuram, Vellore, Virudhunagar and Cuddalore, which have a lower percentage of households with water sources within premises.

Thus, the control of these diseases needs to be addressed chiefly through improving sanitation and the supply of safe drinking water. Here again, the situation in Tamil Nadu is quite grim—43 per cent of households (more than 50 per cent in the rural areas) do not have access to drinking water, toilet facilities and electricity.

Lack of good drainage is another possible cause contributing to water-borne diseases. Virtually no municipality

has an underground sewerage system. Underground drainage facilities have been provided fully or partially in 16 towns, though the existing drainage systems also suffer from deficiencies. Rural and urban areas have a predominance of open *kutcha* drainage, a rather inefficient medium that is responsible for widespread overflowing, clogged or broken drains. It is also a cause for concern that of the total urban malarial cases reported in 1999, 70 per cent were in Chennai.

Utilization of Health Services—Public vs Private

There has been an impressive growth in physical infrastructure and personnel in public health care. The government health sector now employs around 15,000 doctors including various types of specialists and around 30,000 paramedical personnel. With the focus on primary health care over the last two decades, there has been a significant expansion of PHCs and HSCs in particular.

Dependence on a public facility for treatment of a non-hospitalized illness is generally higher in Tamil Nadu as compared to the average for the country as a whole. In rural Tamil Nadu, women seek non-hospitalized care from a public facility to a significantly greater extent than men, while the reverse is true in urban Tamil Nadu. The all-India figures show much smaller differences between men and women in this regard. Pubic health facilities in rural Tamil Nadu seem to be quite important for women.

When it comes to inpatient care, there is a far greater public–private mix. The scenario for Tamil Nadu is dramatically different than that for All India, with private health facilities accounting for 85.4 and 56.47 per cent respectively of all hospitalized cases in rural and urban areas of Tamil Nadu as against the corresponding figures of 38 and 40 per cent for India.

Surveys undertaken by the National Sample Survey Organization (NSSO) and National Council for Applied Economic Research (NCAER) bring out certain basic features of the morbidity situation and provide data on access to and utilization of medical and health care services by households. Of interest are the findings regarding use of public versus private facilities, costs and patterns of morbidity.

National Sample Survey (1997 and 1998) data suggest that the poor in Tamil Nadu are much more likely to use a public facility than a private one for inpatient care. In the lowest income quintile, 72 per cent of inpatient days are in public facilities. This proportion declines to just 27 per cent for the top quintile. However, the upper quintile tends to spend significantly more time under hospitalized care than the poor. As a result, the well-to-do utilize far more of public health care facilities than the poor, in terms of total inpatient days.

National Sample Survey data also show that the proportion of all outpatients using the public sector has declined in both rural and urban areas between 1986–7 and 1995–6. This is true for both All India and Tamil Nadu and in fact for most States. Relative to the national average, Tamil Nadu shows a higher degree of utilization of public sector facilities in both rural and urban areas in 1986–7 as well as in 1995–6.

A more recent survey by the NCAER, conducted in 1994, involving an all-India sample of 33,000 rural households, and including 1294 persons reporting ailments in Tamil Nadu (Mallaney, 2000), reveals a different picture. The results indicate that even in the poorest quintile, more than two-thirds seek private care despite it being more expensive.

Primary Health Centres

Primary health centres cater to a large section of the rural population when it comes to treatment of minor ailments. Almost 35 million outpatients are treated in PHCs annually. Allowing for repeaters, this still indicates a high degree of utilization of PHCs for minor ailments (given that the rural population of Tamil Nadu is around 45 million).

A study by the Community Medicine Department of the Kilpauk Medical College (KMC) shows that the average consultation is only 2.78 minutes per patient in PHCs. This indicates that adequate duration of outpatient

services needs to be ensured by operationalizing and strictly adhering to the existing, officially mandated outpatient timings in PHCs.

Box 4.6—Towards a Health Management Information System (HMIS)—A Tamil Nadu Initiative

A well-designed and properly functioning Health Management Information system (HMIS) is crucial for effective management of health service delivery. One important sub-system of HMIS pertains to the monitoring of health services. An initiative taken in the DANIDA assisted TNHCP to monitor institutional services rendered by PHCs is relevant in this context.

There are two elements involved: one relates to monitoring institutional services rendered by PHCs and HSCs, and another to monitoring health programme related services for improved management. The former relating to PHCs has been established using an optical mark reader (OMR) for data entry.

An appropriate system for monitoring of institutional services of HSCs and programme related services is being developed by the technical working group constituted for development of an HMIS for primary health care, taking into account the changes in the programme protocols and integration of some vertical programmes in primary health care.

The DANIDA TNHCP initiative to monitor PHC performance began in April 1999. The data collected, for 12 different kinds of services that a PHC is mandated to provide, and outputs generated provide interesting insights and pointers. Discussion and sharing of the outputs at various levels of the State's health administration have helped sensitize health officials to the importance of Indian systems of medicine, and to a range of health policy issues.

Since the start of monitoring of the PHCs, there have been significant improvements in two important indicators viz: outpatient services and deliveries.

The KMC study also indicates that there is a trend towards 'poly-pharmacy', that is, the practice of prescribing more than two drugs for a single common illness. The percentage of prescriptions with antibiotics, even in the primary health set up, is around 54.42. Ideally, in a primary care setting, the antibiotic usage should not be more than 25 per cent. The number of prescriptions with injections are around 56.47 per cent. Here again, the ideal value in a primary care setting should not exceed 10 per cent. Similar studies are needed at secondary and tertiary levels and a more rational use of drugs needs to be emphasized. With the free and easy availability of drugs through TNMSC, there is a risk of 'overprescription'. This is an important issue with regard to the quality of care.

The interface between the public health department and the people needs to be strengthened considerably with an emphasis on the quality of care. The issue of private practice for doctors and its impact on government health services needs to be discussed and evaluated (Box 4.6).

Private Sector

In India more than three-fourths of the expenditure on health care is incurred privately. Thus, while the total expenditure—public and private—on health amounted to 5.2 per cent of GDP in 1997, public expenditure on health as a percentage of total health expenditure was just 13 per cent.

It is thus clear that the private sector is a major player in the country's health care system. The private sector is the major provider of outpatient care in all the major States according to data from the 52nd round of the NSS pertaining to the reference year 1995–6. This is true for both urban and rural areas. Even with respect to inpatient care, as many as 10 out of 15 major States report the private sector to be the major provider in both rural and urban areas in 1995–6.

In Tamil Nadu, the private sector accounted for 75 per cent and 72 per cent, respectively of total outpatient care in 1995–6 in rural and urban areas. The corresponding percentages for inpatient care were 58.9 per cent and 64.3 per cent as against the all-India figures of 54.7 per cent and 56.9 per cent. There are only four States—Punjab, Karnataka, Maharashtra and Bihar—in which the proportion of private provision of inpatient care to total in urban areas is higher than that in Tamil Nadu.

The private sector in the health sector is far from homogenous. The private corporate sector in health is numerically small but enormously influential in setting trends and standards as well as the terms of reference on issues such as quality. The corporate private health care institutions—including super-specialty hospitals—are largely located in metropolitan and other big cities. What is emerging with the rapid growth of the 'for-profit' sector in health care, and of corporate health care enterprises in particular, is a high degree of commercialization of health care as well as systemic dualism. The rich, and in emulation, the not-so-rich, seek and obtain expensive private health care at reputedly world class institutions, while the poor who cannot afford such care go the public sector health institutions, low cost private providers of uncertain quality or sometimes avoid seeking any type of treatment.

Despite competition from the private sector, costs have gone up rapidly in both public and private hospitals. The average expenditure on hospitalization per episode of illness has gone up very sharply in the public sector, from Rs 320 to Rs 2080 in rural areas and Rs 385 to Rs 2195 in urban areas at the all-India level. The average cost per hospitalization has also risen sharply in the private sector over this period but the ratio of cost of private care to that of public care has come down from 2.29 and 3.13 to 2.07 and 2.43 in rural and urban areas, respectively. In the case of outpatient care, the cost of care at private facilities has risen more rapidly than that at public facilities. The private–public cost ratios for outpatient care rose from 1.05 and 1.08 in 1986–7 to 1.44 and 1.20 in 1995–6 for rural and urban areas, respectively. On the whole, cost per hospitalization rose by 132 per cent in rural areas and 146 per cent in urban areas, that is, it more than doubled.

While the private sector has played an important role in providing better services, this has led to increased inequality in access to health. This has had a caste dimension as well. Scheduled castes and tribes report poorer health outcomes than the non-SC/ST population. This is because most SCs and STs do not have access to private medical facilities because of the prohibitive cost. The issue of equity in health raises complex questions and needs to be addressed in a multidimensional manner, keeping in mind the dimensions of class, caste, gender and sub-regions within the State.

Apart from the issue of equity that this sort of dualism in access to health care raises, there is also the issue of regulation. The private sector in health has remained largely unregulated even while subsidies to private corporate hospitals have grown. It is widely recognized that there is little standardization of quality or costs of care in the private sector.

Special Programmes to Reduce Morbidity

With regard to overall morbidity, the NCAER survey found that Tamil Nadu reported a lower morbidity prevalence rate than India in both rural and urban areas in 1993, the figures being 78.5 per 1000 rural (India: 106.7) and 75.7 per 1000 urban (India: 103). In line with the all-India pattern, the rate of prevalence of chronic illness was relatively higher in rural areas. Serious communicable diseases such as typhoid, malaria, chicken pox, cholera, acute gastroenteritis, jaundice, measles, mumps and tuberculosis (TB) accounted for around 12 and 14 per cent, respectively of reported rural and urban morbidity in Tamil Nadu in 1993, not very different from the corresponding all-India percentages of 14.5 and 13.3 per cent. The NCAER survey data suggest that morbidity prevalence rates decline as income increases, in both rural and urban areas. In particular, acute illnesses and serious communicable diseases occur more frequently among low income groups.

AIDS Control

The first case of HIV in India was reported in Tamil Nadu in 1986. Since then, a number of measures have been taken to address the issue of AIDS control. Tamil Nadu was the first State in the country to form a State-level AIDS Control Society to implement the programme in a fast track mode in partnership with non-government organizations (NGOs), community-based oganizations (CBOs), the private sector as well as national and international agencies.

All 29 districts of the State have reported AIDS cases. It is estimated that there could be 300,000–350,000 HIV positive cases. A major thrust in Tamil Nadu in tackling the AIDS epidemic has been in the area of IEC. Other elements of the strategy to control AIDS include: modernization of blood banks and promotion of voluntary blood donation; control of sexually transmitted diseases; interventions focused on high risk groups; surveillance; and training of health system personnel.

Two major agencies in the State involved in the area of sexually transmitted disease (STD)/HIV/AIDS prevention and control are: the State AIDS Control Society and the APAC, administrated by the Voluntary Health Service (VHS) with funding from United States Agency for International Development (USAID). Both work in close collaboration with NGOs. The components of the programmes of intervention include development and use of IEC materials, behaviour change communication, increased quality of STD care services, training clinical and non-clinical personnel counselling for STD/HIV/AIDS patients, partner treatment, condom promotion etc. **However, despite greater knowledge related to STD and HIV among respondents, the perception of risk remains relatively low**.

Malaria Control

The National Malaria Control Programme (NMCP) was launched in Tamil Nadu in 1953. Following its perceived success, the National Malaria Eradication Programme (NMEP) was launched in 1958–9. Initial optimism that malaria could be completely eradicated was belied by the resurgence of malaria during the mid-1960s. A modified plan of operation seeking to control rather than eradicate malaria was introduced in 1977. It sought to integrate malaria control with primary health care rather than treat it as a separate wing of the Directorate of Public Health, with field activities also remaining outside the purview of the PHCs. Areas have been classified as epidemic-prone areas, tribal areas with malarial problems, and urban areas with malarial problems. Another classification is that of urban malaria, coastal malaria and riverine malaria.

An analysis of the incidence of malaria in the State shows that malaria remains an urban problem. While the incidence of total malaria cases has come down from around 100,000 cases in 1992–3 to around 35000 cases in 2002, the share of urban malaria cases has gone up from 65 per cent to 84 per cent during the same period. Of the total malaria cases reported in the State, the share of Chennai has gone up from 48 per cent in 1992 to 79 per cent in 2002.

Since the malaria mosquito breeds in fresh water, a campaign to cover overhead tanks with tight-fitting lids could yield a breakthrough in Chennai and other cities and towns. Simultaneously, vector control through anti-larva work, active surveillance by door to door visits and treatment, and educating private practitioners are needed to tackle the problem.

Leprosy Eradication

The National Leprosy Eradication Programme (NLEP) was launched in 1994–5. With the introduction of multi-drug therapy in 1981, there has been a remarkable improvement in the treatment and recovery of leprosy patients. In Tamil Nadu, the prevalence rate has been brought down rapidly from 118 per 10,000 population in 1983 to a mere 2.2 in 2002. Taking into account the changes in trends and profile of leprosy, the State government decided to integrate leprosy services into general health services. Leprosy curative services are now available in all PHCs, corporations, municipal hospitals and government dispensaries. The programme components

in Tamil Nadu include: case detection, treatment and release; prevention of disabilities and rehabilitation; manpower development; IEC and community participation; and monitoring and evaluation, backed up by health system research.

While the prevalence of leprosy has come down in the State as a whole, there are inter-district variations. Chennai and Kanniyakumari respectively report the lowest figures of 0.9 and 1.7 per 10,000 population. The highest incidence rates are in Perambalur 5.9 and Thiruvannamalai, 5.7. Other districts with above average prevalence rates include Thoothukudi (5.6), Namakkal (5.5) and Dharmapuri (5.2).

Tuberculosis Control

Tamil Nadu has about one million TB patients of whom 25 per cent are regarded as infectious. The TB control programme in the State functions through district-level units. It is based on the revised national TB control programme. It envisages detection of TB patients from those reporting with chest symptoms at the district TB centre as well as peripheral medical and health institutions in each district, including effective treatment for the prescribed period. During the period 1998–2002, a total of 349,000 new cases have been detected, exceeding the 'target' of 333,000 by a sizeable margin.

Other Public Health Issues

Some public health issues, which need both government intervention and strong campaigns, relate to smoking, alcoholism and drugs. **Drugs and alcoholism are yet to be treated as public health issues and are dealt with more as social problems which defy or do not warrant public health interventions. The issue of domestic violence is also not treated as a public health problem.** In fact, this issue remains very much in the private sphere of the family. A lasting solution to the issue of domestic violence will involve both the all-round empowerment of women and the sensitization and mobilization of the community as a whole as well as legal and public health interventions.

Another important policy issue is occupational health. There are several industries where workers are exposed to serious health hazards such as cement, asbestos, tanning, bleaching and dyeing, pharmaceuticals and chemical industries. Health surveillance, diagnosis and care of workers in these industries needs to be prioritized. Also, issues of environmental monitoring and protection and occupational health need to be streamlined in health policy.

Sectoral Outlays—Health and Nutrition

In the context of the ongoing process of structural adjustment and economic reforms, it is widely recognized that social sector expenditures come increasingly under pressure on account of the government's fiscal constraints. Given the importance of the social sector, and especially health, it is important for human development that ways are found to protect and enhance the government's budgetary allocation to the health sector even as one pays attention to more efficient utilization of the allocated outlays.

Government outlays for the health sector in Tamil Nadu fall primarily under two heads: (i) medical and (ii) public health. Over the years, the government's budgetary outlays to the health sector have been increasing in both nominal and real terms. Taking only the decade of 1991–2000, the budgetary provision for 'medical and public health' rose in current prices from Rs 4.11 billion in 1991–2 to Rs 10.51 billion in 1999–2000. Except in 1995–6 and 1999–2000, the increase in nominal outlay over the previous year has exceeded 10 per cent with the highest increase of 19.8 per cent being recorded between 1990–1 and 1991–2.

Despite absolute increases in health expenditure, the outlay on health as a share of the total expenditure provision on the revenue account in the State government's budget has shown a declining trend in the 1990s.

Summary and Policy Imperatives

Tamil Nadu is moving towards population stability and has managed to reduce maternal and infant mortality substantially over the last three decades. It has also established a widespread network of health institutions in the public sector, and equipped them to some extent. In respect of the three strategic elements for reduction of MMR—family planning, antenatal and post-natal care, and essential and emergency obstetric care—Tamil Nadu has also, over the years, made significant progress. With some additional resources, imaginative policy initiatives and increased participation of the people, the State can make more strides forward.

For Tamil Nadu to improve upon its past performance, it not only needs to target particular areas of concern, but also ways and means to go about attaining these goals. A number of priority points are identified below which will provide certain targets for the future.

Reduction of IMRs, especially female IMRs.

Emphasis on malnutrition—in particular girl and maternal malnutrition.

Efforts to reduce anaemia and in particular, anaemia among women of child bearing age.

Improve quality of primary health care institutions and antenatal care.

Strengthen emergency obstetric services.

Continued emphasis on family planning and increased options for birth control, especially for men.

Improve service delivery and choice options.

Increase and improve provision of MTP services.

Mainstream Indian systems of medicine in the health system.

Mainstream gender in health.

Emphasize decentralization of health care planning and administration and community participation in health.

Improve quality of data for policy purposes and strengthen surveillance and health information systems.

To move towards attaining these goals of better health and nutrition status, Tamil Nadu needs to focus more on disease control as opposed to management. Tamil Nadu's nutrition policy document provides a clue for the future when it says, **'feeding programmess which seek to improve the nutritional status among the already malnourished children are less likely to be effective. They are expensive and therefore non-sustainable'.** Future generations may be better served if priority is accorded to **prevention** of malnutrition rather than to its **management.**

The long term objective should be to eliminate malnutrition altogether. Hence reduced direct food provisions can be combined with an increasing emphasis on **strategies for community education and participation** to bring about widespread consciousness in communities about the importance of good nutritional status and the ability to recognize poor growth cases so as to trigger behavioural changes. Increasingly, the focus could shift to **orienting all adolescents,** boys and girls, who are to be the parents of the future, rather than merely women who are already pregnant and whose habits may already be rather fixed.

5. Literacy and Education

Chapter

5

Literacy and Education

Given Tamil Nadu's rich heritage in education (see Box 5.1), it is not surprising that it is in the forefront with regard to several educational indicators such as literacy, school enrolment, infrastructure, access and achievement. Education is a vast sector, making it impossible to dwell on all facets within the confines of this chapter. As the focus of this report is on human development, elementary, secondary and tertiary education are examined as an indicator of the present level of human development as well as a means for greater human development in the future. Data from the Sixth Educational Survey 1993 and the State's Education Department have been extensively relied upon, comparative data from other States have also been used in the study.

Literacy

Literacy Performance of Tamil Nadu

While the literacy rate of Tamil Nadu was almost comparable to the all-India position in 1941, the State has inched ahead of all-India in the decades following independence (Figure 5.1). The results of the 2001 Census show that Tamil Nadu has attained third position behind Kerala and Maharashtra among major States, both in terms of overall and female literacy. While the overall literacy rate has gone up from 62.7 per cent in 1991 to 73.47 per cent in 2001, the male literacy rate has increased from 73.75 to 82.33 per cent. What is encouraging is that the female literacy rate has gone up by more than 13 percentage points from 51.33 per cent in 1991 to 64.55 per cent in 2001. The ratio of male literacy to female literacy has come down from 1.4 in 1991 to 1.27 in 2001, revealing the narrowing of gender inequality in the State.

International comparisons are useful to contextualize Tamil Nadu's performance amongst other developing countries. Figure 5.2 shows the male and female literacy rates of some major developing countries, including China. Also plotted in the figure is the ratio of male and female literacy, which serves as a measure of gender inequity. While Tamil Nadu's position in 1991 was significantly better than that of Pakistan and Bangladesh on all literacy indicators, the State has not yet attained the average level of all developing countries. The literacy levels of China, Indonesia and Sri Lanka are much higher, having marginally surpassed the average attainment levels of 'medium human development' countries as defined in the United Nations HDR. The gender inequity index for Tamil Nadu also follows the same trend, being lower than that of Pakistan, Bangladesh and India as a whole, but yet to reach the levels attained by other countries shown in the graph. Within the Asian region, Sri Lanka, South Korea, China and Indonesia have made impressive strides.

FIG. 5.1—LITERACY RATE
INDIA VS TAMIL NADU

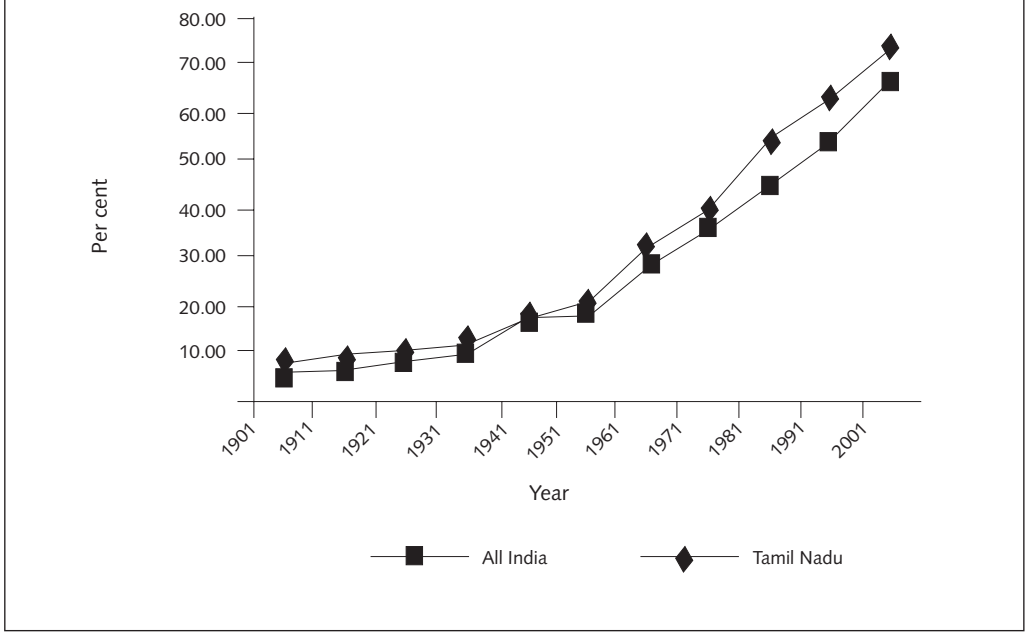
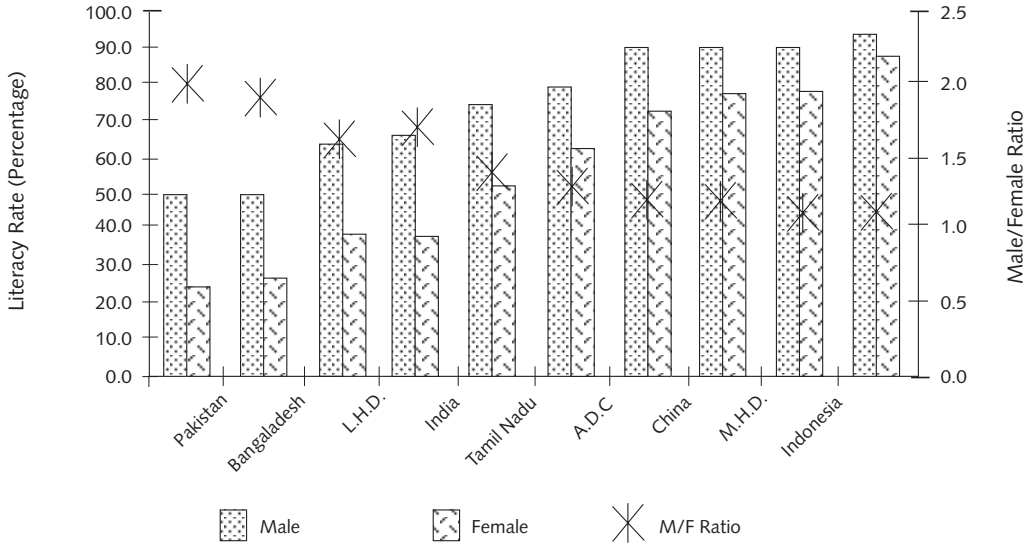


FIG. 5.2: LITERACY RATE AND MALE/FEMALE RATIO



Literacy by District, Gender, Residence and Social Grouping

A more detailed analysis based on the 1991 Census data shows wide variations in Tamil Nadu across districts and wide disparities across gender, area of residence as well as social grouping. Total female literacy, however, still tends to show a widely dispersed range from 34.23 per cent in Dharmapuri to 78.30 per cent in Kanniyakumari. The districts of Dharmapuri, composite South Arcot and Tiruvannamalai have female literacy rates equal to or less than the national average, in spite of the fact that Tamil Nadu is one of the better performing States in terms of overall education.

An analysis of the urban–rural differentials in literacy rate for 1991 shows that the literacy level for urban men stands at 86.06 per cent while that for rural females is nearly half at 41.84 per cent. Further, the male–female literacy ratio for urban areas is 1.2 while that for rural areas is 1.6, showing that gender discrimination is higher in the rural areas. Also, urban literacy rates for almost all the districts tend to hover in a band between 70–80 per cent, whereas the rural literacy rate varies unduly from a low of 43.32 per cent in Dharmapuri to a high of 80.76 per cent in Kanniyakumari. The literacy rate of the SC population is distinctly and consistently lower than that of the total population in all the districts. The State's literacy rate for the SC population is 46.74 per cent by which the ratio of overall literacy to SC literacy is 1.34. The literacy rate for SC women is 34.89 per cent with the comparable ratio to overall female literacy being more adverse at 1.56. **It is a matter of serious concern that female SC literacy figures are lower than 30 per cent in districts like Erode and Coimbatore where the other development parameters are above average.**

Youth Literacy Rates

According to international standards, the literacy rate of 15–24 year olds is an indicator of the level of participation in primary education in the previous decade. The 1991 Census indicates that the overall literacy rate of this age group is 72.7 per cent, with a male literacy rate of 81.8 per cent and a female literacy rate of 63.9 per cent. Two features are worth noting. Over the last decade, female literacy levels in this age group in Tamil Nadu have gone up by 29.5 per cent, above the country average of 22.4 per cent, indicating some degree of success in increasing female participation in primary education. While the gender equity ratio is 1.31 in this age group, this ratio has dropped to 1.1 in urban areas with a male literacy rate of 90.0 and a female literacy rate of 80.7. These figures are positive indicators of urban primary school attendance and achievement in the eighties.

Elementary Education

In line with the constitutional mandate, the State government is committed to the task of providing universal primary (elementary) education for all children up to the age of 14 years. The success of the State in achieving this end can be studied by analysing three broad parameters:

- Enrolment of all children between six and fourteen years in primary and middle school;
- Retention of children in primary and middle schools, both with respect to the drop out and repetition rate; and
- Quality of education with reference to attainment in basic language and numeracy skills.

Primary Education

Trends in Enrolment

Table 5.1 shows the trends of sex-wise enrolment from 1975–6 to the present. In primary classes, the overall increase in enrolment is 27.6 per cent with the current level of achievement having been achieved as early as 1980–1 itself. However, there has been a distinct narrowing of the gender gap. The drop in enrolment in the nineties could also be attributed to the drop in birth rate.

TABLE 5.1—SEX-WISE ENROLMENT AT ELEMENTARY STAGE (*in lakhs*)

Year	*Primary (I–V)*			*Upper Primary (VI–VIII)*			*Elementary (I–VIII)*		
	Boys	*Girls*	*Total*	*Boys*	*Girls*	*Total*	*Boys*	*Girls*	*Total*
1975–76	30.01	23.39	53.40	8.69	5.04	13.73	38.69	28.44	67.13
1980–81	34.80	28.66	63.46	11.48	6.94	18.42	46.28	35.60	81.88
1985–68	38.90	33.03	71.93	14.69	9.98	24.67	53.59	43.01	96.60
1990–91	41.82	35.81	77.63	18.14	13.44	31.58	59.96	49.25	109.21
1995–96	43.89	38.06	81.95	21.02	16.80	37.82	64.91	54.86	119.77
1997–98	35.18	32.95	68.14	19.30	16.63	35.93	54.48	49.58	104.07

Source: National Institute of Education and Planning (NIEPA).

In the middle school classes, the growth in the same period has been more dramatic, showing an increase of nearly 161 per cent. The gender ratio has also improved from 1.72 to 1.16. The disturbing factor is that the annual growth rates in enrolment have slowed down considerably in the nineties. A part of this phenomenon could be explained by the drop in birth rate, but the falling growth needs to be checked so that 100 per cent enrolment in middle schools can be achieved.

Box 5.1—History of Elementary Education in Tamil Nadu

The earliest developments in the field of education in the State were brought on by the advent of the Christian missionaries as early as the beginning of the eighteenth century. Though the English East India Company had started a school at Fort St George in 1673 for educating the children of its own employees, it was the missionaries who were responsible for spreading education among the local population.

The Report of the Elementary Education Survey of the Madras Presidency, 1925, gives us some interesting insights into the history and progress of elementary education in the State. The report points out that there were three agencies managing elementary schools in the province: i) private bodies, mission and non-mission including private individuals and teacher managers, ii) local boards and municipal councils, and iii) government. Three distinct periods are also traced in the spread of elementary education in the province: i) the early period up to 1910, ii) the middle period from 1911–20, and iii) the period from 1921 onwards.

The earliest period is characterized by major changes in policy, both regarding the medium of instruction, agency to start and run elementary schools as well as the methodology of funding of aided institutions.

Though early initiatives like Munro's minute of 1820 made some headway in vernacular education, these were often cancelled by contradictory policies such as Macaulay's directives on English as the medium of instruction. Progress was made after Wood's despatch of 1854, which introduced the system of grant-in-aid for encouraging private participation in primary education.

Spurred by the national movement under leaders like G.K. Gokhale, there was a marked shift in the educational policy of the government from 1910 onwards, marking the second period in educational development in the Madras presidency. The Government of India agreed to subsidize the opening of elementary schools in every village with more than 500 inhabitants. In pursuance of this policy, a liberal recurring grant of Rs 5 million was sanctioned out of Imperial subsidies which enabled the Provincial Government to subsidize district boards for the opening of such new schools.

The third major breakthrough in the spread of education came with the Madras Elementary Education Act 1920. Under this act, local bodies were given the responsibility for elementary education and were also given powers to levy special cess to raise funds for education. The act also directed the local bodies to introduce compulsory primary education in selected areas based on their financial position.

Some interesting highlights on the status of girls education in the State in a recent article reveal that the proportion of boys to girls in elementary schools changed from 4:1 in 1911–12 to 3:1 in 1926–7. A report published on 'Development of Women's Education' (1929) revealed the various obstacles that stood in the way of girls education. Since the society at large and the backward communities in particular had not accepted co-education as a system, there was a need to open more girls schools so as to ensure access for girls. But the limited funds for education were used up for the opening and development of boys schools for which there was much more public clamour and support. Private aided agencies also were not keen to open girls schools which would necessarily serve a more limited group of children. Further, the spread of girls education was severely hampered by the non-availability of trained women teachers, especially among Hindu and Muslim women. In March 1927, as against 39,000 male teachers in higher and lower elementary grade, there were only 6000 women teachers, which was considered 'satisfactory' by the authorities at that time.

District-level Analysis

District-level variations in GER can be studied using the School Education Department data for 1998–9. At the primary level, the overall enrolment for the year 1998–9 was 105.21 per cent. Boys' enrolment was 106.37 per cent and girls' enrolment was 104.01 per cent. The GER for primary classes shows a wide variation across districts, from 85.86 per cent in Villupuram to 114.40 per cent in Coimbatore. The percentage of district-wise enrolment of girls also reveals a similar pattern. There is a clear correlation between districts with low girls' enrolment and overall enrolment. The GER for girls is below 100 per cent in eight districts with two districts, Dharmapuri and Villupuram, having GER for girls below 90 per cent. It is significant to note that six out of the eight districts have been covered under the World Bank funded District Primary Education Programme (DPEP). In the other two, Salem and Namakkal, the projections for girls' school age population may be slightly higher than the actual figures due to a high female infant mortality and a rapidly falling sex ratio which distorts the GER and makes it appear lower than it really is.

Though the overall gender inequity is not striking, gender differential is most visible in the low performing districts of Cuddalore, Villupuram, Perambalur and Pudukkottai. In some of the other districts, the GER for girls

is equal or even marginally higher than that of boys, showing that the State has made some progress in ensuring access for girls at the primary school level.

Disaggregated, district-level GER data for SCs and STs are not available. However, the enrolment of SC/ST children accounted for 24 per cent of total enrolment in 1998–9 which is higher than the percentage of SCs/STs in the State (19.2 per cent). The data from the districts covered by DPEP, confirm the same trend with enrolment ratios for the SC students in primary classes being higher than that for all communities put together.

Box 5.2—Incentives for Enrolment

Tamil Nadu has been a pioneer in the introduction of various schemes to enhance enrolment of children in elementary education. The most important of these schemes is the Noon Meal Scheme (NMS). In July 1982, the government introduced this massive programme to cover all rural children in the age group 2 to 9. This scheme was extended to urban areas and to the age group of 10 to 15 (both rural and urban), that is up to Class X, in September 1984. The main objective of the scheme was not only to ensure nutritional support to children but also to act as an effective incentive to achieve universal enrolment and retention in primary school. There are 40,437 school meal centres which cover nearly 6.4 million children in the age group 5 to 14.

The State Government provides text books free to all children studying up to Class VIII in the government and government-aided schools. Another scheme which aims to reduce the economic cost of sending a child to school is the free provision of uniforms to all beneficiaries under the Noon Meal Scheme. A total of 6.04 million beneficiaries are covered under the scheme with a budget provision of Rs 250 million. Though there have been improvements in attendance after the introduction of these schemes and drop out rates have decreased, there are no scientific studies that assess the exact extent of their impact on the universalization of education.

Attendance in Primary and Middle Schools

A comparative analysis of the performance of various Indian States in achieving school attendance at the primary and middle school levels, as measured by the 52nd Round of the NSSO on utilization of educational facilities, can be seen in Table 5.2. With a gross attendance ratio (GAR) of 98 per cent for the age group 6–10 years and 80 per cent for the age group 11–14, Tamil Nadu is among the better performing States in the country. Kerala and Himachal Pradesh have the best figures. However, States such as Punjab, Haryana and Maharashtra are inching ahead showing equal or higher levels of attendance at primary as well as middle school levels. It is clear that Tamil Nadu has to gear up its educational system to keep up its competitive advantage.

TABLE 5.2—GROSS ATTENDANCE RATIO

	I–V	*VI–VIII*
Andhra Pradesh	86	58
Karnataka	87	61
Kerala	109	97
Maharashtra	106	80
Haryana	106	86
Tamil Nadu	98	80
Bihar	54	51
All India	85	65

Source: NSSO, 1995–6.

Retention in Primary Schools

The Education Department figures for drop out rates at the primary level show a steady fall in the last decade to 14.52 per cent with male drop out rates being 12.98 per cent and female drop out rates 16.15 per cent. However, district-wise analysis of these drop out rates is not possible since they do not show much variation—the traditional method of drop out rate calculation is strongly influenced by data quality and collection methodology.

The Sixth Educational Survey also gives details of district-wise retention. In this survey, the percentage of enrolment in Class V as a Percentage of class I enrolment in the same year has been studied. The figures are very revealing. Though the overall enrolment in Class V is 84.98 per cent of Class I enrolment, falling in line with the departmental drop out rate, there is wide variation among the districts. Dharmapuri, once again, brings up the rear with a ratio of only 74.79 per cent, while the three districts of Chennai, Nilgiris and Kanniyakumari have ratios of above 100 per cent. It is also interesting to note that for the State as a whole, the figures for boys and girls are practically equal. There are some districts, however, such as Dharmapuri, Cuddalore, Villupuram, Pudukkottai and Erode where the male–female gap is quite significant. It must be borne in mind that these so-called 'drop out rates' are not a measure of the actual percentage of children who leave the school system, but also include the percentage of repeaters who form a part of the enrolment figures in Class V.

The phenomenon of repetition is also brought out by the data from the Sixth Educational Survey which show that repeaters make up 14.31 per cent of the enrolment in primary classes—with 15.92 per cent repeaters in Class I and 13.14 per cent in Class II, respectively. The reasons for retention of children in the first two classes need thorough analysis.

TABLE 5.3—DPEP—COMPLETION RATE, DROP OUT RATE AND PERCENTAGE REPEATERS

Name of the District	*Completion Rate*	*Drop out Rate*	*Percentage Repeaters*
Phase—I Districts			
Dharmapuri	50.74	21.93	27.34
Cuddalore	57.27	13.54	29.19
Tiruvannamalai	60.44	14.63	24.93
Villupuram	56.44	17.95	25.61
Phase—II Districts			
Pudukkottai	53.72	17.67	28.62
Perambalur	52.05	18.47	29.48
Ramanathapuram	52.26	17.78	29.96
DPEP Districts Average	55.01	17.57	27.41

Source: DPEP-MAS.

Studies under DPEP (see Box 5.3) have also revealed that the internal efficiency of the school system is strongly influenced by the high level of repetition. A comprehensive cohort study conducted from 1994–5 to 1998–9 in all seven DPEP districts has shown that the actual completion rate (ACR) for the primary classes is only 55.01 per cent, that is only 55 per cent of children complete primary school at the end of five years (Table 5.3). The poor completion rate is due to an average drop out rate of 17.51 per cent, compounded by an alarmingly high repeater percentage of 27.41 per cent. Among the seven districts studied, Tiruvannamalai shows the highest ACR at 60.44 per cent while Dharmapuri has the least rate at 50.74 per cent.

Box 5.3—Quality Improvement in Primary Education: District Primary Education Programme (DPEP)

The DPEP is an externally-aided programme implemented in selected backward districts from 1993–4 onwards. The programme which aims to achieve the goal of universal primary education focuses on the improvement of quality of education in primary classes as well as on equity between schools and districts. The districts covered under the scheme include Dharmapuri, Tiruvannamalai, Cuddalore and Villupuram in Phase I and Pudukkottai, Perambalur, Ariyalur and Ramanathapuram in Phase II.

Under this programme, child-centred, activity based text books and work books have been developed by practicing teachers of primary classes. Emphasis has also been placed on continuous in-service training for teachers through setting up of block resource centres.

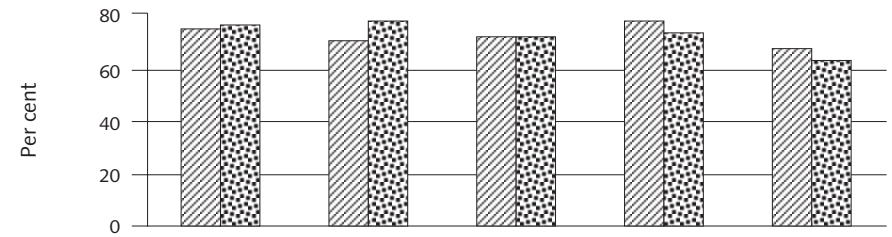
In addition to providing infrastructure such as school buildings and toilets, the programme has several innovative components such as 'alternative schools' for drop outs and special coaching classes for SC and ST girls. Another success area has been the Integrated Education for Disabled (IED) Programme implemented in 42 blocks. Non-governmental organizations have been used to train teachers to provide integrated education to moderately disabled children attending normal schools. The DPEP also has a strong component of public participation with 94 school buildings having been constructed through the community.

Wastage, due to repetition and drop out of pupils, increases the per-pupil cost of providing education—thus diverting scarce resources available for this purpose. Further, high levels of wastage are closely correlated with poor quality of education, and are often good indicators which can be used to monitor and improve school-specific performance.

Achievement

Due to the initial priorities of access and retention in the schooling system, historical trends regarding quality and achievement in primary education are not readily available. It is possible, however, to draw some conclusions from the studies on mathematics and language achievement conducted during mid-term assessment in the DPEP districts. The mean performance in language in Class I varied from 56.34 per cent in Tiruvannamalai to 79.4 per cent in Villupuram, and in mathematics from 52.27 per cent in Tiruvannamalai to 77.6 per cent in Villupuram.

FIG. 5.3—MEAN PER CENT OF ACHIEVEMENT OF CLASS I STUDENTS



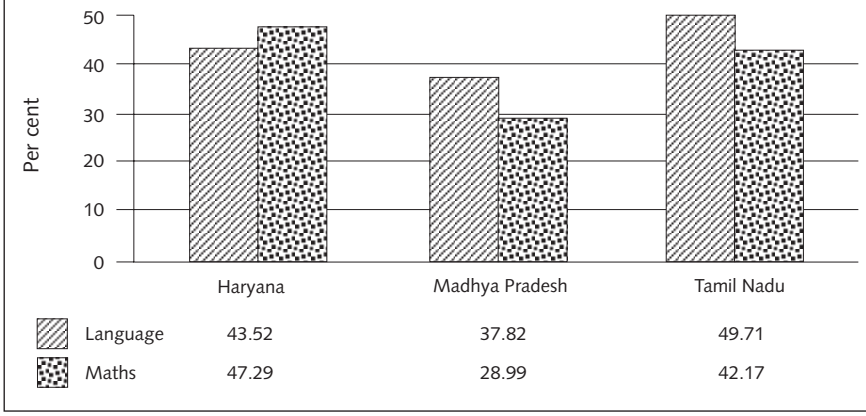
	Assam	Haryana	Karnataka	Kerala	Tamil Nadu
Language	73.27	69.46	70.03	76.41	65.52
Maths	74.45	76.48	71.78	72.91	61.66

Source: DPEP-MAS.

In Class IV testing, the performance of the districts in language varied from 43 per cent in Tiruvannamalai to 59.7 per cent in Cuddalore, while in mathematics the best performance was in Villupuram at 50.98 per cent. Another conclusion that emerged from this study was that the gender differential in achievement in Class I was reduced to less than 5 per cent, while in Class IV no significant difference between boys and girls was observed.

A comparison of average figures in Tamil Nadu and those of DPEP districts in other States is presented in Figures 5.3 and 5.4. While the State's performance lags behind in both language and maths for Class I, the performance of Class IV students in language is better than that in other States. The performance of Class IV students in mathematics is also better than that of students in Madhya Pradesh. As the districts covered under the first phase of DPEP are the educationally most backward districts of the State, their performance might be slightly worse than that in other districts of the State.

FIG. 5.4—MEAN PER CENT OF ACHIEVEMENT OF CLASS IV STUDENTS



Source: DPEP-MAS

Having said this, home-related factors alone will not have much of an impact. They must be accompanied with good inputs in the primary schools themselves. **To get a better understanding of the State of primary education, the Education Department should put in place a mechanism to study the quality of primary education and achievement levels of children.**

Primary School Infrastructure

Having examined the educational process and 'outcomes' of education in general in Tamil Nadu as well as across districts, it is now necessary to look at the various infrastructural inputs which make these attainment levels possible or in fact constrain high attainment levels.

Availability of Primary Schools

It is the State government's policy that every habitation with a population of 300 and above should have a primary school within a distance of 1 km. According to the Sixth Educational Survey in 1993–4, 44,516 out of 45,139 habitations in the State (with population above 300), fulfilled these criteria. In subsequent years, the State government has opened new primary schools to cover not only the 603 habitations identified in the survey but subsequently populated areas also.

Availability of Basic Infrastructure

While 62.34 per cent of primary schools in Tamil Nadu have drinking water, only 19.97 per cent have urinals and only 12.57 per cent have lavatory facilities. Though this places Tamil Nadu relatively better off than the all-India average, States like Kerala with 76.16 per cent of primary schools having drinking water are doing much better. The coverage under these parameters is also better in States such as Punjab and Haryana (Table 5.4).

TABLE 5.4—BASIC INFRASTRUCTURE, SELECT STATES

State	*Drinking Water*	*Urinals*	*Lavatory*
Kerala	76.16	81.38	40.29
Tamil Nadu	62.34	19.97	12.57
Haryana	76.95	56.30	15.7
Andhra Pradesh	31.42	7.34	6.01
Karnataka	23.94	4.57	3.31
Punjab	87.72	52.49	20.87
All India	44.23	18.93	10.86

Source: Sixth Educational Survey.

With regard to educational infrastructure, only 232 schools have reported that they do not have a blackboard. Nearly 24,000 out of 34,000 reporting schools have maths and science kits, presumably supplied under Operation Blackboard. Availability of tape recorders is observed in 18,069 schools. Sports articles are available in 17,990 schools. However, while the survey gives a relatively good picture, the results will have to be verified, that is, what needs to be seen is whether all these materials are actually being put to use or are even in a usable condition.

TABLE 5.5—PUPIL–TEACHER RATIO

State	*Primary*	*Middle*
Andhra Pradesh	49.26	44.71
Bihar	49.58	42.99
Kerala	31.05	30.10
Tamil Nadu	37.19	42.22
Maharashtra	37.47	38.10
All India	40.00	36.07
Gujarat	35.98	41.08
Rajasthan	36.73	29.09
Orissa	37.50	31.49
Assam	34.80	19.77

Source: Sixth Educational Survey.

Availability of Teachers

The pupil–teacher ratio for primary schools for the State as a whole is 38, which is better than the all-India average of 40. A State-wise look at pupil–teacher ratios shows that there is no exact correlation between this ratio and educational performance. Tamil Nadu's ratio falls in the medium range, above Kerala's value of 31.05 and far below

the values of Andhra Pradesh (49.26) and Bihar (49.58). Even educationally backward States such as Orissa, Rajasthan and Assam, have pupil–teacher ratios which are comparable to that in Tamil Nadu at the primary level. This reinforces the point that this ratio has to be studied along with spatial distribution of teachers as well as other infrastructure parameters if it is to serve as an indicator of educational performance.

Pupil–teacher ratios vary significantly between the districts in Tamil Nadu. Data from the Sixth Educational Survey show that the pupil–teacher ratio varied from 56 in Dharmapuri to 26 in Nilgiris. Subsequently, teacher vacancies have been systematically filled up. Further, the high pupil–teacher ratio districts have been covered by the DPEP which has helped reduce the overall disparity. This is reflected by the figures observed in 1998–9. Though the overall ratio continues to be 38 for primary schools, there has been some improvement in the educationally backward districts such as Tiruvannamalai, Cuddalore, Dharmapuri and Villupuram with ratios of 33, 40, 41 and 41 respectively. There is still a wide dispersion of values from 54 in Pudukkottai to 29 in Dindigul and attempts will have to be made to redistribute the available teachers across the districts.

The pupil–teacher ratio in each district will have to be disaggregated further and studied with reference to block-level variations since the unit for appointment of primary school teachers is the block. A block-wise pupil–teacher ratio for the two districts of Dharmapuri and Tiruvannamalai shows that the district-level ratio conceals more than it reveals. While one block in Dharmapuri had a pupil–teacher ratio of 32.8, there were seven blocks with ratios above 60. Similarly, in Tiruvannamalai, two blocks had a ratio of less than 32 while four blocks had ratios above 50. The same pattern is observed in nearly all the districts. Further, the highest ratios are observed in areas which are lacking in educational and other infrastructure. **New strategies are required to devise means to rationalize teacher availability across the State.**

Compulsory Education Act

A major legislative effort for the universalization of education has been the introduction of the Tamil Nadu Compulsory Education Act, 1994. Though the provisions for introduction of compulsory education were available in the Tamil Nadu Elementary Education Act, 1920, these were not mandatory and were left largely to the initiative of the individual local bodies.

Under the 1994 Act, the duty of the government to provide the necessary infrastructure (schools and teachers) for ensuring universalization of elementary education is laid down. Similarly, the duty of the parent to send every child of school going age to attend school has also been categorically declared.

The State Government has also issued rules under the Act, giving powers to education officers to fine parents who do not send their wards to school. Implementing the penal clause is, however, fraught with complications. It is the children of the most vulnerable families who often do not attend school. Such parents (very often, a single parent), already marginalized by poverty and illiteracy, cannot be punished again for a situation that may not entirely be their fault.

Middle School Education

Enrolment in Middle Schools

Studies have already established the linkage between improved development indicators and education up to the middle school level. Given the commitment of the State Government to achieve education for all up to the age of 14 years, the process indicators in upper primary education can be analysed for the State as a whole, as well as the variations across districts, gender, area of residence and community.

The GER of the State for Classes VI to VIII, according to Education Department statistics for 1998–9, is 89.25 per cent. The districts performing poorly include the educationally backward Dharmapuri with a GER of

73.33 per cent. Some unexplained low figures are found in Nilgiris with a GER of 75.96 per cent and Karur with a GER of 72.69 per cent. At the upper end are Madurai with a GER of 100.4 per cent and Thoothukudi with a GER of 99.33 per cent.

A look at girls' enrolment figures shows that there is a distinct bias in favour of boys. The differential in most districts is also wider than that observed in primary school enrolment. Some anomalous figures such as the lower enrolment ratio for boys, observed in Nilgiris, Perambalur, Ramanathapuram and Virudhunagar, need further analysis in order to determine the reasons.

It is interesting to observe that unlike for primary school enrolment there is no direct correlation between low performing districts and gender inequity. The pattern observed is that male GERs are in a much narrower band (except for Nilgiris) between 84.54 and 105.28 per cent, whereas female GERs show much greater variance. Districts with male GER around and above the State average such as Thanjavur, Nagapattinam and Coimbatore show low female GERs. This clearly indicates that there are specific problems that stand in the way of ensuring female access in this age group—even in districts with better performing educational infrastructure. Efforts have to be made to identify these issues and tackle them head-on.

In order to look at social bias, the most reliable figures are those of the Sixth Educational Survey, which indicate that the GER for SC students in this age group is anomalously high (119.1 as against 87.7 for all communities) while for ST students, the figures are depressingly low at 51.9 for the State as a whole. Education Department figures show that SC enrolment in Classes VI–VIII is 18.61 per cent of total enrolment which is in line with the overall SC population of 19.2 per cent. However, the ratio of ST enrolment to total enrolment is 0.78 per cent which is slightly lower than the ST population percentage.

Retention in Middle Schools

The drop out rate at the middle school level is 35.23 per cent with the girls' drop out rate being 33.3 per cent and the boys' 36.85 per cent. There has been a curious upturn in the drop out rate of boys at the middle school level in 1998–9 which has led to the girls' drop out rate being marginally lower. This is contrary to the prevailing trends and belies the expectation that girls would tend to drop out more often due to puberty.

The highest drop out rates have been recorded in Cuddalore and Villupuram namely, 40.39 per cent and Kancheepuram at 42.72 per cent. **A point of interest is that Salem and Namakkal districts, which have an average drop out rate at the primary level, show a very low middle school drop out rate of 21.65 per cent.**

As already discussed, the current method of calculation of drop out rate is strongly influenced by data of earlier years which may be flawed, both due to changes in methods and accuracy of data collection. For district-level analysis, a more reliable indicator would be to look at the percentage of children in Class VIII to children in Class I as studied during the Sixth Educational Survey in 1993–4. Here, the figures show that the enrolment of boys in Class VIII is 65.7 per cent of Class I figures while that of girls is 60.59 per cent. **The trends are as expected, with Chennai and Nilgiris topping the list with 110 per cent and 96 per cent, respectively. The educationally backward districts of Dharmapuri and Ramanathapuram bring up the rear at 43.55 and 42.40 per cent, respectively. Anomalous figures such as the low percentage of 45.51 for Tirunelveli, where other educational parameters are positive, merit further analysis.**

As already stated, the only satisfactory way to study wastage in the middle school system would be to follow a cohort, which has yet to be done. The repetition phenomenon in these classes was, however, studied at the time of Sixth Educational Survey. The average percentage of repeaters in middle school classes is 15.17 per cent The highest is 19.55 per cent, namely in Class VI. This clearly shows the problem of educational adjustment in Class VI, a factor that will have to be studied in more detail.

Middle School Achievement

As there have been no significant studies on achievement in Classes VI–VIII, it is not possible to comment on district-level achievements. The success rate in the school leaving exams is, however, studied under the section on secondary schooling, and indicates the quality of middle schooling in the district to some extent.

Middle School Infrastructure

Availability of Basic Infrastructure

The availability of basic facilities such as drinking water, toilets, etc. is similar to that in elementary schools. Though 75 per cent of the middle schools have drinking water, only 51.9 per cent have toilet facilities and 27.5 per cent have a separate toilet for girls. Tamil Nadu's performance is better in comparison to the all-India scenario and most other States. As expected, the performance of Kerala in this regard is significantly better—at least in terms of provision of drinking water and toilets. Two other States, namely Punjab and Haryana, are also far ahead of the all-India average.

Provision of such basic infrastructure is a key area which the State will have to concentrate on in order to achieve universal access and retention of middle school children, especially girls.

Availability of Teachers

At the time of the Sixth Educational Survey, the pupil–teacher for middle school classes in Tamil Nadu was 42.22, higher than the all-India figure**. The States with pupil–teacher ratios above 40 are Andhra Pradesh, Bihar, Gujarat, Haryana and Karnataka which are not necessarily the educationally most backward.** The range of values across the States is also very wide with values as low as 22.85 in Punjab and as high as 54.31 in Karnataka.

District-wise disparities in Tamil Nadu are also significant. While the pupil–teacher ratio is 30 in Nilgiris, it is as high as 57 in Villupuram. The arguments for further disaggregation of these ratios for meaningful analysis are the same as discussed for primary education. It is, however, a positive feature that the departmental figures for 1998–9 show a distinct improvement in nearly all districts, with the ratio falling to 36.

Box 5.4—Teachers in Elementary Education

According to the Sixth Educational Survey, there are 144,000 teachers in primary schools and 63,371 teachers in upper primary schools in the State. Nearly all the teachers are trained, with only 7.6 per cent in primary and 6.97 per cent in upper primary schools being untrained. The proportion of teachers possessing graduate qualifications is 14.63 per cent in primary sections and 34.87 per cent in upper primary classes. Though the prescribed qualification up to Class eight is only secondary school with teachers training of two years, an increasing proportion of teachers who possess or acquire a graduate degree will have a favourable impact on raising the quality of education, especially above Class six.

The gender composition of the teaching community reveals that at the primary level, 48.9 per cent of the teachers are women. When the schools are analysed management-wise, we find that private aided and private unaided schools have the largest proportion of women teachers with 63.27 and 78.27 per cent respectively, while local body schools have the lowest at 42.34 per cent.The same trends are revealed in upper primary schools as well, with the ratio of female teachers being 56.22 per cent and private aided and unaided schools having the largest percentage of women teachers. The all-India figures for women teachers in primary and upper primary schools are 31.6 and 35.97 per cent respectively. There seems to be some correlation between a higher proportion of women teachers and better school performance as may

be seen from the fact that Kerala, Goa as well as union territories like Delhi have proportions of women teachers higher than 60 per cent while educationally backward States like Uttar Pradesh have less than 25 per cent of teachers who are women. The State Government has put in place a policy of recruiting women for at least 50 per cent of government and panchayat union school posts.

The State has 16.15 per cent SC teachers in primary schools which is more or less in line with the SC population percentage for the State. However, a management-wise break-up shows that private aided and unaided schools have ratios far below this figure whereas government schools have 41.46 per cent of their primary teachers belonging to SC. This is mainly due to the fact that most of the government primary schools are run by the Adi Dravidar department and have a teacher recruitment policy which is skewed in favour of SC teachers. The same pattern is also seen in middle schools.

Box 5.5 is a summary of areas of concern and initiatives required for universalizing elementary education in Tamil Nadu. As is evident, there are areas of concern with regard to enrolment, retention and drop out as well as highlights of initiatives required. Emphasis is also placed on devising a clear strategy for non-formal education and concentrating on improving the quality of education in terms of syllabus, teaching materials and infrastructure.

Box 5.5—Elementary Education: Areas of Concern and Initiatives Required

Areas of Concern	*Initiatives Required*
	Enrolment
• Variations in enrolment across districts, especially in backward districts.	• Strategies should be devised to help these districts break through their historical backwardness and achieve universal enrolment.
• Identifying pockets of non-enrolment and covering left out children.	• Conduct micro-level household surveys, identify pockets of non-enrolment and bring the left out children into the primary school system.
• Gender inequity in middle school enrolment.	• Devise clear strategies focused at universal middle school access for girls.
	Retention
• Reducing repetition rate especially in Classes I and II.	• Reduce irregular attendance of children by continuous monitoring and counselling through mother–teacher councils; improve quality of schooling.
	Drop outs
• High drop out rate among children.	• As this is related to poverty and low literacy levels, support systems should be designed for such children as well as the teachers to help them attend school regularly.
	Non-formal Education
• Over 15 lakh drop outs in the State in the age group of 9–15.	• Clear strategy should be devised to cover all these children and link them to a formal school. The coverage of NFE projects should be expanded by bringing all drop outs under its net.

Quality of Education	
• Lack of teaching materials and infrastructure.	• Make available basic infrastructure and teaching and learning material such as maps, charts etc., besides utilizing fully the existing infrastructure; improve quality of existing infrastructure in schools, for example functional blackboards; devise systems to assess and improve quality of teaching at the school level.
• Syllabus based teaching.	• Programme of teacher training to achieve 'Joyful Learning' should be sustained. Text books to be redesigned with the child as the focus for joyful learning.
• Small school size.	• Teachers of small schools should be given special training in multi-grade teaching to achieve high quality in teaching at the primary level.
Teachers	
• Rational distribution of teachers.	• While pupil–teacher ratio may be as per the prescribed norms at the State or district level, it may not be so at the block level. Re-deployment of teachers from schools which are over-staffed to those which are understaffed needs to be done by devising appropriate transfer policies. Tackle delays in posting and timely joining, especially in remote areas.
• Lack of teacher motivation.	• The school administrative system should be designed to reward teachers for their performance and prescribe disincentives for those who do not perform. Headmasters should have a more positive role in teaching as well as administration.
Community Participation	
• Low involvement of parents.	• At the primary school level, parent–teachers association are not very active. There is a need for parents and teachers to get together frequently, so that the former may be counselled periodically on their children's education. Innovative methods (such as village education committees) should be put in place to empower village communities to act within the ambit of public provisioning of primary education.
Role of Local Bodies	
• Greater role for local bodies in primary education.	• This requires a major policy change. Meanwhile, some decentralization will definitely increase accountability and efficiency of teachers. Partial autonomy at the primary school level should also be thought of for greater accountability to the local community.

Secondary Education

In this section, issues of secondary education, that is from ninth standard upward, are dealt with. They include the steep decline in enrolment, the gender gap, quality of education and infrastructure disparities. Inter-district disparities and causative factors have also been analysed.

TABLE 5.6—STATE-WISE ENROLMENT IN CLASSES IX AND X AS PERCENTAGE OF ENROLMENT IN CLASS I

STATE	*Secondary Schools*	
	IX	*X*
Andhra Pradesh	22.00	19.68
Tamil Nadu	53.90	37.22
Kerala	100.46	79.22
Karnataka	29.96	26.26
Haryana	40.42	39.81
Bihar	16.57	14.59
Maharashtra	42.77	33.26
Punjab	43.90	42.80
Rajasthan	21.69	13.89
Uttar Pradesh	28.52	27.68
West Bengal	22.24	13.81
Madhya Pradesh	30.90	22.87
All India	31.06	25.03

Source: Sixth All India Educational Survey.

Inter-State Comparison

An intriguing feature of Tamil Nadu's educational system is that despite the incentives of free noon meals, free uniforms and free textbooks up to the eighth standard, the State has not been very successful in registering an impressive enrolment ratio in Class IX. The State ranks fifth in enrolment at the all-India level in Class X with 37 per cent enrolment. Its neighbour Kerala, ranks first (with none of these incentives), and has an enrolment figure of 79 per cent (Table 5.6).

Tamil Nadu comes a close third (45 per cent) to Kerala (51.42 per cent) in terms of girls' enrolment, ahead of Haryana, Punjab and Himachal Pradesh (Sixth Educational Survey, 1993).

In terms of social group-wise enrolment, the percentage of SC girls enrolment is 43.7 per cent of the total SCs enrolled, which is quite close to the State's figure for overall girls' enrolment. The State stands second only to Punjab in SC enrolment in Classes IX–X, while in Classes XI-XII, Tamil Nadu ranks first. Therefore, despite a relatively lower overall enrolment in Classes IX–X, the State's performance in terms of girls' enrolment overall as well as SC girls' enrolment is very impressive. The rural–urban differential at the State-level is very narrow (6 per cent) for high schools, while it shoots up sharply at the higher secondary level where the gap is as much as 23 per cent, indicating the reluctance among parents in rural Tamil Nadu to send their children to schools beyond Class X.

Enrolment Ratio and Inter-district Disparities

There is a perceptible drop in the GER across districts as children move from the middle school segment to high school and from high school to the higher secondary level. The GER in the State in 1988–9 dropped from 89.25 per cent at the middle school level to 66.53 per cent at the high school level and further dropped, by more than half, to 30.33 per cent at the higher secondary level. The district level GER is lower than the State average in

Cuddalore, Tiruvannamalai, Salem, Dharmapuri, Erode, Coimbatore, Perambalur, Pudukkottai, Dindigul and Virudhunagar for both high school and higher secondary segments.

An analysis of the gender gap in enrolment reveals that while the gender differential at the high school level (14–16 years) during 1998–9 was 7 per cent; at the higher secondary level it was just 1.3 per cent. Thus, while at the State-level, the gender differential is not much, it is clear from the district-wise data that there are wide variations in girls' as well as boys' enrolment. The wide differences in boys' and girls' GER in certain districts have smoothened out the State average, presenting a deceptively satisfactory picture. In contrast, at the higher secondary level, Tiruvannamalai, Erode, Nilgiris, Madurai, Tiruneveli and Tuticorin showed a wide gender gap in favour of females, where the girls' GER is higher than the boys' GER ranging from 5 to 16 per cent.

Therefore, it appears that intra-state disparities in enrolment are inherent in the school education system and district-level gender gaps in enrolment are attributable to both social and school-related factors. The impact of female literacy, poverty and gender gap in enrolment at the high school level is analysed in Table 5.7

Female Literacy, Enrolment, Poverty and Gender Gap

The link between poverty, female literacy and the gender gap has been a subject of intense debate for quite some time now. A comparison of high and low performing States shows a definite link between poverty and female illiteracy. The logic can be extended to girls' enrolment as well. Only 9.5 per cent of girls from the poorest 40 per cent of households complete middle school, while 85 per cent of boys and 80 per cent of girls in the top 20 per cent of households do so (World Bank, 1998).

TABLE 5.7—FEMALE LITERACY, POVERTY, ENROLMENT AND THE GENDER GAP

(High School, 14–16 Age Group)

District	*Female[1] Literacy %*	*GER[2] Boys*	*GER[2] Girls*	*Gender Differential*	*%ge of Population below Poverty Line[3]*
1. Kancheepuram	55.2	65.0	51.7	–13.3	27.0
2. Thiruvallur	55.2	82.2	81.7	–0.6	27.0
3. Villupuram	39.7	76.7	64.4	–12.3	50.9
4. Cuddalore	39.7	57.5	53.7	–3.9	50.9
5. Vellore	48.6	70.0	75.0	5.0	36.6
6. Tiruvannamalai	39.3	56.5	46.9	–9.6	42.2
7. Coimbatore	55.7	44.6	54.2	9.6	25.8
8. Nilgiris	61.5	82.4	69.7	–12.7	21.2
9. Tiruchirapalli	48.5	62.5	84.3	21.8	21.6
10. Salem	41.5	55.4	50.6	–4.9	30.1
11. Nagapattinam	54.8	50.5	58.6	8.1	20.2
12. Tiruvarur	54.8	48.4	60.1	11.6	20.2
13. Madurai	54.7	94.2	75.2	–19.0	30.4
14. Dindigul	43.9	65.0	46.5	–18.5	46.3
15. Virudhunagar	50.2	38.4	53.6	15.2	26.2
16. Sivagangai	49.7	86.1	58.1	–28.0	26.6
17. Tirunelveli*	54.2	111.4	54.7	–56.7	44.1
18. Thoothukudi*	64.6	109.5	55.9	–53.6	47.0
19. Nagerkoil	78.4	70.2	81.8	11.6	48.6
20. Pudukkottai	43.6	50.3	43.2	–7.1	26.9
State	51.3	69.9	63.0	–7.0	31.7

Note: *Gross enrolment ratios may exceed 100 because some pupils are younger or older than the high school age group of 14–16 years.
Source: 1. Census, 1991.
2. State School Education Department, 1998–9.
3. Directorate of Economics and Statistics, 1993–4.

In Table 5.7, the correlation between GER at high school level, female literacy and poverty has been analysed for 20 out of the 29 districts in the State. The analysis shows a definite correlation between the three indicators, while in the remaining nine districts (including Chennai) the correlation is not well established.

The indication is, therefore, that poverty has a signficant impact on the education of girls. The reverse is also true, that high education levels can have a positive impact on reducing poverty. As household income is limited, boys tend to get preference over girls for schooling. A World Bank study (1996) reported that as income falls, parents' willingness to educate their daughters decreases faster than their willingness to educate sons.

Out of the 20 districts analysed above, in 13 districts girls suffer from educational deprivation. Educating girls does not get the highest priority among the family's survival concerns in a State of poverty. Even when education is free, there are other costs such as transport, learning materials and participation in extra-curricular activities at school. This is compounded with the opportunity cost of sending girls to school when they could be helping with household work or with income earning activities. This also partly explains the higher school drop out rate among the older girls since their opportunity cost becomes higher.

The supply side factors, such as lack of conveniently located schools, non-availability of female teachers and the absence of single-sex schools, play an even greater role in preventing girls from enrolling in high schools. Many parents, particularly in rural areas, fear the social risk of sending adolescent girls to schools which are co-educational and which lack female teachers. A common apprehension among parents is that it is an unnecessary risk that may later damage their daughter's marriage prospects, and perhaps even force them to give a larger dowry so as to compensate for the loss of reputation. There have been apprehensions that education makes a girl independent and less submissive to her natal family and subsequently after marriage, to the husband's family. Parents also feel that investment in girls' education brings them no return when the girls have to be married off early, since once married, the reciprocal support to her natal household is not possible because of social restrictions on her mobility and choice. **In spite of all these impediments, it is pertinent to note that literate mothers are increasingly influencing their daughters to go to school, as is evident from the higher enrolment of girls seen in districts such as Coimbatore, Tiruchirappalli, Nagapattinam, Tiruvarur and Virudhunagar.**

Narrowing the gender gap in education at the high school and higher secondary levels calls for a multi-pronged strategy that includes: (a) educating parents about the economic and social benefits of girls' education, (b) lowering the opportunity cost of girls' education, (c) free education, (d) providing scholarships to girls to encourage them to continue in secondary school, (e) eliminating the requirement of school uniforms, (f) providing day care facilities to look after the young ones, (g) involving the community in planning and development of education, (h) making the curriculum more gender sensitive and (i) recruiting more female teachers. Ultimately, teachers should be trained to create an enabling environment whereby parents feel comfortable sending their girl children to school.

Low Retention

At the high school level, the drop out rate was 58 per cent in 1998–9. The inter-district disparities in drop out and gender disparity were not very at the high school level. At the higher secondary level, the drop out rate for the State as a whole was 81.49 per cent in 1998–9. Except districts like Kanniyakumari, Madurai and Theni, all other districts had drop out rates above 80 per cent. The gender divide is not very sharp with girls having a slightly lower drop out rate than boys.

Achievement

The analysis of data and pass percentage at the Class X and Class XII public examinations for the year 1998–9 reveals that girls outperform boys in both the examinations. While the State's pass percentage in Class X examination

was 67.9 per cent, with a gender divide of 9 per cent; at the higher secondary examination, the pass percentage was 79.3 with a gender differential of 10 per cent. Villupuram, Cuddalore and Tiruvannamalai have consistently recorded a lower performance in both high school and higher secondary public examinations.

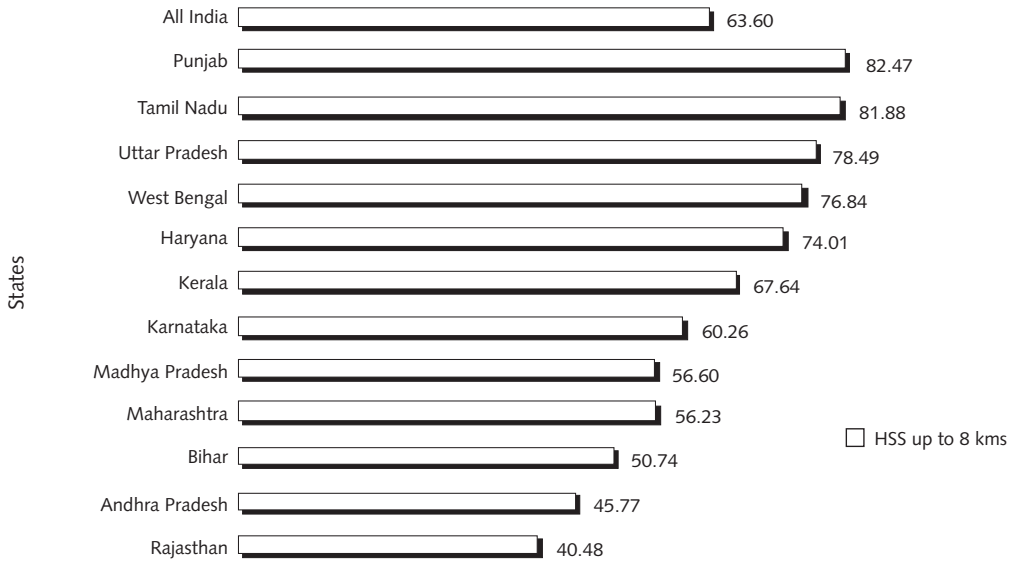
Quality of Education and Infrastructural Disparities

The first step in increasing access to high and higher secondary schools is to provide sufficient schools, classrooms and teachers. As per the Sixth All India Educational survey, 85 per cent of habitations in Tamil Nadu have been provided with secondary school facilities within a distance of five km, which is an accepted norm. This is significantly higher than that in most States. Even in Kerala, only 67.64 per cent of habitations have a high school within the desired 5 km.

Inter-district comparisons show that Dindigul has the lowest coverage, with only 70 per cent of habitations having a high school facility within a distance of 5 km, followed by Pudukkottai (74.69 per cent) and Ramanathapuram (74.64 per cent). Dharmapuri, Cuddalore, Erode, Pudukkottai and Ramanathapuram have high schools within the habitation in only 15 per cent of the habitations. All these districts have lower GERs compared to the State average. **In the case of SC habitations, 13.61 per cent have a high school within the habitation, which is lower than the State average for the general population.**

As far as higher secondary schools are concerned, Tamil Nadu ranks second with 82 per cent of habitations having higher secondary schools within a distance of 8 km (acceptable norm) as against the all-India average of 63.60 per cent (Figure 5.5). Districts with fewer schools are Dindigul and Ramanathapuram.

FIG. 5.5—PERCENTAGE RURAL HABITATION WITH HIGHER SECONDARY SCHOOL (HSS) AT DESIRED DISTANCE



Source: Sixth All India Educational Survey.

Schools cannot operate without teachers; so teachers are needed in both existing schools and new schools. However, the pupil–teacher ratio for secondary schools and higher secondary schools in the State reveals a disturbing profile. As per the Sixth All India Education Survey, the pupil–teacher ratio for secondary schools is 37.63 (all-India average is 30.21), and in respect of higher secondary schools it is 39.69 (all-India average is 34.21).

The State also lags well behind other Southern States such as Kerala, Karnataka and Andhra Pradesh as also Maharashtra, Punjab, Rajasthan and Uttar Pradesh. This is a grey area as far as the secondary and higher secondary school system in Tamil Nadu is concerned.

Pudukkottai (46.21), Erode (41.51), Tiruvannamalai (55.62), Dharmapuri (50.58) and Villupuram (48.42) have a very high pupil–teacher ratio. **A significant feature of the high pupil-teacher ratio is that it is more pronounced in rural areas than in urban areas indicating a marked preference and lobbying among teachers for a placement in urban schools, due to the better living conditions in urban areas.** The ratio in local body schools in rural areas is as high as 59 while in urban areas it is only 35. In unaided schools, on the other hand, the pupil–teacher ratio is only 23. There is an imperative need to look at pupil–teacher ratios at the taluk level so that more rational distribution of teachers can be made and the existing high ratios in rural areas can be brought down considerably.

Lessons for Policy

The above discussion suggests a number of issues with regard to secondary education which require policy interventions in the future.

- Declining enrolment rates cannot be explained as a result of poor infrastructure as Tamil Nadu has good coverage of high school and higher secondary schools with sufficient infrastructure facilities.
- A major reason for declining enrolment rates in secondary school in some districts is the high opportunity cost in terms of demand for labour in the 9–14 age group category. Virudhunagar district, which has 60 per cent of the total match/fireworks factories in the State and where child labour is rampant has a combined GER of only 45.7 per cent as against the State average of 66.53 per cent. Similarly, Nagapattinam and Tiruvarur, which constitute the rice bowl of the State and which have agricultural operations all round the year, have a combined GER of 54.52 and 54.19 per cent, respectively, suggesting high rates of child labour on the farms and in the fields.
- Due to economic reasons, parents are not willing to spend on transportation to send their children to high schools and higher secondary schools which may be 5 to 8 km away.
- In respect of girls, social risk and apprehensions in the minds of the parents are a contributory factor.
- High pupil–teacher ratios act as a disincentive to sending children to school because of the perception that children do not learn anything in school.

All of this suggests that the strategy for improving enrolment rates in secondary schools needs to be multi-pronged in nature. While additional schools are needed in particular areas, this needs to be done after a thorough assessment of which areas actually require more schools. It is imperative that school mapping is done meticulously in order to achieve a more rational location of schools and establishment of high schools and higher secondary schools in accordance with local population densities and GERs in Class VIII.

Besides setting up more schools, a number of other initiatives are also required. Efforts need to be targeted at reducing the opportunity cost of sending children to school so that there is no incentive to drop out. Second, a concerted effort needs to be made to decrease pupil–teacher ratios in areas where they are currently high. Third, focus must be laid specifically on retaining girls in school by convincing parents that this is both economically and socially worthwhile. This will require a long-term strategy aimed at overcoming mindsets which do not place as much value on girls education.

A final issue which requires some attention is **decentralized education**. With panchayats being increasingly empowered with the 73rd Amendment to the Constitution, these bodies will have to play a more important role in the future. Many of the problems mentioned above, with regard to particular areas being deprived of good schools and adequate teachers, can be rectified if panchayats are given more control over the running of schools.

As Box 5.6 illustrates, elected panchayat representatives are much more educated than in the past. They are also more aware of particular local needs which need to be addressed. **In the future, therefore, more attention needs to be given to decentralizing education and giving local bodies a greater say in addressing issues pertaining to education.**

Box 5.6—Education and Panchayati Raj

A study of educational attainments of those elected in 1996, as village panchayat presidents, chairmen of panchayat unions and chairmen of the district panchayat boards presents a very interesting picture. Out of 12,609 panchayats, 3500 elected presidents had studied up to primary school while 6200 had high school qualifications. Over 1200 panchayat presidents had passed higher secondary, while 1600 presidents were either graduates or post-graduates. It could, therefore, be seen that non-literates among panchayat presidents are practically non-existent. With the spread of education, there appears to be an awakening in the villages for taking an active participation in governance at the village level. This is an encouraging sign as it augurs well for responsible governance. Women panchayat presidents constitute as much as 34 per cent, of whom nearly 50 per cent are high school educated. About five per cent of the women presidents are either graduates or post-graduates and another eight per cent are higher secondary qualified. Therefore, besides gender equity in governance, there is also the emergence of a new trend of educated women seeking participation in local governance. At the block level and also at the district panchayat level, the educational attainments of the presidents at the second and third tiers of the Panchayati Raj administration are quite impressive.

Therefore, whatever may be said of the pros and cons of decentralization of education at the district, block and panchayat levels, there is little doubt that there is now a new generation of people who are reasonably educated, who are at the helm of affairs in the Panchayati Raj institutions in the State, and who may be expected to constructively contribute to introducing innovative ideas in decentralized planning and thus, trigger a new era of development.

Vocational Education

The new all-India pattern of education (10+2+3) including the vocational education stream, introduced in Tamil Nadu from June 1978, brought about major changes in school education to suit the needs and aspirations of the people. The preparation of the revised education system at the school level was a hectic process which started in 1972, and after many changes finally came into effect in 1978. The professional entry class, also known as the pre-university course, taught at university-level and in 88 colleges, mostly in urban areas, was dispensed with and instead higher secondary education with a duration of two years in five main branches was introduced at the school level itself in 1927 schools. This has extended higher secondary education to even interior rural parts.

Higher secondary schools were started in such a way that there was at least one institution in each panchayat union and in each municipality. Tamil Nadu has become known as a pace setter in vocational education. As of today, 66 vocational courses under six major areas, viz. agriculture, home science, commerce, engineering and technology, health and others, are being taught at the higher secondary level. Out of 2493 government and aided higher secondary schools, vocational courses have so far been introduced in 1389 schools (47 per cent) and out of the total of 694,000 students, 109,000 students (16 per cent) are studying under the vocational stream in the State.

There are 3366 vocational instructors working in the higher secondary schools in the State. During the year 1999–2000, agriculture and allied subjects were introduced in 100 more higher secondary schools. One stream and

100 posts for vocational instructors have been created at the higher secondary level. Further, in order to encourage students to opt for vocational courses at the higher secondary level, the government has also earmarked 100 seats in government and government-aided engineering colleges and another 600 seats in private self-financing colleges for students of engineering and technology.

There are, however, problems with vocational education as well. The relevance of vocational education for example, in agriculture is not clear when the share of agriculture in NSDP is declining. Vocational courses should be so structured as to enable the students to look for employment using the basic skills acquired. With the introduction of computer education (see Box 5.8), vocational courses in schools would lose their attraction if not suitably restructured. Besides, no evaluation appears to have been undertaken with regard to the usefulness of the 66 vocational courses currently being taught. The courses would appear to have been retained largely to support the already recruited vocational teachers who cannot be re-deployed elsewhere or otherwise utilized. **The recommendations of the Lawrence Committee, submitted in 1993, for revamping vocational education in the State should be examined and action taken to implement them.**

Tertiary Education

During the last decade, Tamil Nadu witnessed a rapid growth in the number of institutions in higher education ranging from industrial training institutes (ITIs) and polytechnics to arts and science and engineering colleges. The State's Ninth Plan places emphasis on consolidation and optimum utilization of the existing infrastructure through institutional networking and restricted expansion of the university and open university system.

Box 5.7—Information Technology Initiatives in Education

Tamil Nadu has been at the forefront in IT and is one of the first States to announce a far reaching, industry friendly IT Policy and set up the State Level IT Task Force to implement it. The government recognized that computer education at the school level is essential to enable children coming out of school to be computer literates and that acquiring basic knowledge in computers would be useful to them either in gaining employment or in pursuing higher studies. The government accordingly introduced computer science as an elective subject in all 1200 higher secondary schools in the State in a phased manner in 1999–2000 and 2000–01. At an average of 40 students per school, every year, 48,000 students passing the higher secondary examination would have acquired basic computer education and hands-on experience in computers. The courses are based on curriculum designed by experts. For Classes IX and X computer education is being introduced from the year 2000–01. A single textbook for both these classes is being brought out in the form of a practical guide (learning by doing). The syllabus for computer science in Classes XI and XII is also being revised keeping in view the developments in the field of computer science.

Industrial Training Institutes (ITIs)

Recognizing that the industrial development of the State is dependent on skilled manpower, the government set up a vast network of ITIs throughout Tamil Nadu. There are 53 government ITIs spread all over Tamil Nadu, imparting training in 36 engineering and 15 non-engineering trades.

To supplement the efforts of the government in producing more skilled craftsmen for the industry, a pilot scheme for starting new private ITIs in all 218 blocks, where there were no ITIs, was launched in 1996–7 to allow rural youth to benefit from industrial training. During the last three years, 152 new private industrial training

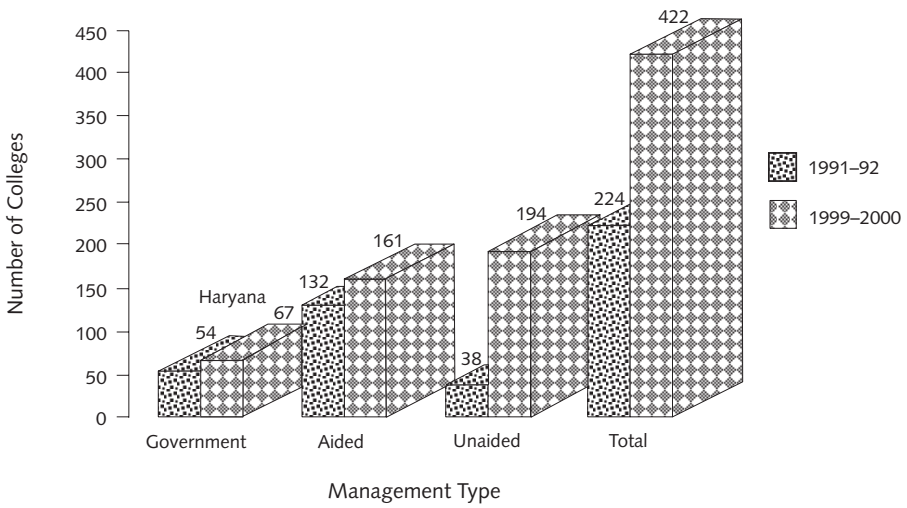
centres have been started in the State, increasing the total number of private industrial training centres to 590 with an intake of 6075 trainees.

However, to prevent a mismatch between training and employment as well as to steer training priorities and programmes in the right direction, a market-oriented planning approach has to be adopted that relies on analysis of trends in the labour market. This can be done by conducting comprehensive surveys and tracer studies, which are useful tools to find out about employers' expectations and plans over time. Such surveys and studies should be updated at required intervals. If technical skills are to be rapidly absorbed in the market at attractive salaries, emerging market demands should be constantly studied so that the technical training imparted meets the market requirements.

Arts and Science Colleges

There has been a rapid expansion in colleges offering arts and science courses in the State. At present, there are 422 arts and science colleges, of which 67 are government colleges, 161 aided colleges and 194 self-financing colleges (Figure 5.6).

FIG. 5.6—GROWTH OF ARTS AND SCIENCE COLLEGES IN TAMIL NADU, 1991–2000



Source: Policy note on Higher Education, Government of Tamil Nadu.

The opening of self-financing arts and science colleges started in the State in 1984–5. By 1991, 27 self-financing arts and science colleges had been opened. In the following decade (1991–2000), 167 self-financing colleges were opened.

Box 5.8—Women in Tertiary Education

The government's focus on empowering women can be seen from the encouragement given to the starting of women's institutions, both under the auspices of the State and the private sector. So far, 120 arts and science colleges have been started, especially for women students. Wherever women's colleges are not available, the colleges located in their area admit women students to the extent of not less than 30 per cent of the total intake. Out of 53 government colleges set up for imparting basic technical skills, 10 are exclusively for women. In the field of technical education, there are 11 women's polytechnics and two

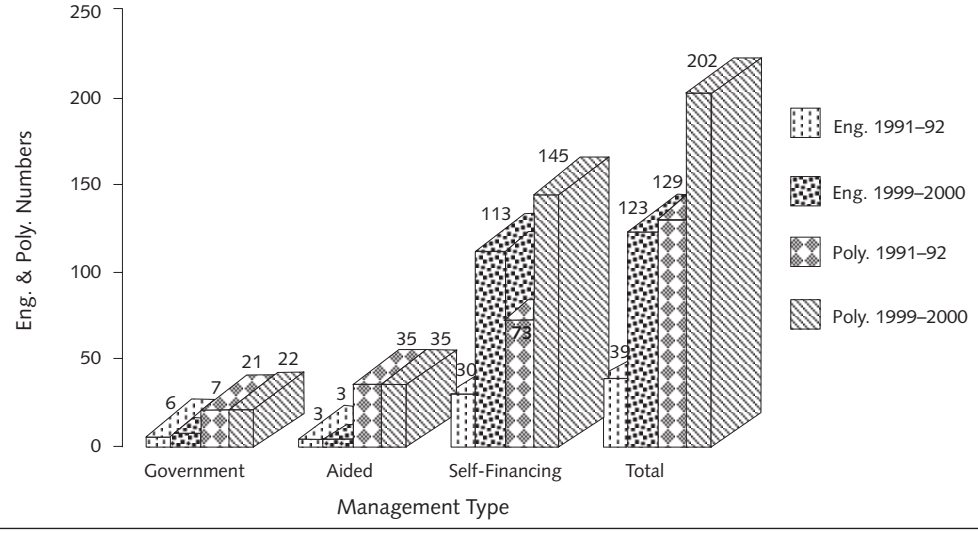
women's engineering colleges. In 1999–2000, of the total number of 25,119 students admitted to engineering courses, 7856 were women, constituting 31 per cent of the intake. In the sphere of university education, Mother Teresa Women's University was established in Kodaikanal in the eighties exclusively for women with the unique objective of furthering women's development through research and education. The Avinasilingam Institute of Home Science and Higher Education for Women, Coimbatore is a premier institution for women and has been accorded Deemed University status. Out of 20,648 college teachers, 8897 teachers are women, accounting for 43 per cent of the teaching staff in the State. It is, therefore, gratifying to note that the State Government is a strong advocate of women's education and its policies are directed towards opening up all possible avenues for the educational advancement of women.

In resorting to the self-financing mode, the government had in mind the fact, that of the 450,000 students covered in Class X and +2 streams, 80 per cent would opt for arts, science and commerce courses. In keeping with the government's policy of providing job-oriented courses, computer science, bio-chemistry, microbiology, business administration and catering are the main courses now offered not only in self-financing colleges but also in government colleges. As 35 per cent of the arts and science colleges are women's colleges, women have plenty of opportunity to go in for higher education. **However, the quality of education offered in self-financing institutions needs closer monitoring.**

Technical Education

The State has also witnessed a rapid growth of engineering institutions during the last decade. There are 123 engineering colleges in the State of which 113 are self-financing institutions. Of the 202 polytechnics in the State, 145 are self-financing (Figure 5.7). The intake of students in the engineering colleges and polytechnics has gone up rapidly during the last few years. In 1999–2000, 25,119 students were admitted to engineering colleges, of these 20,411 were absorbed by self-financing engineering colleges. The percentage of girls admitted was 31. The number of students admitted to polytechnics in 1998–9 was 29,346. However, the intake of girls in the polytechnics

FIG. 5.7—GROWTH OF ENGINEERING COLLEGES AND POLYTECHNICS, 1991–2000



Source: DTE.

was only 14.4 per cent (see Box 5.7). Interestingly, the intake of girls in government polytechnics is as high as 32.77 per cent while in self-financing polytechnics, the percentage is only 8.72.

Technical education in the State has expanded rapidly during the 1990s. While this by itself may be encouraging, it needs to be seen in the context of employment opportunities. As per the current trend, the number of engineering graduates will be 25,000 per year. Placement data of Anna University, a premier technical university in the State, indicate that 60 to 85 per cent of the students of various branches of engineering get absorbed through campus placement. The remaining students normally go abroad for higher studies. This happy position, however, may not be true of other engineering colleges in the State. **Though no data are available on the placement of engineering college students (outside Anna University), except for a few premier private engineering institutions in Chennai and Coimbatore, there does not appear to be any worthwhile intake of engineering graduates of other engineering colleges by the industry. The reason for this may be lack of quality teaching and consequently, poor quality of students graduating from these institutions. This is a matter for concern and the government may have to review its policy of permitting the setting up of new engineering colleges in the State in future.**

Public Expenditure on Education

This chapter is concluded by looking at the expenditure incurred on education. The total expenditure on general education in the State in the year 1999–2000 was Rs 41.39 billion, which forms 19.9 per cent of the revenue expenditure of Rs 207.03 billion. The trend reveals a minor drop in this percentage from 20.7 per cent in the previous year, something which could be explained by the large impact of the Pay Commission in 1998–9.

There are also various other areas under which expenditures are incurred on education. Some outlays are obvious—such as construction and maintenance of school buildings, running of schools for Adi-Dravidar children—while some components such as pensions to teachers of panchayat union and government schools are merged in the overall pension expenditure and cannot be differentiated. Adding the readily identifiable expenditure increases the overall outlay on education by Rs 1.18 billion, which then forms 22.9 per cent of the State revenue expenditure. It is also observed that expenditure on the revenue account makes up more than 97 per cent of the total expenditure, which is in keeping with trends across the country.

Two indicators which give an idea of public expenditure on education in the State are expenditure per capita and expenditure per student at various levels of education. The per capita expenditure (in current terms) for Tamil Nadu in 1997–8 was Rs 575.5 which was just higher than the all-India average of Rs 525.7. **The highest figures are seen in Kerala (Rs 754.3), while States such as Bihar (Rs 297.1) and Uttar Pradesh (Rs 316.4) have the lowest expenditure, suggesting a correlation between educational performance and per capita expenditure by the government.** Though Tamil Nadu's expenditure is not very high, it has managed to sustain its performance due to existing levels of infrastructure as well as strong presence of the private sector, especially in higher education.

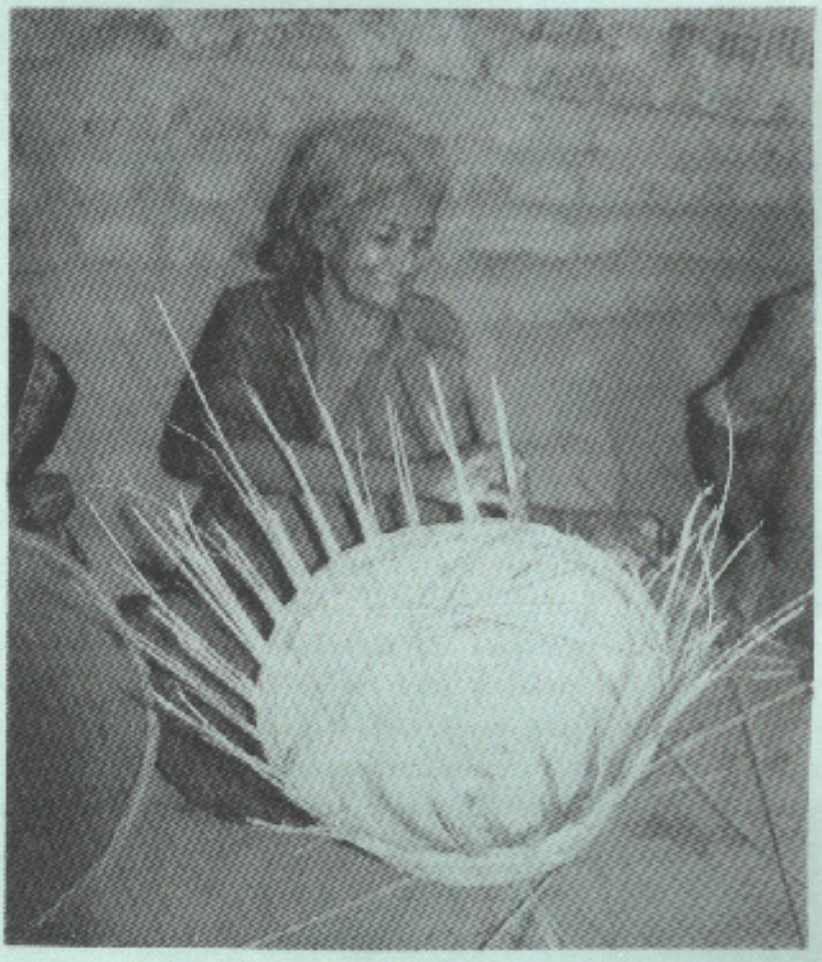
The per student expenditure by the government at various levels shows that while State spending is on par with all-India levels at the primary and secondary levels, the expenditure at the college-level is much lower. This once again confirms the strong presence of the private sector in higher education. International funding of education has also become significant.

Box 5.9—External Assistance for Elementary Education

Finding resources for financing education expenditure has always been a problematic area, particularly in the field of basic education. However the Jomtien Conference in 1990 gave a major boost to external

assistance for attaining the goal of basic education of all, especially, since the conference was co-sponsored by four funding agencies viz. the World Bank, UNDP, UNICEF and UNESCO. Out of the World Bank assistance for education, while primary education accounted for nearly 25 per cent during 1985–90, India got very little share of it. Tamil Nadu's only World Bank funded project at the tertiary level which materialized during the 1990s was the World Bank Technician Education Project which was essentially meant to strengthen government run polytechnics in terms of infrastructure and modernization of equipments. Except for this, no funding for education from international institutions has benefited the State during the last two decades. The growing commitment since the nineties among the international agencies towards basic education means that foreign aid is now an important source of finance for funding basic education. The DPEP jointly funded in 1993 by the European Union, World Bank, Overseas Development Agency etc., is a major project for extending basic education which has been sanctioned to the State along with several other States in the country. This exclusive focus on basic education in Tamil Nadu through the DPEP has begun to yield results. There is a need to propose projects for elementary education that can attract external assistance so that the goal of compulsory education for all, up to Class VIII may be achieved. Innovative projects for extending elementary education would attract the attention of international financial agencies. While privatization of higher education has been growing at a fast pace, elementary education will continue to remain the State's responsibility, particularly in rural areas and if funds have to be found for extending elementary education to all, projects seeking external assistance will have to be conceived and proposed to international agencies. Such projects should focus on the improvement of teacher quality, teaching materials, class room infrastructure and also creating social awareness among parents for educating their children.

6. Gender



Chapter

6

Gender

No report on human development can be complete unless and until it unravels gender inequities in human development, analyses the strengths and weaknesses of efforts to address these, and suggests possible strategies to bridge the gender gap in the future. The performance of Tamil Nadu with respect to female literacy, female IMR, female life expectancy and fertility rate shows that the status of women in Tamil Nadu is higher than that in other States barring Kerala. However, while women have improvements in absolute levels of literacy, enrolment and life expectancy, their position *vis-à-vis* men has remained unchanged (for example, persistent gender gap in literacy) or even worsened in many ways (for example the declining sex-ratio). Unfortunately, neither data nor comprehensive and up-to-date studies exist on the condition (absolute levels of well-being) and position (well-being relative to males) of women in Tamil Nadu with regard to most gender dimensions which can indicate the lack of concern for gender issues. The first part of this chapter, therefore, focuses on women's position in society while the second gives attention to women's role in the decision-making process, namely within political parties, the State Assembly and other elected and non-elected bodies. The final part focuses on institutional interventions aimed at tackling gender inequities.

Social Construction of Gender in Tamil Nadu

The gender based division of roles, responsibilities, resources and power is in turn determined by a variety of institutions: family, marriage, religion, schools, market and State. The rules of these institutions vary from country to country and community to community, and thus it is necessary to elaborate on some of the unique features of these institutions in the context of contemporary Tamil Nadu (For a historical overview see Box 6.1).

Family, Marriage and Religion

The family in most parts of contemporary Tamil Nadu is largely **patrilineal**, that is lineage and inheritance is from father to son, and **patrilocal**, that is women are brought as brides into the family of the male. The head of the family is normally a man unless by death, divorce (*de-jure*), sickness or migration when a woman assumes headship. In the past, most women in Tamil Nadu married a close kin within close distance from their natal family, and this practice is still common but slowly declining. As a result of this practice, women in Tamil Nadu have greater access to support from the natal family, and a greater say in decision-making as compared to women from elsewhere, for example northwest India (Dyson and Moore, 1983). However, the freedom to decide which

male kin to marry and at what age is not available to most women. In the past, dowry was common mainly amongst the upper caste communities. In the last two or three decades, the system of dowry has permeated most communities in Tamil Nadu in the form of jewels, money, vehicles and consumer goods. A sacred symbol of marriage for women in Tamil Nadu is the *thali*, which binds them into a relationship they are afraid to walk out of. Bigamy or affairs, on the part of men are condoned, while similar behaviour on the part of women leads to social ostracization. Like in most parts of India, there is strong pressure on women in Tamil Nadu to bear a male child.

Box 6.1—Socio-cultural Ethos and Efforts to Change It: A Historical Road Map

Historically, the socialization of women in Tamil Nadu emphasized women's domestic and reproductive roles. A *Kuruntokai* poem reads, 'men live by action, but women within the precincts of home by their men'. In the Sangam age, women had the freedom of choice of partner and marriage was a contract and not a sacrament. The post-Sangam age marked the introduction of caste divisions. Rituals turned marriage into a sacrament and severance was not possible. Chastity of married women became an obsession. Widowhood became a punishment through isolation and rituals. The medieval period saw the coming to the forefront of a few women like Karaikal Ammaiyar and Andal who achieved literary and religious heights. The rise of the bhakti movement provided liberating space for some women, but was also the cause for degradation of another set of women: the *devadasis*. In the later period of the Nayak dynasty, polygamy became common practice, further lowering the status of women (Sathianathier, 1956).

British rule weakened some of the cultural norms impeding equitable status of women. In 1821, the first girls school was opened in Chennai. Women were allowed to sit for university exams for the first time in 1897, through the Madras University. An attempt was made to recruit women teachers. Nevertheless, the percentage of girls or women enrolled in schools and universities remained very low, although Madras recorded a higher percentage of enrolment of girls in schools than other provinces. Around the same period, the social justice reform movement led by the reformer 'Periyar' E.V. Ramasami Naicker in Tamil Nadu played an important role in influencing public thought on marriage customs, widow remarriage, child marriage, sati etc. Another influential thinker was Dr Muthulakshmi Reddi. She played a key role in the passage of the Child Marriage Restraint Act in 1929 and the Devadasi Abolition Bill (introduced in the assembly in 1927 and enacted in 1947). The Women's Indian Association in Chennai led by Dr Annie Besant also played a key role in the granting of the right of suffrage to women in 1921 by the Madras Legislative Assembly. Dr Muthulakshmi Reddi was the first woman to sit in the Legislative Council. Women's participation in the freedom struggle also challenged gender norms, albeit within elite groups.

Education

Education plays a major role in social conditioning. In the past, school textbooks revealed a strong gender and class bias with women being predominantly shown in domestic roles, while men were shown as officers, farmers, shop owners and so on. The 1990s have seen a reform of school textbooks to make them more gender and socially sensitive, though a lot more remains to be done. Segregation of male and female students is a common practice in schools even today. Differences in school uniform and a change in uniform for girls after they attain puberty are also common. Promotion of different extra-curricular and sports activities for boys and girls also instills gender differences from a young age. Gender bias of teachers, who play a key role in socialization, is also not uncommon.

Status of Women in Tamil Nadu

Usually, the status of women is examined in the absolute sense by looking at where women stand *vis-à-vis* health[1], education, income and social indicators. This section focuses more on their position in society, that is, compares where they stand *vis-à-vis* men, and second, integrates both the 'rights' and 'development' framework while choosing indicators.

Gender and Rights to Labour and Livelihood

The secondary position of women in Tamil Nadu is, amongst other things, reflected in the extent to which women have control over their own labour: whether to work, what work to do, at what wages and under what social conditions. Work participation, gender composition and nature of work are dealt with under the chapter on labour.

Gender Division of Labour

Gender division of labour is predominant, under which the gender of the person rather than their competencies or inclinations shape task-allocation. While both men and women in Tamil Nadu are found more in agriculture than in manufacturing and services, the agricultural labour force is on the whole more 'feminine', while the labour force in manufacturing and services is more 'masculine'. For example, in the manufacturing and service sectors women constitute only 25 per cent of technical and professional workers (1991), a slight increase from 20.5 per cent in 1981. Among administrative and managerial workers, women's share was 4.4 per cent in 1991, up from 2.3 per cent in 1981 (Government of Tamil Nadu, 1998). On the other hand, women constitute more than 50 per cent of the agricultural workforce.

Box 6.2—Time Use Studies

A recent time use survey in Tamil Nadu, covering 11 districts, indicates the pervasive nature of the division of labour. The weekly average time spent by men on System of National Accounts (SNA) and extended SNA activities was 25.32 hours and 1.90 hours while that of women was 11.29 hours and 18.13 hours respectively. It appears that the extended SNA activities tend to keep women away from important components of economic activity (marketing, trading, banking) and reduce their mobility. These figures also suggest under-employment (productive) of women in Tamil Nadu. Within the so-called SNA or productive activities as well, there is a marked gender based division of labour.

Along with this segmentation, there is a differential valuation of work, with women's work being valued less than that of men. Such segmentation of tasks is also common in the manufacturing and tertiary sectors. In the service sector women are, for example, found more in low-end jobs such as domestic work, teaching, nursing and secretarial service, while the high-end tasks like advertising, etc., are carried out by men. The same is true of manufacturing where women are found in lower jobs such as beedi manufacturing, manual labour in cotton textiles, garment making, cashew nut processing, fish and food processing and the match industry (see Box 6.2).

Terms and Conditions of Women's Work

Women's involvement in the informal sector is characterized by a high incidence of casual labour with women mostly doing intermittent jobs at extremely low wages or working on their own account with uneconomical

[1]For example, health indicators will include not just gender disparities in access to health care, but also indicators on reproductive and sexual rights.

returns. In the case of wage-workers, exploitation, in the form of long hours, unsatisfactory work conditions and health hazards, is common because supply of labour far exceeds demand. Notable examples include sub-contracting to women at home in the beedi and match industries.

In both the formal and informal sectors, sexual harassment is prevalent, but it is higher in the informal sector. Studies indicate that when faced with such harassment poor women either succumb to the pressures of the employer or lose their jobs. In rural areas, caste and gender interlock and thus women labourers from SC communities are harassed more than labourers from other communities. The presence of few women in mixed-cadre trade unions at leadership positions and prevalence of few all womens' trade unions and associations have barred women from asserting themselves against such harassment.

Girl Child Labour

Girl children are a significant part of the rural labour force. The 1991 Census data reveal the presence of over 606,000 child labourers in the main and marginal worker categories, with a large majority being girls. The girl child in rural areas is more prone to child labour than her counterpart in urban areas. This is particularly true of girls from the SC community. In rural areas, 10 per cent of girl children in the age group 5–14 are workers and, therefore, child labourers, as against 4 per cent of male children (NSSO, 49th round). In urban areas in the age group 5–14, 2.4 per cent of female children are classified as workers as against 5.9 per cent for boys. Besides the enumerated child workers, there is a class of invisible child workers, particularly girl children, who are in popular perception 'drop outs', but in reality workers at home. Fifty per cent of girls in the age 10–14 belong to this category.

Recent statistics contradict the popular myth that girl child labour is concentrated in pockets of North Arcot or Virudhunagar. The problem is spread all over the State with districts like Dharmapuri, Salem, Periyar, Madurai and composite North Arcot showing high incidence of girl child labour (Jayaraj *et al.*, 1997).[2] Beedi rolling, gem cutting, handlooms etc., are cottage industries in which girl children largely work. There are also cases of bonded labour where children are forced to work to settle loans taken by the parents.

Access and Control over Resources

Assets

No State (or national) level statistics are available on the ownership of land. A study of land ownership amongst 161 households in Dindigul district carried out by MSSRF[3] revealed that in 94 per cent of the households, men owned the land. Women who owned land were predominantly those heading households or the only child of their parents (Murthy, 2000). Again no gender-disaggregated statistics are available in this regard. The patrilineal customary system of inheritance, patrilocal system of marriage, the lack of knowledge of women of their legal rights and dependence of women on their male siblings for support in the event of marital conflict all come in the way of women claiming their rights (Agarwal, 1994).

Credit and Markets

The fact that women engage less in paid work and have less access to formal education than men further constrains their ability to access credit. They also do not have valuable independent assets to make them credit worthy. Other constraining factors are distance from banks, gender bias of bankers, working time of banks and the lack of resources to meet formalities.

[2]North Arcot no longer exists as a district as it has been bifurcated.

[3]M.S. Swaminathan Research Foundation, Chennai.

Box 6.3—Tamil Nadu Women's Development Project (*Mahalir Thittam*)

The Tamil Nadu Women's Development Project (TAWDP) was initiated in 1989–90, with the assistance of International Fund for Agricultural Development (IFAD). Initially, it was launched in eight districts (then five districts). The focus was on the formation of SHGs of poor women, to improve their economic position.

The success of the project led to the announcement of Mahalir Thittam (Ma Thi) in 1996 extending the coverage to the entire State in a phased manner. Currently, the coverage extends to rural areas of 28 districts of the State except Chennai. In the budget for 2000–1, this project has been extended to cover all town panchayats and municipalities in the districts. This project is based on a long-term partnership among three agencies—the State government, NGOs and NABARD/other banks and financing institutions. Recently, this project was renamed as Bangaru Ammaiyaar Ninaivu Mahalir Thittam (in memory of the Late CM Arignar Anna's mother).

This project is participatory, people-centred and process-oriented and intends to promote social empowerment of poor and disadvantaged women through equal status at household, community and village level, increased status in democratic institutions and helping them to overcome social, cultural and religious barriers. Further this project supports economic improvement through financial self-reliance of women, greater access to financial resources and reduced vulnerability to crisis situations like famine, floods and riots. Both social and economic empowerment are complemented by capacity building through better awareness on health, education, environment and legal rights, better communication skills and better leadership skills.

As on 31 March 2000, 26,220 SHGs had been formed in 28 districts, with a membership of around 0.4 million women and with savings of Rs 334.3 million. The objective is to cover about 1 million poor women through 60,000 self reliant and sustainable SHGs in a period of five years. By March 2003, over 126,100 exclusively women's SHG's were operating with a membership of 2.15 million women.

The future plans of Ma Thi include consolidation of SHGs, targeting uncovered habitations, focus on sustainability and entrepreneurship training for NGO staff.

Source: *http://www.tamilnaduwomen.org*

In the past, household-focused poverty alleviation programmes such as Integrated Rural Development Programme (IRDP) sought to reserve 50 per cent of credit for women. Against this target, 38.46 per cent of IRDP loans were channeled to women in 1998–9. However, women's access to credit did not always imply that they exercised control. In many cases, a wife was just a channel to get access to subsidized credit which her husband eventually utilized (Kabeer and Murthy, 1997). In extreme cases, women had to struggle to repay the loan on their name, which had been used or misused by their husband. Learning lessons from the past, the Tamil Nadu Government has evolved the Tamil Nadu Women's Development Project (*Mahalir Thittam*) which is an SHG based scheme with a focus on the economic empowerment of women.

As regards access to markets, it is most often the husband who is involved in the marketing of products/goods in the case of agriculture, family business or service, and as a result women lack knowledge of markets which includes information and dynamics of pricing, quality, marketing channels, etc.

Income

There are no macro-level statistics on women's control over their income or their family income. A micro-level study of 34 households carried out in three districts by the International Fund for Agricultural Development (IFAD) mission of the TAWDP in 1999 reveals that women's control over the income they earn varies with their

age, household headship, and nature of activity (IFAD, 2000). Women's control over their income is higher when they are engaged in wage labour or where marketing is controlled by them (for example milk vending, flower vending, fish vending), and less so when marketing is controlled by the men. However, where the women have some control over the money they earn, they usually spend the bulk of it on the family's basic needs, especially food, health care and education, unlike their husbands. Moreover, the issue of control over household income is a crucial factor affecting nutritional levels of women (in particular pregnant women), infants and children, and the well-being of the family in general.

Common Property Resources

Poor women in Tamil Nadu, like all over the developing world, have a gender-specific form of interaction with the environment. As per social norms, women are concerned with the provisioning and care of the household. Scarcity and pollution of water and lack of fuel wood affect poor people more than the better-off, and amongst them poor women more than poor men. Micro-studies in Masinagudi block of the Nilgiris reveal that the erosion of traditional rights of STs to forest produce in the colonial period led to a decline in food security for ST families, particularly of women and girl children. While many of these common property rights have been denied even in the post-independence period, a single Act in the 1990s, of issuing permits to STs to collect forest produce, has expanded the incomes and food security of women (MYWA, 2001).

Feminization of Poverty

Number of Women and Men in Poverty

More women than men experience poverty in Tamil Nadu, like in most parts of the world. As poverty estimates focus on household as the unit, there is no macro estimate of the number of women in poverty *vis-à-vis* the number of men in poverty. Micro-level evidence from Madurai, Ramnathapuram, Dharmapuri and Dindigul districts indicates, however, that the proportion of women-headed households (WHHs) in poverty is higher than the proportion of male-headed households in poverty[4] (IFAD, 2000). Tamil Nadu stands fourth in terms of the percentage of WHHs in India. This estimate could be on the lower side as it may not take into account *de facto* factors leading to headship by women (due to migration, sickness of husbands, alcoholism). The proportion of SC women and women agricultural labourers (often overlapping categories) in poverty is much greater than the proportion of other caste groups in poverty.

Differential Impact of Poverty

Women and girls in poor households experience poverty more intensely than men and boys within the same households. This is because of intra-household inequalities in access to food, health care, education and the rest. A study carried out amongst 161 households in Dindigul district indicates that gender differentials in access to food prevailed in 60 per cent of the households. Gender disparities were also prevalent in access to primary health care and primary education, but to a less extent. As expected, gender disparities existed in 60 per cent of households with respect to higher education. Disparities were also noted with respect to the workload of poor women and men. Poor women find no time to rest in a day, in contrast to at least two to three hours of leisure time for the men (Murthy, 2000). A surprising finding was that the gender of the person heading the household did not make any difference to the extent of disparity with respect to basic needs. Faced with poverty, women often adopt gender specific negative coping strategies which include cutting down their own purchases of new clothes, mortgaging their jewellery, marrying their daughters to older men getting married for a second time etc. (DeW, forthcoming).

[4]With the qualifier that all women headed households are not in poverty.

Gender-specific Causes of Poverty

Finally, women in Tamil Nadu, like elsewhere, slip into poverty in gender-specific ways and gender specific factors prevent them from coming out of poverty. Getting married into a poorer family for want of dowry and breaking down of marriage are two gender specific reasons for women slipping into poverty. Women's lack of independent rights to land, house and productive rights, the gender based stratification of the labour market, their greater dependency on wage labour, lower wages as compared to men, lesser control over family income and lesser access to formal credit all come in the way of their overcoming poverty. Women headed households not only face many of these constraints, but often also a smaller family size, lesser access to adult labour and a lack of social support, especially from their husband's kin.

Gender and Rights to Health

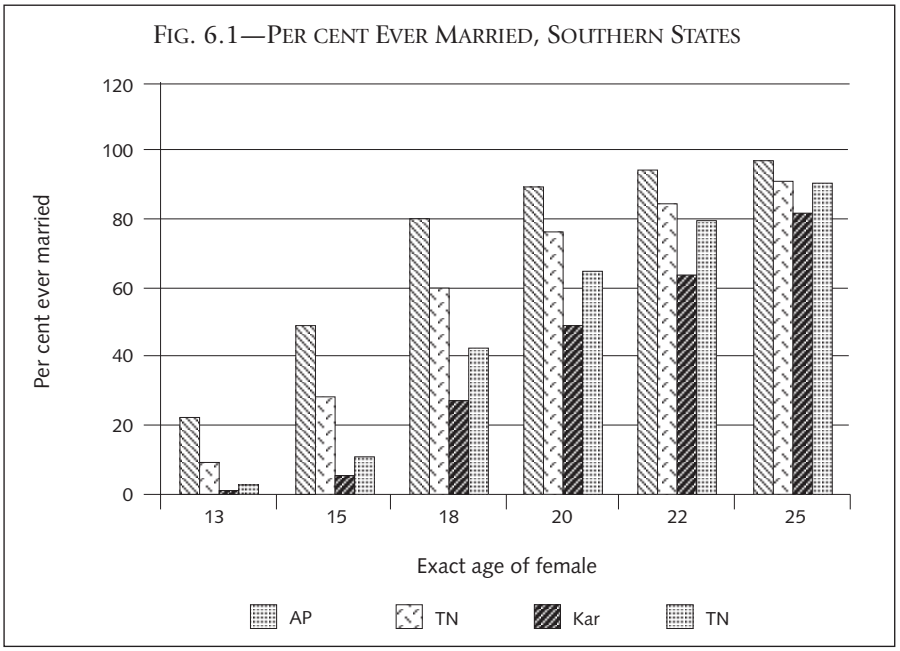
Gender differences in mortality can be attributed to the high degree of son-preference and low status of females in Tamil Nadu. As a consequence, there are substantial disparities in access to food and health care, and in extreme cases female foetuses and infants are even killed.

Micro-level studies indicate that there is a substantial difference between the desired and actual age of marriage by women. One half of women marry at or before 18 years of age, and have little choice in whom they want to marry. Twenty-five per cent of Tamil Nadu women marry their first cousins and at least 50 per cent of women marry some relative or the other. Post-natal mortality is higher among children born of consanguineous marriages, and hence this practice is a health issue. Ironically, such marriages give women a comparatively greater amount of protection from marital problems as compared to women in the northern or western parts of India. Another concern is that 39.6 per cent of pregnancies in Tamil Nadu occur in the age group of 15–19 as per SRS estimates for 1994 posing risks for both the mother and the child. Figure 6.1 shows age of marriage in the southern states.

Gender, Morbidity Profile and Access to Health Care

There are gender differences in the morbidity profile of women and men. Fifty-six per cent of women in the 15 to 49 age group in Tamil Nadu have anaemia as against 22 per cent in Kerala and 42 per cent in Karnataka (NFHS,

FIG. 6.1—PER CENT EVER MARRIED, SOUTHERN STATES



Source: NFHS-2 (1998–9).

1998–9). Respiratory problems, reproductive health problems and cancer are higher amongst women than men, while heart ailments are higher amongst men than women. Part of these differences can be attributed to the gender-based division of work, and part to the lack of reproductive and sexual rights of women. Given the fact that women are responsible for cooking, and firewood is the single largest source of energy, chronic lung diseases and cancer in women are some of the common fallouts (Swaminathan, 1997). The posture of women labourers involved in transplanting and weeding also leads to a variety of health problems. Women in the informal sector, namely the beedi, lace and agarbatti industries, are known to suffer from a variety of eye problems, and those working in beedi making units, dyes and quarries also suffer from a variety of respiratory problems and skin ailments. In all instances, the vulnerability of pregnant women is higher than others, leading to chances of miscarriages. Also, while morbidity levels amongst women are higher than men, their access to quality health care is lower than men.

Box 6.4—Wife Battering in Chennai

In a study of 90 battered women in Chennai city, all the women, irrespective of education or class backgrounds, experienced various forms of violence—ranging from severe physical battering to psychological and sexual abuse. Physical violence constituted 50 per cent of the total cases of abuse while psychological violence formed 48 per cent and included economic deprivation, desertion, restrictions on mobility and so on. On an average, every woman experienced twelve different forms of abuse with varying frequencies. Almost all the women reported being slapped/beaten, kicked and insulted in the presence of others. Seventy-nine per cent of the women experienced violence on an everyday basis. Almost always, the causes for battering were multiple. Suspicion of infidelity, alcoholism, dowry and instigation by in-laws formed the main causes of violence in the case of most respondents. Verbal retaliation and independence and confidence of some women posed a real threat to men and heightened their vulnerability to increased violence. Significantly, the type of marriage that the respondents had opted for had no bearing on either the onset, frequency, or cause of violence.

Source: 'Violence Against Women: Wife Battering in Chennai', *Economic and Political Weekly*, 17–24 April 1999.

Gender and Rights to Bodily Integrity

Incidence of Violence against Women

Women in Tamil Nadu face a variety of forms of violence, some of which are similar to those across the globe: female infanticide, female foeticide, rape, wife battering, eve-teasing, molestation, pornography and trafficking in women. Others are specific to the Indian or South Asian context such as female infanticide/foeticide, child-marriage, forced marriage, dowry-related harassment and witch hunting. These forms of violence take place in a variety of institutional contexts: family, work place, schools and colleges, temples, roads, hospitals and even prisons. Violence against women is largely under-reported due to the tendency of the society to victimize the victim, as well as the feeling that violence within the family is a private issue. As a result, the statistics on violence perhaps underestimate the real magnitude of gender-specific violence. Furthermore, some forms of violence like marital rape are as yet not legally recognized as violence, hence official records do not cover all forms of violence. As per the records of the Director General of Police, the incidence of reported crimes against women has gone up from 2494 in 1990 to 5074 in 1998. The rise is particularly sharp in the number of cases of dowry deaths, molestation, eve-teasing, torture and kidnapping of women. Molestation and eve-teasing account for 65 per cent of reported cases of crimes against women. Unfortunately, disaggregated statistics are not available on the incidence across different groups.

Causes and Consequences of Gender-based Violence

There are several causes of violence against women. The perception that after marriage women are their husband's property is strong in Tamil Nadu. Suspicion of infidelity, infertility (of the couple), alcoholism, dowry and instigation by in-laws are some of the immediate causes of violence against women, signalling the deep-rooted patriarchal values that underlie the same. The result is that wife beating is considered normal, even by women themselves. Portrayal of women in the media as sex objects and different forms of violence within films have also played a major role in perpetuating and increasing violence within and outside the family. Violence has significant effects on the mental and physical health of women. Studies in Tamil Nadu show that foetal wastages (abortions) often occur due to battering (Jejeebhoy, 1998). This is, however, yet to be recognized as a public health issue in Tamil Nadu. Violence leads to income loss for women and break-up of families, both of which also affect children adversely.

Decision Making and Participation

One of the basic objectives of human development is expanding choices, and doing so for all sections of people. An important aspect of this is enabling all sections of the population to take part in administrative and economic decision making. While such participation might not happen in the short-run considering the social construction of gender (as detailed above), it can play an important part in the long-run. This section looks at selected indicators to explore the extent to which decision making and participation in Tamil Nadu are widespread and the extent to which women enjoy the same opportunities as men. Wherever possible, comparisons with the all-India position and with other countries have been made.

Experiences from most countries in the world have shown that a more broadbased participation in decision making influences decisions in a positive way. Gender differences, however, continue to exist across the globe. In some ways, in fact, India has taken the lead as far as constitutional and statutory initiatives are concerned. For example, the recent sharp increase in the participation of women in grassroots democracy has paved the way for women's increased mobility outside their homes, creating a space to voice their concerns. While there is still a long way to go for full participation, the 73rd and 74th Constitutional Amendments, reserving one-third seats in local bodies for women, have facilitated women's participation in the political process. There is, however, a need for the administrative and political machinery to develop a sensitivity to women's aspirations and priorities and to make them mainstream and not marginal concerns.

Levels and Trends in Political Participation

Voting

Voting trends are an indicator of participation in the political process. Over the last fifteen years, general elections to the State Assembly have been held in 1984, 1989, 1991 and 1996. As Parliament elections coincided with State Assembly elections, voting trends have only been examined for the State Assembly. There were 31.14 million persons (both rural and urban) listed as electors in the State in 1984. This number increased to 41.93 million in 1996 (see Table 6.1).

TABLE 6.1—NUMBER OF ELECTORS IN TAMIL NADU *(millions)*

	Rural			*Urban*			*Total*		
Year	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
1984	7.35	7.38	14.73	8.29	8.09	16.38	15.64	15.47	31.11
1989	8.43	8.40	16.83	9.51	9.13	18.64	17.94	17.53	35.47
1991	9.50	9.44	18.94	10.72	10.26	20.98	20.21	19.70	39.91
1996	9.58	9.60	19.18	11.57	11.18	22.75	21.15	20.78	41.93

Source: Government of Tamil Nadu, Election Department.

Data on the number of electors and percentage voting in the last four assembly elections of Tamil Nadu are tabulated by place of residence (rural, urban), by sex (male, female) and also by district. An analysis of the voting trends in the last four assembly elections shows that the female voting percentage has been similar to the male voting percentage. While male voting percentages range between 65.29 and 74.36 per cent, female percentages range between 63.85 and 73.03 per cent. The overall voting percentage (for both males and females) declined from 1984 to 1991 but again increased between 1991 and 1996. The pattern is the same for rural as well as urban areas (Table 6.2).

TABLE 6.2—VOTER TURNOUT

	Rural			*Urban*		
Year	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
1984	73.8	71.2	72.5	74.8	72.2	73.5
1989	75.0	70.0	72.7	72.6	68.4	71.1
1991	66.0	63.0	64.5	64.5	61.8	63.1
1996	70.4	66.6	68.5	67.5	63.0	65.3

Source: Election Department, Government of Tamil Nadu.

Data from the Election Department, Government of Tamil Nadu, shows that there are great inter-district as well as temporal variations. Some districts such as Nagapattinam had a voter turnout of over 80 per cent in the 1980s. The majority, however, had State-average turnouts. Interestingly, districts with big urban centres such as Chennai and Coimbatore have consistently had below average turnouts perhaps suggesting apathy amongst urban voters, something borne out by the higher voting percentages in rural areas (Table 6.3).

TABLE 6.3—DISTRICT-WISE VOTING PERCENTAGES

District	*Voter Turnout*				*Voter Turnout*				*Percentrage of Electors Voted*			
	Rural—Female				*Urban—Female*				*Total*			
	1984	*1989*	*1991*	*1996*	*1984*	*1989*	*1991*	*1996*	*1984*	*1989*	*1991*	*1996*
Chennai					62.1	57.4	51.5	54.9	61.8	60.0	53.7	57.8
Kancheepuram	72.6	82.5	60.4	65.0	72.0	67.4	53.1	51.7	72.8	74.8	60.5	62.4
Thiruvallur	74.8	67.4	64.1	67.0	70.2	55.0	59.3	56.7	75.0	70.6	63.7	65.8
Vellore	75.2	73.4	65.2	67.6	75.9	72.3	61.8	65.0	76.5	75.4	65.5	68.5
Tiruvannamalai	74.7	74.9	69.3	69.8	76.7	77.2	70.0	69.8	77.1	76.6	70.5	71.9
Villupuram	73.8	72.6	67.0	68.6	73.6	74.9	65.2	67.1	74.4	76.0	67.4	69.0
Cuddalore	73.7	74.9	68.3	68.8	77.6	75.4	67.2	69.4	76.4	77.0	68.9	70.0
Salem	67.2	65.6	63.6	64.5	72.5	66.3	60.0	63.0	71.7	69.8	64.6	66.2
Namakkal	61.2	64.3	59.5	61.6	70.7	66.0	58.7	62.4	69.9	68.8	62.5	66.0
Dharmapuri	67.4	70.1	58.1	61.1	69.3	66.9	59.7	61.7	70.2	72.2	62.2	65.2
Coimbatore	58.8	59.0	61.9	64.6	84.7	79.4	60.0	63.0	72.9	71.9	63.8	68.2
Erode	64.6	63.9	64.9	63.3	87.7	81.7	61.6	65.0	79.3	77.2	66.4	68.8
Tiruchirappalli	0.0				74.5	66.5	57.8	61.4	38.0	35.1	30.3	32.2
Karur	75.1	73.1	61.7	66.3	76.7	75.3	58.6	65.3	77.8	76.3	62.2	67.7
Perambalur	77.2	79.3	57.8	64.2	75.2	70.8	59.3	65.3	77.1	76.0	61.5	67.1

(Contd...)

(Table 6.3 Contd.)

District	Voter Turnout Rural—Female				Voter Turnout Urban—Female				Percentrage of Electors Voted Total			
	1984	1989	1991	1996	1984	1989	1991	1996	1984	1989	1991	1996
Pudukkottai	79.3	77.7	59.1	64.7			50.7	57.6	39.7	39.2	57.9	63.4
Thanjavur	75.5	78.8	62.7	67.0	75.1	68.6	66.3	68.6	78.4	76.7	66.3	70.4
Tiruvarur	81.3	77.2	66.4	74.7	80.2	75.2			80.9	76.3	34.7	37.3
Nagapattinam	82.7	82.4	68.5	73.1	83.6	81.3	59.4	66.6	83.9	83.7	66.4	70.1
Madurai	72.0	65.4	62.5		69.4	57.8	58.3	73.6	71.3	65.6	62.9	30.2
Theni	69.3	65.9	70.5	70.4	71.2	67.1	69.9	71.8	71.0	69.6	75.5	73.4
Dindigul	70.5	69.6	72.0	74.0	71.3	68.7	61.5	67.6	69.8	71.6	68.7	72.3
Ramanathapuram	68.0	64.4	66.9	72.6	77.9	73.6			72.4	68.6	34.8	36.0
Virudhunagar	71.1	67.0	63.8	66.8	73.5	68.9	63.5	65.7	73.1	70.1	62.5	
The Nilgiris	0.0		55.9	60.1	68.4	65.1	62.0	67.1	35.3	34.3	57.9	61.5
Sivagangai	71.1	71.4	61.9	68.7	74.7	69.9	61.8	67.0	72.1	69.4	64.1	69.8
Thoothukudi	70.9	67.5	55.6	60.2	73.7	68.5	56.2	63.3	72.7	69.9	57.6	63.5
Tirunelveli	67.6	63.8	60.3	65.3	35.7	61.2	62.7	66.4	58.4	65.5	63.2	67.3
Kanniyakumari	66.3	66.3	57.8	58.2	66.6	64.7	56.6	60.1	68.3	65.8	58.6	60.9
Tamil Nadu	71.2	70.4	63.0	66.6	72.2	68.4	61.8	63.0	73.0	71.9	63.8	66.9

Source: Election Department, Government of Tamil Nadu.

Decision Making—Parliament and State Assembly

As women constitute around half of the world's population, it is important to reflect on international attempts made to assess the threshold share of women in elected offices that would make a significant, irreversible difference in combating the unequal access to decision making in the public domain. The UNDP HDR stipulates that 30 per cent should be a minimum (UNDP, 1995). Very few countries have come anywhere near this minimum goal. Nordic countries lead the way in this regard. For example, in countries like Denmark, Finland, the Netherlands, Norway and Sweden, the 30 per cent threshold has been crossed either at the parliament or cabinet level.

However, in the case of Tamil Nadu (as no doubt in other States as well), the situation is very different. Despite the fact that differences in participation in voting among men and women are not considerable, gender difference in achieving positions of power through elections is higher. Table 6.4 captures the trend over time with regard to female members in both the Lok Sabha and the Tamil Nadu Assembly. As seen from the table, the percentage of female members of parliament (MPs) has been consistently below eight per cent. No improvement is seen over time. The gender gap is erratic for All India with female percentages ranging between a low of 2.5 per cent (1996) to a high of just 9.09 per cent (1984), with no discernible trend. There has only been one woman minister at the Centre from Tamil Nadu, in 1984.

TABLE 6.4—MEMBERSHIP IN LOK SABHA AND CABINET

Year	Lok Sabha Members				Ministers in the Cabinet			
	Male	Female	Total	% Female	Male	Female	Total	% Female
1984	500	42	542	7.75	40	4	44	9.09
1989	502	27	529	5.10	39	2	41	4.88
1991	484	37	521	7.10	52	6	58	10.34
1996	503	40	543	7.37	39	1	40	2.50
1998	496	43	539	7.98	42	4	46	8.70

Source: Government of Tamil Nadu, Election Department.

Table 6.5 gives details for the Tamil Nadu Assembly for the same years. While overall, the situation has been similar, the 1991 assembly had 13.25 per cent women or 31 female members. The percentage of female ministers has been higher than their membership on average, ranging between 5.56 per cent in 1989 and 7.41 per cent in 1996. A study of district-wise representation of women shows that Tiruvannamali, Nilgiris, Karur, Perambalur, Nagapattinam, Pudukkottai, Theni and Ramnathapuram have not sent a woman representative to the assembly in the last four elections.

TABLE 6.5—MEMBERS IN TAMIL NADU ASSEMBLY AND CABINET

	No. elected as members				*No. represented as ministers*			
Year	*Male*	*Female*	*Total*	*% Female*	*Male*	*Female*	*Total*	*% Female*
1984	226	8	234	3.4	22	2	24	8.3
1989	224	10	234	4.3	17	1	18	5.6
1991	203	31	234	13.2	25	2	27	7.4
1996	224	10	234	4.7	25	2	27	7.4

Source: Government of Tamil Nadu, Election Department.

Decision Making—Local Bodies

With respect to political participation in local bodies, the situation is more favourable in terms of women's participation. The 73rd and 74th Constitutional Amendments in 1992, which went a long way in re-activating decentralized democracy in India, also made it mandatory to reserve one-third of seats in local bodies for women. This set the stage for serious participation by women in the political process in India, not as passive voters or party workers alone, but also as candidates.

Local body elections in both rural and urban areas were held in Tamil Nadu in 1996. Table 6.6 shows that the total number of candidates elected to rural local bodies was 19,448 (620 district-level panchayat seats, 6395 block-level panchayat union seats and 12,433 village panchayat seats). Of these 7040 were women, constituting 36.20 per cent of the total (37.26 per cent for district panchayats, 37.90 per cent for panchayat unions and 35.27 per cent for village panchayats).

The story is similar for urban local bodies. The total number of seats was 3919 (3445 for municipalities and 474 for municipal corporations). Of these 1311 went to female candidates constituting 33.45 per cent (1151 in municipalities accounting for 33.41 per cent and 160 in municipal corporations accounting for 33.76 per cent).

TABLE 6.6—REPRESENTATION IN RURAL AND URBAN LOCAL BODIES IN TAMIL NADU, 1996

Areas	*Female*	*Male*	*Total Seats*	*% Female*
Rural				
District Panchayat (Ward Members)	231	389	620	37.26
Block Level Panchayat Union (Ward Members)	2424	3971	6395	37.90
Village Panchayats (Presidents)	4385	8048	12,433	35.27
Total Rural	7040	12,408	19,448	36.20
Urban				
Municipalities (Councillors)	1151	1294	3445	33.41
Corporations(Councillors)	160	314	474	33.76
Total Urban	1311	2608	3919	33.45

Source: Government of Tamil Nadu, State Election Commission.

Electability

Comparing contested with elected figures indicates 'electability' or 'wastage'. Available data for assembly elections is given in Table 6.7. On an average, 4.72 per cent of those who contested overall were only actually elected. The gender-wise break-up shows that while male percentage elected was 4.66, female percentage elected was 6.67 (1996). The rural–urban break-up was as follows: higher in urban areas for men (6.27 per cent for males, 3.80 per cent for females) and the reverse in rural areas (3.62 per cent for males, 9.86 per cent for females). Thus, overall, women were no less electable than men.

TABLE 6.7—PERSONS CONTESTED AND ELECTED IN ASSEMBLY ELECTIONS BY SEX, 1984–96

Year	*Contested*			*Elected*			*Elected as %*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
1984	1815	57	1872	226	8	234	12.45	14.04	12.50
1989	2261	105	2366	224	10	234	9.91	9.52	9.89
1991	1347	37	1384	203	31	234	15.07	83.78	16.91
1996	4808	150	4958	224	10	234	4.66	6.67	4.72

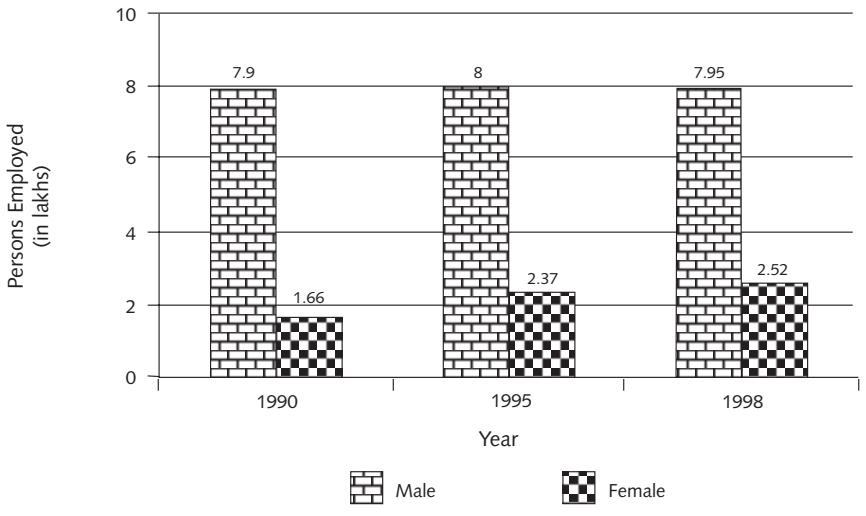
Source: Government of Tamil Nadu, Election Department.

Trends in Employment

Government

Women's participation in government is often used as an indicator of increasing decision making power and participation. In industrial countries, women constitute 13 per cent of government employees. The all-India figures for central government employees show an upward trend in respect of female percentages from 1990 to 1998, from 10.34 to 13.44, comparable to developed countries. In the context of Tamil Nadu (Figure 6.2), female employment is even higher, at 17 per cent in 1990 and 24 per cent in 1998. Female employment figures in local bodies went up from nearly 45 per cent in 1990 to over 59 per cent in 1998 (Table 6.8). These substantially

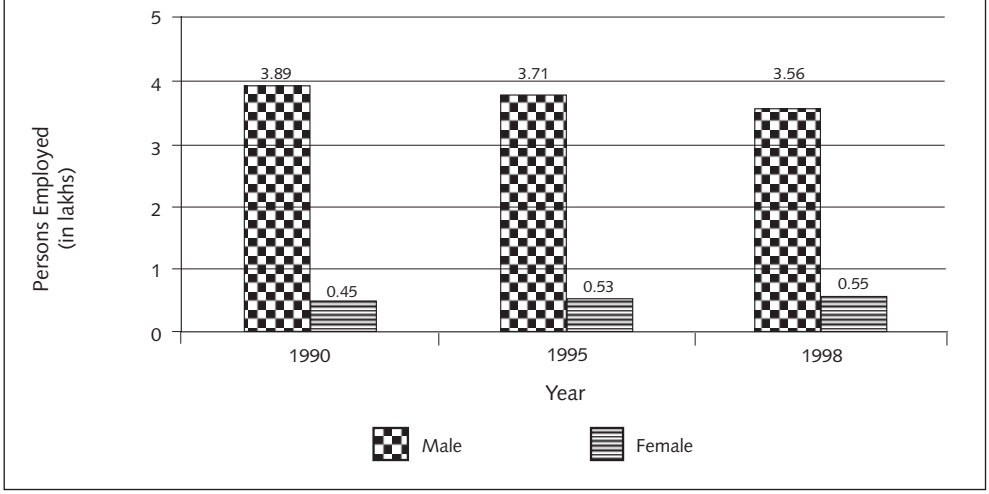
FIG. 6.2—EMPLOYMENT IN STATE GOVERNMENT



Source: Director of Employment and Training, Government of Tamil Nadu.

higher percentages in Tamil Nadu are due to higher female employment in educational institutions and welfare services in particular as compared to the all-India situation. Thus, though men continue to outnumber women in government and quasi-government positions, there is a smaller gender gap in Tamil Nadu as compared with All India.

FIG. 6.3—EMPLOYMENT IN CENTRAL GOVERNMENT



Source: Director of Employment and Training, Government of Tamil Nadu.

TABLE 6.8—TREND IN FEMALE EMPLOYMENT IN CENTRAL/STATE/LOCAL BODIES

	Central Government, No. of persons employed (in lakhs)				*State Government, No. of persons employed (in lakhs)*				*Local Bodies, No. of persons employed (in lakhs)*			
Year	*Male*	*Female*	*Total*	*% of female*	*Male*	*Female*	*Total*	*% of female*	*Male*	*Female*	*Total*	*% of female*
1990	3.89	0.45	4.34	10.34	7.90	1.66	9.56	17.40	0.85	0.70	1.55	44.99
1991	3.83	0.47	4.30	10.93	8.00	1.80	9.80	18.39	0.73	0.96	1.69	56.87
1992	3.84	0.50	4.34	11.53	7.39	1.79	9.18	19.48	0.76	1.06	1.82	58.09
1993	3.78	0.50	4.28	11.60	7.99	2.03	10.02	20.29	0.71	1.00	1.71	58.21
1994	3.73	0.52	4.25	12.17	7.87	2.26	10.13	22.31	0.73	1.00	1.73	58.11
1995	3.71	0.53	4.24	12.49	8.00	2.37	10.37	22.83	0.71	1.01	1.72	58.72
1996	2.99	0.50	3.49	14.24	7.74	2.80	10.54	26.59	1.32	1.10	2.42	45.54
1997	3.65	0.55	4.20	13.14	8.07	2.48	10.55	23.48	0.72	0.99	1.71	58.13
1998	3.56	0.55	4.11	13.44	7.95	2.52	10.47	24.09	0.70	1.00	1.70	59.14

Source: Directorate of Employment and Training, Government of Tamil Nadu.

Co-operatives

As per data from the Registrar of Cooperative Societies, there are 357 co-operative societies in operation in Tamil Nadu. Among them, overall elected membership stands at 3061 of which 1158 are women, constituting 38 per cent. One-third reservations for women along with the fact that some co-operatives are all-women societies, have contributed to this. Some districts fare even better, namely Dharmapuri (56.76 per cent), Pudukkottai (68 per cent), Nagapattinam (64.29 per cent) and Theni (52.86 per cent). This is most likely because in these districts there are a number of special co-operatives for tailoring, weaning foods, etc. where a number of women are employed.

Data on office bearers illustrate, however, that only 21.15 per cent of office bearers are women. Nonetheless, the overall situation is encouraging, revealing that women are no longer marginal players so far as elected membership and office bearers among co-operatives is concerned. A more detailed qualitative study on the perceptions of men and women members and office bearers would be of interest.

Trade Unions

Unlike the relatively high share of females in co-operatives, trade unions are largely male-dominated. Data from the Commissioner of Labour shows that out of a total membership of 1,636,042 (in the 7035 trade unions), women comprise only 17.72 per cent of the total, that is there are 289,949 female members. While this can be partly explained by the fact that women contribute a smaller share of the total workforce as compared to the men, it also suggests that there are barriers to working women becoming trade union members. Moreover, there is no reservation for women in trade unions.

Participation by Social Groups

It would be of interest to analyse decision making and participation by social groups to assess the position of the weaker sections, namely SCs and STs who constitute 19.2 per cent of the total population in Tamil Nadu and 16.7 per cent in India (1991). However, no recent data are available.

Self Help Groups

In Tamil Nadu, SHGs have emerged as important local institutions in villages. A group of 10–20 persons of similar economic class, generally poor, mostly women, get together to organize themselves into a cohesive group to improve their social and economic position through collective action. Started on an experimental basis in 1989, under the IFAD assisted women's development project, SHGs now operate in all rural districts of Tamil Nadu. An external catalyst like an NGO helps in social mobilization, formation and nurturing of the SHGs through government administrative and financial support. As the movement has gained momentum, some bankers and NGOs are also forming groups on their own. Self help groups are developing into strong local institutions, providing a legitimate avenue for members to participate in public life outside their homes as a means to access inputs such as training, banking services, government schemes etc. By March 2003, over 1,26,100 exclusively women's SHGs were operating with a membership of nearly 2.15 million women.

Even without explicit reservations for SCs/STs, their percentage in SHGs is well over 40 per cent. This is because of the conscious efforts by project management in recent years to focus on the worst-off and most vulnerable sections of the population. The SHGs have enabled a tremendous physical mobility among women, increased their bargaining capacities, self confidence, life skills in areas such as accounts keeping, money management, savings and credit, awareness about health, nutrition, immunization, education, and so on. They have also enabled households to reduce dependence on local moneylenders by providing an optional pool of resources through the group's common fund, generated out of regular savings and internal rotation. Further, SHGs have empowered women to cope with important social problems like alcoholism, domestic violence, abandonment, dowries and female infanticide.

This apart, individual women hitherto considered credit unworthy, have been transformed into good banking propositions. The initial reluctance of male members has been transformed into support as the entire household benefits. Women have been able to influence thinking in the banking sector, increasing finance to the poor. Self help groups, therefore, seem to be a better option than government sponsored credit programmes, though the two are not mutually exclusive.

Improving Female Participation in the Future

For more equitable participation by all, the State should take the lead in understanding the constraints faced by women as compared to those faced by men. This will no doubt lead to greater participation by women in public life. As suggested at the outset of this chapter, the social construction of gender is very strong in India as a whole and in Tamil Nadu, in particular. This leads to many constraints. Some obvious ones are social conditioning, patriarchal attitudes, lower status of girls and women (both in their natal and marital households), burden of unpaid household work, child care (only marginally shared by husbands), gender blind places of work, and so on. If access to higher education is unequal, the consequent inequalities in employment are hardly surprising. For those fortunate enough to access higher education, the double burden of unpaid and paid work becomes the norm, unless other family members, in particular the husbands, share the unpaid domestic work. This will become possible with a wider acceptability of women's aspirations and needs.

Child rearing is another issue. Quality child care services, pre-schools and crèches are some of the obvious support services of relevance for women across the social and economic spectrum. In fact, only when such services are considered as support to the family as a whole, rather than to women alone, will there be a greater supply. The State can take a lead in the matter and work in collaboration with suitable NGOs.

Another kind of support service where the State can play a direct role is safe places of stay for working women. When a woman has to live alone, either out of choice or circumstance (say, due to a transfer), rental accommodation is often ruled out because of suspicion and prejudice, especially in smaller towns. Also, safety is an issue. Working women's hostels, where quality services are provided on a payment basis, are a critical need. Working women's hostels are already operating in major districts in Tamil Nadu. However, there is a need for many more. Funds from the Government of India can be tapped and made available to suitable organizations willing to run them. Other support services, like transport facilities and separate toilets for women in the work place, still cannot be taken for granted as many work places tend to be designed only keeping the men in mind. However, the beginning of change is already evident. This can be built upon through gender sensitization training as a pre-service and in-service training requirement, with suitably and sensitively designed training modules.

Reservation is also an instrument of State policy which has been used for positive discrimination in the public sector, initially only for the SC/ST population but now even for women in the lower rungs of political participation. From the earlier analysis, it is possible to conclude that where there is no reservation for women, women have not managed to participate in decision making in numbers significant enough to make a difference. Whether reservation is the best instrument, however, is also debatable. As the share of women participating in the decision making process begins to cross minimum threshold levels, other changes are likely to be triggered-off as well.

Institutional Arrangements for Gender Equity

Institutional arrangements aimed at promoting gender equity for women in Tamil Nadu are quite elaborate. Three key institutions are involved in promoting gender equity: Tamil Nadu State Commission for Women, Tamil Nadu Corporation for Development of Women and the Department of Social Welfare. These organizations are the nodal agencies through which the government implements policies. In addition to programmes, however, a number of legislative measures exist which address questions of gender equity. This section looks at both programmes and legislation.

Programmes and Policies

Facilitating Economic Empowerment of Women

A variety of self-employment programmes have been initiated for women by the Central and State government. Through the Mahalir Thittam, 80,000 exclusive SHGs, covering 1.4 million women, have been formed all over the State. However, the programme is yet to make a significant impact on several fronts: changing norms *vis-à-vis* the gender division of domestic work and child care, reducing drudgery of women, generating full employment for women, expanding non-farm activities of women, bridging the wage gap between women and men, and expanding women's ownership of land and houses. In other words, the programme, is focused more on women's entrepreneurship and skill building. The challenge will be to retain the focus on group-building and empowerment of women, while expanding their access to capital and building the capacity of grassroot field workers of both NGOs and the government to facilitate entrepreneurship amongst women SHG members.

Box 6.5—Breaking the Glass Ceiling?

Suguna of Kasimapatti village in Dharmapuri district joined an SHG facilitated by MYRADA under TNWDP in 1995 and took a course in photography the same year. She then obtained a bank loan of Rs 10,500 for the purchase of a camera and set herself up as a photographer. In the years that followed, she has become well known in her neighbourhood and also works much further afield, in Hosur and Bangalore, covering private functions such as birthdays and marriages. She repaid her loan within two years and makes a significant contribution to her household income and enjoys the support of her husband.

Source: Tamil Nadu Women Development Project.

In order to facilitate women's increasing participation in the workforce (both self-employment as well as salaried employment) and to improve their economic status, however, a number of existing measures will have to be strengthened or new measures introduced. Some of these are addressed below.

- The State's 30 per cent reservation policy for women should be made statutory as in the case of SC and ST reservation. It should also be extended to all categories of staff. Removal of constraints with regard to its implementation and periodical monitoring are essential. It is essential to give preference to women in promotional postings, remove biases in promotional opportunities in the case of gender-differentiated cadres and increase the representation of women in leadership positions of trade unions of mixed cadres. A few other traditions also need to be changed, such as the gender-based allocation of jobs in some departments (example, all health inspectors are men and village health nurses (VHNs) are women in the Department of Public Health), provision of parental medical cover to male staff but not to female staff, and absence of maternity leave for unwed mothers and single women seeking to adopt.
- Added efforts are essential to prevent sexual harassment in work places as mandated by the Supreme Court. At present, sexual harassment is a common but under-reported phenomena because of the lack of protection given to women workers.
- Protecting labour and safety conditions of women in the informal sector is yet another challenge. Establishment of the Unorganized Labour Welfare Board by the State Government is hence a move in the right direction.
- Creation of women exclusive markets as well as women federations at the district-level for women traders and producers to sell their wares could be facilitated under the *Poomaalai* programme of the rural development

department. Enhanced usage of liquified petroleum gas (LPG) as domestic fuel, currently promoted by the co-operative department, would reduce drudgery and enable women to visit distant markets.

- Amendments to legislations on property rights are required to the effect that any will disinheriting daughters or any document by which a woman surrenders her right in favour of her brothers, husband or in-laws is invalid. If a women dies childless or under suspicious circumstances, her property should revert to her natal family. Along the lines of the Maharashtra Government policy for women, legislation should be passed such that as soon as a marriage is solemnized, the wife becomes the joint owner of the properties and assets earned by the husband. Collection of gender disaggregated statistics on land ownership and transfers must be institutionalized so as to monitor the land rights of women.

Addressing Other Gender-specific Concerns

These measures, as mentioned above, are generally aimed at making it possible for women to enter the workforce and to strengthen their overall economic status. More specific initiatives, however, will be needed to address questions such as the feminization of poverty, rights to literacy and education, better health, violence against women and women's participation. This section highlights these concerns and suggests remedial measures.

- **Feminization of Poverty** Indications are that increased income does not always lead to increased well-being of the family in terms of better nutrition, health care and education. Male expenditure on alcohol is a major leakage, reflecting women's poor control over family income. A total prohibition policy is a felt need of poor women. Another leakage is the expenditure on dowry and marriages. Given the large number of socially-oriented SHGs and other community-based organizations in Tamil Nadu, an initiative to promote dowry-free marriages amongst member families could be attempted.

  Inadequate convergence between various schemes and departments at the village level is yet another reason for the gap between increased income and improved well-being. It would be useful to form village-level coordination committees (VLCCs) comprising representatives of gram panchayats, mahalir thittams and other SHGs, nutrition workers, VHNs, school principals and village accountants. This same VLCC, the operational arm of the gram panchayat, could work towards arresting gender-specific ways in which women slip into poverty, by intervening in instances of divorce, separation or martial conflicts, and at least ensuring that women's economic interests are protected.
- **Rights to Literacy and Education** The Tamil Nadu Government has adopted several policy measures to address gender-specific barriers to girls' education. Perhaps every block can have a women's resource centre, which could act as a venue for a 10–15 day residential training courses for women (including SHGs) and girls who are interested in strengthening their functional literacy skills and also offer inputs for economic, social and political empowerment. It could, in other words, act as an education centre for women. Establishing women-only libraries and reading rooms, posting women as librarians (part-time or full-time), locating libraries in places accessible to women are possible strategies to enable girls and women to gain access to knowledge.

  With regard to access to schools, specific focus should be made on increasing the proportion of women teachers at middle, high school, and higher secondary school levels, with greater focus on districts where the gender balance is low. Gender sensitization of teachers is another issue, and greater attention could be paid to mainstream gender concerns within teachers' training courses and in-service training (see Chapter on education).
- **Health and Reproduction** A study was initiated in 1999 on the challenges of mainstreaming gender in public health administration. The recommendations of this study are now being reviewed. Adopted recommendations need to be internalized and institutionalized as part of an overall staffing policy. However, barriers to gender equity on the demand side also need to be addressed. This includes sensitization of men on reproductive and

sexual rights of women and their responsibility in this regard, changing public attitudes towards inequalities in distribution of food and health care, strengthening knowledge on infertility and sex-determination, and promoting health insurance or credit for poor women, through better convergence between health and village-level, community-based organizations. On the programme front, gender equity in fertility control, focus on infertility treatment, occupational health of women, violence as a health issue and cancer screening for middle aged women need to be addressed.

- **Violence Against Women** Several institutional structures exist that address violence against women. All-women police stations, free legal aid boards, family counselling centres as well as the State Commission for Women (which has a broader mandate) have been established. Several NGOs, moreover, are working to prevent atrocities against women. Recognizing that the attitude of the police is one of the barriers to institutional redress, the State Commission for Women has initiated gender sensitization of Tamil Nadu Police functionaries and legal literacy programmes for teachers with the support of NGOs.

  Gender sensitization programmes for police should be institutionalized within the graduation curricula in the Police Training College for the constabulary as well as for officers. Several legal reforms suggested by the State Commission for women[5] need to be implemented in the area of divorce, re-marriage and domestic violence, including giving greater teeth to the Commission. Training on human rights and law needs to be given to those working on women's issues. Censorship policies and laws also need to be reviewed from a gender perspective.
- **Women and Governance** Female and male representatives of gram panchayats have received training through the DRDA on different aspects related to the functioning of panchayats and their role in decentralized democracy. The rural development department and the United Nations International Childrens' Education Fund (UNICEF) now plan to systematize training through the development of a series of manuals and training programmes for functionaries. Special training for women functionaries of both panchayati raj institutions and urban local bodies needs to be built into these modules, and gender concerns need to be effectively mainstreamed.

  Training for promising SHG members (a fertile breeding ground for leaders) on local self government will pave the way for a large number of women to emerge as genuine leaders. Measures to increase accountability of gram panchayats towards women including sensitization of the elected leaders is needed along with an amendment to panchayat laws mandating a minimum representation of elected women functionaries in every sub-committee of the local body. Fair representation of women, that is at least 33 per cent, in all government committees, parastatals, statutory boards, etc., at every level—State, district, block and village—would help in mainstreaming gender concerns in all sectors.

Summary and Conclusions

The above analysis suggests that Tamil Nadu fares reasonably well (above the all-India level) in terms of indicators such as female literacy, girls enrolment, female life expectancy, and women's access to basic amenities. The MMRs and total fertility rates are also lower than the national average. In terms of political participation, women are faring reasonably well. While the absolute condition of women in Tamil Nadu is better than that in most States, the position of women *vis-à-vis* men with respect to literacy, education, work force participation, wages, asset ownership and political participation has not improved. The condition of women seems particularly poor in four backward districts: Dharmapuri, Cuddalore, Villupuram and Tiruvannamalai. The position of women, in particular

[5]The specific recommendations include: i) amendments to the CrPC and IPC providing more safeguards to women in marriage and divorce; ii) amendments to the CPC in favour of divorced and/or separated women giving powers of inquiry to the Commission; and iii) legal provisions to curb domestic violence.

the gender gap in IMR and sex ratio, is extremely poor in Salem and Dharmapuri. A disturbing trend has been the fall in the juvenile sex ratio by 0.29 per cent in Tamil Nadu in the period 1991–2001 (Census 2001), with 22 districts experiencing a fall in the juvenile sex ratio. Each of these districts requires immediate attention through different kinds of strategies.

It is also true that while many innovative experiments have been carried out in Tamil Nadu for women's advancement from which several lessons can be drawn, several areas require greater attention. As women's lives are not sectorally divided, it is imperative that the State government evolves a comprehensive State policy for gender equity that does the following:

- Lays down time-bound goals and objectives to achieve gender equity in the State.
- Highlights key, gender-specific issues and targets vulnerable groups.
- Mandates announcement of a gender policy by each department and organization.
- Mandates gender budgeting for each sub-head under the State budget and perhaps a women component plan followed by annual departmental gender audits.
- Specifies indicators that will be used for monitoring the achievement of gender policy.
- Specifies what gender disaggregated data need to be gathered by each department to measure whether the indicators are being achieved or not.
- Specifies agencies responsible for achieving the policy goals.

Ideally, the policy should be evolved with the involvement of all stakeholders, primarily women. Its implementation should be done as a collective and examined independently by the State Commission for Women.

7. Social Security

Chapter

7

Social Security

The concept of social security, in its broadest sense, means support to individuals to help them attain a reasonable standard of living and/or to ensure that they do not experience a drop in their standard of living due to the occurrence of any contingency. If the broad social effect of a social security programme is to improve the quality of life, its economic effect is to redistribute income through a combination of promotional and protective measures. While promotional measures include growth-mediated and direct anti-poverty measures, protective measures seek to provide guarantees or entitlements to those affected by specific contingencies such as old age, death, employment injury, sickness, maternity etc. (Guhan, 1992). This chapter focuses primarily on protective social security for the elderly in Tamil Nadu as an important human development issue.

Social Security Measures in Tamil Nadu

While social security in terms of assistance and insurance is not a new concept in India, state-initiated social security is fairly recent. This section identifies the major social security initiatives in Tamil Nadu promoted by the State Government.

In Tamil Nadu (as in other parts of the country), social security is provided through both promotional and protective measures. The protective measures include contributory benefits in the form of pensions and retirement benefits to government employees, survivor benefits for the workers of the unorganized sector, provident fund and other benefits for workers in factories and other commercial establishments, benefits/welfare schemes for unorganized sector workers and social assistance schemes for women (and others) such as marriage and maternity assistance, old age pension etc. In this chapter, the following measures are discussed:

- Pension Benefits for Retired Government Employees.
- Social Security for Private Organized Sector.
- Social Security for the Unorganized Sector.
- Pensions for Vulnerable Groups.
- Survivor Benefits for Unorganized Sector.
- Marriage and Maternity Assistance for Poor Women.

Pension Benefits for Retired Government Employees

Pension benefits for retired government employees in Tamil Nadu are in the form of pensions, family pensions and retirement benefits such as death-cum-retirement gratuity, encashment of earned leave, etc. With consistent

increase in life expectancy, the annual number of new entrants for pension has tended to outstrip annual displacements on account of death. Public expenditure on the payment of pension and other retirement benefits has steadily increased over the years, from Rs 4.01 billion in 1991–2 to Rs 25.78 billion in 2000–1 at current prices, as the number of pensioners has increased from 230,000 in 1991–2 to 413,000 in 2000–1. Expenditure is estimated to go up to a staggering Rs 138.61 billion in 2010, constituting 15 per cent of revenue expenditure. The liberalization of pension formulae, commutation facilities, sanction of dearness allowance and other benefits have provided a fairly comfortable post-retirement package for government pensioners.

Social Security for Private Organized Sector

The four statutory social security schemes to protect workers in factories and other commercial establishments in Tamil Nadu, employing 20 or more persons, include Employees' Provident Fund Scheme 1952, Employees' Deposit-linked Insurance Scheme 1976, Employees' Pension Scheme 1995 and Employees' State Insurance Act 1948. At present, they cover 177 types of industries, 44,308 establishments and 3.86 million members.

Social Security for the Unorganized Sector

The unorganized sector is marked by low incomes, unstable and irregular employment and lack of protection either from legislation or trade unions. An exclusive welfare board for construction workers was set up by the State Government in 1995 which provides welfare schemes in the form of group/personal accident relief, marriage assistance, maternity benefits, assistance for the education of workers' children, terminal benefits and assistance for funeral expenses. An estimated 238,000 construction workers are covered by the welfare board. In 1999, the government constituted the Tamil Nadu Manual Workers Social Security and Welfare Board for 57 categories of unorganized labour and further constituted seven separate boards for seven categories of manual workers, including agricultural labourers, palm tree workers, and auto rickshaw and taxi drivers. These boards are at present in their nascent stage.

Pensions for Vulnerable Groups

Pensions are provided to five target categories of varying age-groups, namely old age people (normal), deserted wives, destitute widows, destitute physically handicapped and destitute agricultural labourers. The main eligibility criteria for drawing the pension amount are that persons belonging to these categories should have no means of subsistence and no family support.

Survivor Benefits for the Unorganized Sector

Poor unorganized labour households suffer sudden income losses on account of death of or grievous injury to the bread-winner. In order to provide social secuirty to the bereaved families in the form of survivor benefit, a Family Distress Relief Scheme (FDRS) and Accident Relief Scheme (ARS) are operated in all the districts of Tamil Nadu. The FDRS is intended to provide special financial assistance to the bereaved families of the poor in the event of the demise of the bread-winner to compensate for the loss of wages. The financial assistance under FDRS, initially met by the State Government, has been entirely borne by the Government of India since 1999. The quantum of assistance being Rs 10,000, ARS is intended to provide financial relief to the families of persons belonging to 44 identified poor occupational categories who die or suffer physical impairment in accidents while in pursuit of their occupation or otherwise. The quantum of financial assistance ranges between Rs 5000 and Rs 15,000 and is shared by the Centre and State. About 400,000 families have benefited since the inception of these schemes, mostly from FDRS.

Marriage and Maternity Assistance for Poor Women

There are five marriage assistance schemes in Tamil Nadu. One of the major schemes is for girls below the poverty line, which attempts to reduce the financial burden on the girl's family, while simultaneously enforcing the legal age of marriage for girls (18 years) and promoting female literacy/schooling. The maternity assistance scheme provides cash assistance to pregnant working women belonging to poor households to compensate them for the loss of wages during the last eight to twelve weeks before delivery and eight weeks after delivery. This cash assistance helps them to get essential nutrients in their diet.

Social Security for the Elderly

Ageing of the population, until recently a concern of the developed countries of the world, has now become an important issue for developing countries, including India. In India, the population of the aged (60+) was 56.7 million in 1991 and it is expected to grow to over 71 million by the year 2001 and 137 million by 2021 (projected).[1] The proportion of the aged population which was 6.7 per cent in 1991 is projected to increase to 7.0 per cent in 2001 and 9.8 per cent in 2021. As of 1991, the highest proportion of elderly among major States was in Kerala at 8.7 per cent, followed by Tamil Nadu at 7.4 per cent. A combination of high fertility and falling mortality rates in these States has led to a large and rapid increase in the elderly population. Other States such as Maharashtra and Punjab are not far behind.

The ageing of the population in Tamil Nadu has serious implications in terms of how the future elderly—more particularly, the elderly poor—will live and, therefore, is a subject of serious concern with huge policy implications. Rapid urbanization of the State has resulted in shortage of accommodation in urban areas and high rentals have acted as severe constraints on the joint family system. Traditional respect as well as the attitude of empathy and care for the aged has considerably weakened. Migration of adult children to urban areas has accentuated the vulnerability of the old who are left behind; this has been especially so in families which do not have independent production assets and are dependent primarily on their labour (Sankaran, 1998). Consequent to changing societal values, the responsibility of the welfare of the elderly has devolved on the community and the State, and this has, therefore, brought provision of social security for them into sharp focus.

An attempt is made here to examine (a) the ageing profile of Tamil Nadu, (b) financial security for the aged poor and old age pension schemes for the elderly, (c) health security—health care, housing and social services for the elderly, and (d) policy imperatives.

Age Structure of the Population

The age structure of the population in Tamil Nadu has been undergoing a change. The proportion of population in the age group 0–4 has decreased from 11.15 per cent in 1981 to 7.79 per cent in 2000 (projected), while that of the 60+ population was projected to increase from 6.41 to 8.26 per cent during the same period. While the average LEB has increased from 49.6 years in 1970–5 to 63.3 years in 1991–5, life expectancy for 60+ has also increased from 11.9 years to 14.5 years during the same period. It is, therefore, necessary to look more closely at the aged population.

Demographic Profile of the Aged in Tamil Nadu

According to the 1961 Census, the number of elderly (aged 60 and above) in Tamil Nadu was 1.89 million. This figure more than doubled to 4.16 million in 1991. While the aged constituted 5.60 per cent of the total population

[1]Age specific data for the 2001 Census were not available at the time of writing this chapter.

in 1961, by 1991 they constituted 7.45 per cent (Table 7.1). In each of the age groups 60–9, 70–9 and 80+, the population had more than doubled from 1961 to 1991. Moreover, in the decade 1981–91, the percentage of the population in these age groups was higher as compared to the previous decades. An independent estimate projects the percentage of the aged at 9.05 per cent and 11.43 per cent in 2001 and 2011 respectively, next only to Kerala (Irudayarajan *et al.*, 1999). The projected increase in both the absolute and relative size of the elderly population in the State is quite staggering and has implications for State policy for the aged.

District-Level Ageing Profile

Looking at the district-level ageing profile based on the 1991 Census (data for erstwhile 21 composite districts), five districts, namely Kancheepuram, Cuddalore, Salem, Tiruchirappalli and Thanjavur had more than 300,000 people of age 60+. Salem had the highest number of 80+ people, namely 34,000, and the Nilgiris had the lowest of 3000.

TABLE 7.1—DEMOGRAPHIC PROFILE OF THE AGED IN TAMIL NADU, 1961–91

	1961	*1971*	*1981*	*1991*
1. No. of aged (in '000s)				
60–69	1296	1633	2077	2702
70–79	452	557	780	1075
80+	138	175	247	385
Total	1886	2365	3104	4162
2. Proportion to total population(%)				
60–69	3.85	3.96	4.26	4.84
70–79	1.34	1.35	1.61	1.92
80+	0.41	0.43	0.54	0.69
Total	5.60	5.74	6.41	7.45
3. Growth rate				
60–69		26.02	27.23	30.06
70–79		23.19	39.92	37.86
80+		26.72	41.12	55.57
Total		25.39	31.25	34.05

Source: Census of India, 1991, 'Ageing population of India—An analysis of the 1991 Census data', Registrar General, India, March 1999.

The proportion of 60+ elderly population, both males and females, as per the 1991 Census, was 7.45 per cent. The districts above the State average for both males and females were Erode (9.34 per cent), Thoothukudi (8.36 per cent), Tirunelveli (8.33 per cent), Salem (8.24 per cent), Kanniyakumari (8.19 per cent), Sivagangai (8.14 per cent), Coimbatore (8.08 per cent), Tiruvannamalai (7.71 per cent) and Tiruchirappalli (7.67 per cent).

Dependency Ratios

The ratio of persons aged 60 and over to persons aged 15–59 is called the aged dependency ratio and is the most common type of social dependency ratio. The youth dependency ratio is the number of persons aged 0–14 to 100 persons of intermediate age (15–59). The youth dependency ratio was 63.08 per cent in 1961 but declined to 50.15 per cent in 1991, whereas the aged dependency ratio increased from 9.86 per cent in 1961 to 12.13 per cent in 1991. Thus, there was an increase of the aged dependency ratio by 3 percentage points, and a decrease in the child dependency ratio by 13 percentage points.

The index of ageing is intended to measure the structure of dependency, that is the proportion of population

aged 60 and above to the population aged 0–14. The number of persons aged 60 years and above for 100 persons under 15 years of age (index of ageing) was 15.63 per cent in 1961 but increased to 24.19 per cent in 1991. The increase was just 2.7 percentage points between 1961–81 but was 5.87 percentage points between 1981–91, indicating the acceleration of the ageing index in Tamil Nadu (Table 7.2). Based on census projections by age-group, the aged dependency ratio has been put at 13.12 and the index of ageing at 32.07, showing a further increase of 7.88 percentage points from 1991.

TABLE 7.2—DEPENDENCY RATIO, AGEING INDEX AND FAMILIAL DEPENDENCY RATIO FOR TAMIL NADU

Year	*Dependency ratio*			*Index of Ageing*	*Familial Dependency Ratio*	
	Young 0–14/15–59	*Aged 60+/15–59*	*Total 0–14 and 60+/15–59*	*60+/0–14*	*0–14/60+*	*60–74/40–44*
1961	63.08	9.86	72.94	15.63	640	NA
1971	66.88	10.17	77.05	15.20	658	105
1981	59.78	10.95	70.73	18.32	546	115
1991	50.15	12.13	62.28	24.19	413	108
2001	40.90	13.12	54.01	32.07	312	109

Note: NA-not available.
Source: Based on projections of age-group population by Census Organization, the ratios have been calculated.

Data for districts have shown that the highest dependency ratio (rural plus urban) was in Erode district at 144/1000 followed by Thoothukudi with 141, Tirunelveli with 139, Sivagangai with 135 and Kanniyakumari and Tiruvannamalai with 134. Even in the rural areas, the highest dependency ratio was in Thoothukudi with 159, followed by Erode with 156, Tirunelveli and Coimbatore with 143, Sivagangai with 142 and Salem with 140.

Literacy and the Aged

The literacy rate among the aged is abysmally low. As per the 1991 Census, only 33.68 per cent of the 60+ population was literate, as against the literacy rate of 62.66 per cent for the entire population. The gender differential is huge, namely 34 percentage points. While the aged male literacy rate is 49.94 per cent, the female literacy rate is 16.07 per cent. In other words, two-thirds of the aged population is illiterate while 84 per cent of the female aged are illiterate. The female aged rural literacy in Tamil Nadu is just 8.64 per cent. On the other hand, the urban aged literacy is 31.5 per cent. With female life expectancy higher than males, the prevalence of high female illiteracy has very serious implications when the aged women become widowed, and may have to live without male support.

TABLE 7.3—LITERACY RATE FOR 60+

State	*Rural*			*Urban*			*Combined*		
	Male	*Female*	*Persons*	*Male*	*Female*	*Persons*	*Male*	*Female*	*Persons*
Tamil Nadu	41.07	8.64	25.74	70.29	31.56	51.06	49.94	16.07	33.68
Kerala	76.81	50.17	62.69	84.38	58.27	69.91	78.68	52.32	64.55
India	33.65	7.51	21.11	65.97	30.76	48.73	40.62	12.68	27.15

Source: Census 1991.

Elderly by Sex and Residence

Of the total aged population of 4.16 million in Tamil Nadu, 2 million are women. Sixty-eight per cent of the total elderly population lives in rural areas. As can be seen from Table 7.4, the urban aged population is equally divided among men and women, while in rural areas, the male aged population (1.51 million) is slightly higher than the female aged population (1.35 million).

TABLE 7.4—PERSONS AGED 60+ BY SEX AND RESIDENCE IN TAMIL NADU

(*millions*)

Rural			*Urban*			*Combined*		
Male	*Female*	*Persons*	*Male*	*Female*	*Persons*	*Male*	*Female*	*Persons*
1.51	1.35	2.86	0.66	0.65	1.31	2.16	2.00	4.16

Source: Census 1991.

Financial Security for the Aged Poor

Though the ageing of population is an obvious consequence of the progress of demographic transition, it has brought to the fore the financial insecurity among the aged. Kerala was one of the earliest States to recognize this and it introduced the Old Age Pension (OAP) Scheme in 1960 and followed it up with a widow/destitute pension scheme in 1964. Tamil Nadu followed suit in 1962 with an OAP scheme for the elderly. The destitute widow pension scheme was introduced only in the 1970s along with the OAP scheme for the physically handicapped. The 1980s saw the introduction of two more pension schemes—one for deserted wives and another for destitute agricultural labourers. Except for the first scheme which shall be referred to as OAP (Normal), all the other schemes were not primarily meant for the elderly, though the elderly satisfying the eligibility criteria, could obtain pension from the latter four schemes. Therefore, there is a certain overlap between OAP (Normal) and the rest of the four schemes.[2] The details, such as the year of introduction, age eligibility, common and additional criteria, rate of pension and other benefits of the OAP schemes are given in Box 7.1.

Box 7.1—OAP Schemes: Year of Introduction and Eligibility

Scheme	*Year of Introduction*	*Eligibility*
1. Old Age Pension (Normal)	1.4.1962	General Criteria: No family support and no means of subsistence. 60 and above—destitutes with blindness, leprosy, insanity, paralysis or loss of limb. 65 years—for others
2. Destitute Physically Handicapped Pension	6.11.1974	: 55 years : 45 years Disability with 50 per cent or more

[2]In addition to OAP (Normal), destitute persons above 60 are also covered under other categories of pension schemes. It may not, therefore, be correct if the (1991 census) entire elderly population 60+ is taken as target population of OAP (Normal) scheme. Hence, in order to avoid overlapping, the target population under OAP (Normal) is arrived at by deducting the elderly population belonging to physically handicapped (1.9 per cent of the total population based on NSSO estimates from the 36th Round), destitute widows, deserted wives and agricultural labourers. It is assumed that these groups (that is those who are 60+) claim pension under their respective categories.

Scheme	*Year of Introduction*	*Eligibility*
3. Destitute Widows Pension	27.5.1975	: 45 years : 40 years : No age limit Destitute widows and widows having legal heirs of age 18 years and above.
4. Destitute Agricultural Labourers Pension	15.3.1981	60 years and above Evidence as an agricultural labourer.
5. Deserted Wives Pension	25.4.1986	30 years and above. Deserted wives and also those having legal heirs of age 18 years and above.

Rate of Pension

When the OAP scheme was introduced in 1962, the rate of pension per beneficiary was Rs 20. It underwent revision in subsequent years. Since 1996, the Government of India has started contributing to the pension amount. While out of Rs 100 per beneficiary, its share was Rs 75, at present, the rate of pension per beneficiary is Rs 200, (Rs 75 by the Government of India + Rs 125 by the State).

Other Benefits

1. Under free supply of dhoties and sarees, one dhoti to each male and one saree to each female are given on two occasions in a year, that is, during Pongal and Deepavali festivals.

2. Free supply of rice to OAPs was introduced in 1980. From 1997, old age pensioners who take meals in the NMP centres get 2 kg of rice free. Those who do not take meals get 4 kg of rice per month free.

The data for Tamil Nadu (Table 7.5) show that the number of beneficiaries in all the five categories of old age pension schemes in the 60+ age group increased from 348,480 in 1995–6 to 506,865 in 1999–2000.[3] The major increases were in OAP (Normal) and pension schemes for destitute widows. The coverage ratio for OAP (Normal) has increased substantially from 11.04 per cent in 1995–6 to 16.98 per cent in 1999–2000. The coverage ratios increased slightly from 1995–6 to 1999–2000 in the case of schemes for physically handicapped and agricultural labourers. Table 7.5 shows the category-wise number of beneficiaries and coverage ratios for the elderly 60+ population under OAP schemes for 1995–6 and 1999–2000.

TABLE 7.5—OAP BENEFICIARIES AND COVERAGE RATIOS FOR ELDERLY 60+ POPULATION

Category	*Target popn 60+ 1991 (in '000s)*	*60+ Beneficiaries 1995–96*[1]	*% to total*	*60+ Beneficiaries 1999–2000*[1]	*% to total*	*Coverage ratio% 1995–96*	*1999–2000*
1. OAP (Normal)[3]	2331	257,199	73.81	395,692	78.07	11.04	16.98
2. Physically handicapped[4]	79	2934	0.84	3462	0.68	3.71	4.38
3. Destitute widows[2]	1203	10,716	3.08	21,846	4.31	0.89	1.82
4. Agricultural labourers[2]	535	75,038	21.53	80,731	15.93	14.04	15.10
5. Destitute Deserted wives[2]	14	2593	0.74	5134	1.01	18.53	36.70
Total	4162	348,480	100.00	506,865	100.00	8.37	12.18

Source: 1. District Collectors of Tamil Nadu: Beneficiaries of 60+ age group.
2. Census 1991. 3. Calculated from Census Tables 1991.
4. Estimated by adopting 1.9% of the 60+ census population, based on NSS 36th round of 1981.

[3]The total number of beneficiaries (all age groups) of all schemes in rural areas was 620,000. The OAP (Normal) with 249,000 beneficiaries was the largest scheme followed by the destitute widows scheme with 236,000 rural beneficiaries. Together these two schemes accounted for 78 per cent of rural beneficiaries.

A number of points are in order with regard to the changing importance of particular schemes in the recent past.

- The share of OAP (Normal) which was 73.81 per cent in 1995–6 increased to 78.07 per cent in 1999–2000. On the other hand, the percentage share of the destitute widows scheme (DWP) gradually increased from 3.08 per cent in 1995–6 to 4.31 per cent in 1999–2000. The share of the scheme for physically handicapped declined from 0.84 per cent in 1995–6 to 0.68 per cent in 1999–2000.
- The share of Destitute Agricultural Labourers' Pension (DALP) has been surprisingly low. It is probable that the bulk of beneficiaries might have accessed the pension under OAP (Normal) since (a) there is not much difference in age eligibility for both the schemes and (b) beneficiaries under the DALP scheme have to produce some evidence that they are agricultural labourers which they do not have to do under OAP (Normal). Hence, easy accessibility to OAP (Normal) is ostensibly the reason for the DALP not being very popular.
- The Destitute Deserted Wives Pension Scheme (DDWP) has also not registered much growth, probably because of the social stigma attached to declaring oneself as a 'deserted wife' for eligibility under the scheme.
- The increasing coverage in all schemes is mainly due to the scrapping of a 'waiting list' for OAP applications and the removal of a ceiling imposed on the sanction of old age pensions in 1989. With the District Collectors authorized to sanction OAP applications without any ceiling or limit on the number of sanctions, the coverage increased by 26.7 per cent in 1990 within a year of the removal of the ceiling (Guhan, 1992). This trend has continued.

Poverty Levels Among the Elderly and Coverage of OAP

This section examines to what extent those below the poverty line among the elderly are captured by the destitution criteria and what percentage of the elderly accesses OAP schemes. Table 7.6 shows the disaggregated data on poverty, WPRs and the coverage ratio of OAP (Normal) and OAP (all categories) in 21 erstwhile composite districts as per the 1991 Census. As can be seen, the State average coverage ratio under OAP (Normal) is 16.98 per cent while the poverty level for the State as a whole is 31.66 per cent. For the purpose of this analysis, the assumption is made that poverty is evenly spread among all age groups including the elderly. The coverage ratio has been calculated by dividing the number of beneficiaries by the elderly population.

TABLE 7.6—CORRELATION BETWEEN ELDERLY POPULATION, AGED WPR, POVERTY AND OAP COVERAGE RATIO

S.no.	*Districts*	*Target Elderly Popn 60+ related to OAP (normal) 1991 (in '000s)*	*Target Elderly Popn 60+ All Categories (1991) (in '000s)*[1]	*Aged WPR (%) 1991*[1]	*Poverty level 1993–94 (%)*[2]	*OAP (normal) Beneficiaries coverage ratio (%) 1991–2000*	*All five categories*[3] *Beneficiaries coverage ratio (%) 1999–2000*
1.	Chennai	177	257	16.81	31.58	24.39	17.37
2.	Kancheepuram	171	309	32.21	27.00	19.72	13.31
3.	Vellore	118	222	36.82	36.55	20.37	17.33
4.	Dharmapuri	104	168	45.10	26.70	17.51	15.67
5.	Tiruvannamalai	86	157	45.55	42.15	26.35	20.71
6.	Cuddalore	187	328	44.28	50.91	15.53	11.62
7.	Salem	180	320	45.16	30.14	19.77	13.42
8.	Erode	122	217	46.59	18.32	8.94	6.75
9.	Nilgiris	25	38	23.79	21.24	8.08	7.84
10.	Coimbatore	166	283	34.74	25.77	7.90	5.64

(Contd...)

(Table 7.6 Contd.)

S.no.	*Districts*	*Target Elderly Popn 60+ related to OAP (normal) 1991 (in 000s)*	*Target Elderly Popn 60+ All Categories (1991) (in 000s)*[1]	*Aged WPR (%) 1991*[1]	*Poverty level 1993–94 (%)*[2]	*OAP (normal) Beneficiaries coverage ratio (%) 1991–2000*	*All five categories*[3] *Beneficiaries coverage ratio (%) 1999–2000*
11.	Dindigul	69	130	46.13	46.28	13.99	9.04
12.	Tiruchirappalli	172	317	44.07	21.59	15.78	12.76
13.	Thanjavur	170	334	43.22	30.73	20.36	12.05
14.	Pudukkottai	56	94	41.53	26.90	17.64	12.27
15.	Sivagangai	53	88	46.60	26.63	16.33	11.48
16	Madurai	123	246	39.35	30.35	23.18	15.81
17.	Virudhunagar	55	113	48.56	26.21	16.81	10.36
18.	Ramanathapuram	50	80	46.43	25.86	15.03	12.40
19.	Thoothukudi	62	122	41.84	47.02	14.76	9.61
20.	Tirunelveli	107	207	42.41	44.10	13.41	8.11
21.	Kanniyakumari	78	132	29.34	48.59	5.83	4.50
	Tamil Nadu	2331	4162	39.89	31.66	16.98	12.18
	State average	111	198				

Sources: 1. Census 1991.
2. Department of Economics and Statistics, Chennai.
3. Calculated on the basis of data furnished by District Collectors of Tamil Nadu.

The following points can be made with regard to the relationship between poverty and OAP (Normal):

- The number of OAP (Normal) beneficiaries in Chennai City, Vellore, Tiruvannamalai, Thanjavur and Madurai districts is higher than the State average by 20 per cent or more. All these districts have poverty levels close to the State average or more than the State average, and thus it can be reasonably confidently said that the destitution criteria has enabled the elderly below the poverty line to access OAP and eke out a living. Among these districts, Tiruvannamalai and Thanjavur have higher elderly WPRs than the State average. The inference that can be drawn is that the wages earned are either spartan or inadequate for sustenance—this is corroborated by the high level of poverty in one of the two districts (Tiruvannamalai: 42.15 per cent).
- Medium poverty districts such as Kancheepuram, Salem, Pudukkottai and Dharmapuri have a coverage ratio higher than the State average. The latter three districts also have a higher WPR as compared to the State average.
- Cuddalore, Thoothukudi and Tirunelveli have poverty levels much higher than the State average, yet their coverage under OAP is below the State coverage ratio. Though the WPR is high in these districts, it cannot be said that there is no recourse to OAP by the elderly poor because of high wage rates—had that been so, the poverty levels would not have been high in these districts. The reasons for poor coverage need to be examined independently.
- Among the medium poverty districts, Coimbatore has the lowest ratio under OAP (7.90 per cent). The WPR is also quite low at 34.74 per cent. Here too, the reason for the poor coverage needs to be examined.
- Virudhunagar (26.21 per cent), Ramanathapuram (25.86 per cent) and Sivagangai (26.63 per cent) which are medium poverty districts also have reasonable OAP coverage ratios of 16.81, 15.03 and 16.33 per cent, respectively. These are traditionally backward and drought-prone districts and the high WPRs among the elderly may not earn them adequate livelihoods due to lower wages.
- The low coverage ratio under OAP in Erode district (8.94 per cent) can largely be ascribed to a family system among the predominant caste in this district which traditionally supports the elderly.

What can be ascertained from the above is that the district-wise coverage ratio of OAP schemes presents a contrasting picture when examined with reference to poverty levels and WPRs. However, what is evident is that even going strictly by the State-level percentage of people living below the poverty line (31.66 per cent), (assuming once again that poverty is spread equally across the 60+ population), the coverage of OAP (Normal) is only 16.98 per cent and all the schemes put together only 12.18 per cent. The coverage is, therefore, less than 55 per cent of the elderly below the poverty line under OAP (Normal) and less than 40 per cent in the case of all the schemes put together. Since there is no ceiling on the sanction of old age pensions by the district administration, the coverage of old age pensions among the aged poor is not satisfactory. The reasons for this low coverage need to be studied more carefully.

Gender Dimensions of Ageing and Social Security

The 1991 Census data have shown that there are more male elderly people (2.16 million) than female (2 million). The proportion of the male elderly population is greater than that of the females in all districts except Vellore, Tirunelveli, Sivagangai and Thoothukudi. The proportion of male elderly, moreover, is more in rural areas than in urban areas in all the districts. In the case of the female elderly population the reverse is true in certain districts, namely Cuddalore, Thanjavur, Pudukottai and Kanniyakumari.

To assess the gender dimension of ageing, the sex ratio is calculated among various groups of elderly by marital status. In all districts except Sivagangai (1016), Thoothukudi (1050) and Tirunelveli (1020), female–male sex ratios are lower in the 60+ and 70+ age groups than for the population as a whole. Higher sex ratios are reported in the age group 80+ for Kancheepuram, Vellore, Nilgiris, Sivagangai, Virudhunagar, Thoothukudi, Tirunelveli, Kanniyakumari and Chennai city.

Looking at the above in the context of social security for the elderly, there were more women than men OAP (Normal) beneficiaries in 1999–2000, that is 245,000 women *vis-à-vis* 150,000 men. As pointed out earlier, this may be the result of women outliving men and hence having recourse to OAP as a means of subsistence. When the data for all five categories of 60+ OAP beneficiaries are put together, there are 321,000 women beneficiaries. In the three categories of OAP (Normal), physically handicapped and agricultural labourers, there were 186,000 male beneficiaries and 294,000 female beneficiaries. This may be due to the higher WPRs among aged men, that is 57.05 per cent as compared to 21.31 per cent for women. The WPR for men aged 60 and above has, however, come down from 70.23 per cent in 1971 to 57.05 per cent in 1991, whereas it increased from 13.27 per cent to 21.31 per cent in the case of women. Almost half of the aged men and one-fifth of aged women were in the workforce.

Male Elderly and Old Age Pension

The variables which are correlated with male OAP beneficiaries in the districts are male elderly population and male aged WPR. As shown in Table 7.7, the distribution of the target 60+ male elderly OAP (Normal) population is very skewed. Under OAP (Norm), 52.4 per cent of the target population is concentrated in seven out of the 21 districts in the State as per the 1991 Census—Chennai, Kancheepuram, Cuddalore, Salem, Coimbatore, Tiruchirappalli and Thanjavur. The target population for the three groups, OAP (Normal), physically handicapped and agricultural labourers, put together is similarly concentrated in the above seven districts and accounts for 52.2 per cent of the target population. Despite the high target population, the coverage ratio under OAP (Normal) is lower than the State average of 8.41 per cent in Coimbatore (3.66 per cent), Tiruchirappalli (8.09 per cent) and Salem (8.30 per cent). Significantly, Dharmapuri (11.64 per cent), Tiruvannamalai (13.06 per cent) and Pudukottai (8.88 per cent) have a higher coverage ratio under OAP (Normal) though the target OAP (Normal) population in these three districts is below the State average of 85, and despite their having a male aged WPR above 60 per cent. A similar trend is observed in the coverage ratios of all three groups combined.

TABLE 7.7—CORRELATION BETWEEN MALE ELDERLY POPULATION, MALE AGED WPR AND OAP COVERAGE RATIO IN SELECTED DISTRICTS

S.no. Districts	Target Male elderly Population 60+ ('000s)		Male aged WPR (%) 1991[1]	Male Beneficiaries (1999–2000)[2] Coverage Ratio (%)	
	Related to OAP (Normal)	All three Categories[1] (OAP(N)+ PH+AL)		OAP (Normal)	OAP all three Categories (OAP(N)+PH+AL)
1. Chennai	126	129	30.19	9.89	9.76
2. Kancheepuram	131	157	49.31	9.93	10.37
3. Dharmapuri	78	92	61.77	11.64	14.00
4. Tiruvannamalai	70	84	63.31	13.06	14.40
5. Cuddalore	147	184	62.60	10.41	10.66
6. Salem	139	170	60.95	8.30	8.05
7. Coimbatore	126	149	50.46	3.66	3.65
8. Tiruchirappalli	136	165	60.36	8.09	9.57
9. Thanjavur	134	177	65.08	14.04	12.14
10. Pudukkottai	43	48	60.73	8.88	9.13
Tamil Nadu	1789	2164	57.05	8.41	8.60
State average	85	103			

Sources: 1. Census 1991.
2. Calculated on the basis of data furnished by District Collectors of Tamil Nadu.

Female Elderly and Old Age Pension

The total female elderly population in Tamil Nadu as per the 1991 Census is approximately 2 million. The State average female WPR is only 21.31 per cent as against the male elderly WPR of 57.05 per cent. Table 7.8 shows the correlation between female elderly population, female aged WPR and coverage ratio of female OAP beneficiaries. In estimating the target 60+ female elderly population under OAP (Normal), it is presumed that the female elderly who are eligible for OAP under the special schemes such as Destitute Widows Pension (DWP), DDWP, DALP and Destitute Physically Handicapped (DPH) will avail OAP through these special schemes and not under the OAP (Normal). The target population of these four schemes is deducted from the total female elderly population in the 60+ age group in order to arrive at the target population under OAP (Normal).

TABLE 7.8—CORRELATION BETWEEN FEMALE ELDERLY POPULATION, FEMALE AGED WPR AND OAP COVERAGE RATIO IN SELECTED DISTRICTS

S.no. Districts	Target Female elderly Population 60+ ('000s)		Female aged WPR (%) 1991[1]	Female Beneficiaries (1999–2000)[2] Coverage Ratio (%)	
	related to OAP (Normal)	all three Categories[1] (OAP(N)+ PH+AL)		OAP (Normal)	OAP all three Categories (OAP(N)+PH+AL)
1. Chennai	51	128	3.45	60.15	24.98
2. Kancheepuram	40	152	14.62	51.79	16.35
3. Vellore	26	112	17.55	58.30	22.98

(Contd...)

(Table 7.8 Contd.)

S.no. Districts	Target Female elderly Population 60+ ('000s)		Female aged WPR (%) 1991[1]	Female Beneficiaries (1999–2000)[2] Coverage Ratio (%)	
	related to OAP (Normal)	all three Categories[1] (OAP(N)+ PH+AL)		OAP (Normal)	OAP all three Categories (OAP(N)+PH+AL)
4. Tiruvannamalai	16	73	25.01	84.53	27.99
5. Salem	42	150	27.17	57.93	19.52
6. Erode	31	102	26.83	22.04	9.41
7. Nilgiris	7	18	12.13	16.78	9.71
8. Coimbatore	40	134	17.19	21.34	7.86
9. Dindigul	14	60	29.13	53.73	15.07
10. Madurai	25	122	23.56	85.96	25.53
11. Virudhunagar	8	56	35.67	68.40	13.44
12. Kanniyakumari	27	65	7.11	10.50	6.06
Tamil Nadu	542	1998	21.31	45.28	16.05
State average	26	95			

Sources: 1. Census 1991.
2. Calculated on the basis of data furnished by District Collectors of Tamil Nadu.

The State coverage ratio for OAP (Normal) is 45.28 per cent. Chennai City, Kancheepuram, Vellore, Salem, Dindigul and Virudhunagar have a coverage ratio in excess of 50 per cent. Tiruvannamalai and Madurai have a very high coverage ratio of over 80 per cent. The coverage is quite low in the Nilgiris possibly because of a lack of awareness about the scheme, being a hill district. However, Kanniyakumari also has a low coverage ratio of 10.5 per cent in spite of having a low female elderly WPR of 7.11 per cent. This is possibly due to the family structure in the district where the younger generation tends to provide informal social security within the family for the female elderly.

The State average coverage ratio of female elderly in all the five OAP schemes is 16.05 per cent. Chennai City, Vellore, Tiruvannamalai and Madurai are the districts which have a coverage ratio of more than 20 per cent. Coimbatore and Erode have a coverage ratio of less than 10 per cent. The reasons for low coverage ratio in these districts are very much the same as in the case of the male elderly. The overall coverage ratio for the female elderly both under OAP (Normal) and OAP (all schemes) is, however, fairly robust.

Destitute Widows Pension

As per the 1991 census, the 60+ widowed population in the State was 1.2 million. On the other hand, DWP beneficiaries constituted only 22,000 in 1999–2000, a coverage ratio of 1.82 per cent[4] which is much lower than the OAP (Normal) coverage ratio of 16.98 per cent. This could be due to three reasons: (a) the widows' destitution level may be lower than that of old age pensioners, (b) out of the total number of beneficiaries, more than 300,000 come under the age group of 20–60 years indicating that there are more young widow beneficiaries and (c) destitute widows above 65 years may have been covered under OAP (Normal) also. As mentioned above, some informal forms of social security are also still available for young widows from their natal families. This is true in districts

[4]In practice, the coverage ratio might be even less given the fact that the number of beneficiaries is from 1999–2000 and the population from 1991.

such as Erode and Coimbatore where caste traditions provide an informal social security arrangement. Coverage ratios in these two districts are 1.40 per cent and 0.80 per cent respectively. Tirunelveli and Kanniyakumari districts also have a low DWP coverage, namely 0.75 and 1.47 per cent, again indicating a community tradition providing family security for young widows. The coverage in the four districts of Erode, Tiruvannamalai, Kanniyakumari and Coimbatore, due to the predominantly urban character is, moreover, presumably restricted to the aged widows who opt for DWP when they outlive their spouses.

Destitute Deserted Wives Pension

The 60+ deserted wives population was 14,000 in 1991 whereas the number of DDWP beneficiaries in 1999–2000 was only 5000. Deserted wives pensioners are more in the districts of Tiruvannamalai, Vellore, Dharmapuri, Madurai, Coimbatore, Kancheepuram, Erode and Virudhunagar and they are mainly in the age group of 40–50. Thanjavur has more widow beneficiaries in the age group of 50–60 years while Chennai city, Tirunelveli and Tiruvannamalai come next. The districts having more widow beneficiaries in the age group of 30–40 are Thoothukudi, Ramanathapuram, Pudukottai, Sivagangai, Vellore, Virudhunagar and Salem. Overall, the reach of this scheme is relatively low, partly due to the social stigma attached in rural areas to deserted wives and partly due to the low awareness of the scheme among the public.

Destitute Physically Handicapped Pension

The total number of persons receiving the pension for elderly destitute physically handicapped in the State increased from 2934 in 1995–6 to 3462 in 1999–2000, an increase of coverage from 3.71 per cent to 4.38 per cent respectively. This is a low absolute as well as proportionate coverage, with an estimated disabled population of 79,000 in the 60+ age group. The most likely reason for the low coverage is the unduly restrictive eligibility norms. The eligibility criteria of 50 per cent disability should be reduced to 25 per cent in order to widen coverage. Despite a low coverage ratio of 4.38 per cent, Rs 7.92 million was spent on the programme in 1999–2000. If coverage was increased to 20 to 30 per cent, the annual pension outlay would still be only Rs 36.16 million (at 20 per cent coverage) and Rs 54.25 million (at 30 per cent coverage), which is not a huge expenditure.

Destitute Agricultural Labourers Pension

The total number of pensioners in the category of destitute agricultural labourers in the State increased from 75,038 in 1995–6 to 80,731 in 1999–2000, 15.10 per cent of the total 60+ agricultural labourers. Data across districts reveal a mixed correlation between aged WPR, aged dependency ratio and coverage ratio under DALP. Kancheepuram has (when compared to the State average) a low WPR (32.21 per cent), low dependency ratio (109 per cent) and understandably a low coverage ratio (17.68 per cent), whereas Vellore with a fairly high aged WPR (36.82 per cent), high dependency ratio (124 per cent) has a high coverage ratio of 40.36 per cent. Salem, Thanjavur, Madurai, Dindigul, Virudhunagar, Tirunelveli and Sivagangai have a high aged WPR and correspondingly a low coverage ratio. (The dependency ratios, however, are low in some and high in other districts.) Tiruvannamalai, Dharmapuri, Cuddalore, Ramanathapuram and Pudukottai have a high WPR rate yet a high coverage ratio. The inference is that the agricultural wages earned by the aged are not adequate to bring the target population above destitution, or alternatively the aged beneficiaries covered are not doing any work and hence are dependent on the DALP. It also needs to be pointed out that in many of the districts, agricultural operations are seasonal (Ramnathapuram, Pudukkottai etc.) and hence the target population may still be below the subsistence level.

Expenditure on OAP Pension Schemes

Table 7.9 shows the category-wise expenditure on OAP schemes for 1995–6 and 1999–2000. The total expenditure on all OAP schemes for the elderly 60+ population has increased from Rs 382.28 million in 1995–6 to Rs 820.95

million in 1999–2000, a growth rate of 21.06 per cent at current prices. The per beneficiary expenditure has increased from Rs 1097.00 in 1995–6 to Rs 1619.66 in 1999–2000 due to the enhancement in the rate of pension from Rs 75 to Rs 150 during that period.

OAP (Normal) accounted for 77.21 per cent of total OAP expenditure in 1999–2000. The next largest scheme, financially speaking, was DALP—accounting for 16.37 per cent. The DPH, DWP and DDWP account for only 6.42 per cent of expenditure. The expenditure on OAP schemes in 1999–2000 formed 0.41 per cent of total revenue expenditure.

TABLE 7.9—EXPENDITURE ON OAP PENSION SCHEMES FOR ELDERLY 60+ POPULATION IN TAMIL NADU

(Rs in lakhs)

Category	*Expenditure 1995–6*	*% to Total*	*Expenditure 1999–2000*	*% to Total*
1. Old Age Pension (normal)[1]	2748.64	71.90	6338.79	77.21
2. Destitute Physically Handicapped[2]	47.54	1.24	79.20	0.96
3. Destitute Widows[2]	99.91	2.62	342.90	4.18
4. Destitute Agri. labourers[1]	897.58	23.48	1343.69	16.37
5. Destitute Deserted Wives[2]	29.15	0.76	104.91	1.28
Total Expenditure (in lakhs)	3822.82	100.00	8209.49	100.00
Total Expenditure (in crores)	38.23		82.09	
Revenue Expenditure (in crores)[3]	10,910.57		20,166.02[4]	
Exp. on OAP (60+) as % of Revenue Expenditure	0.35		0.41	
Per Beneficiary Expr. (in rupees)	1097.00			1619.66

Sources: 1. District Collectors of Tamil Nadu.
2. Based on the total expenditure for the targeted beneficiaries, the per beneficiary expenditure for three categories (DPH, DWP and DDWP) has been calculated and the expenditure for 60+ age group has been arrived at.
3. Appendices to Budget Speech, 1999–2000.
4. Budget Memorandum Part-I, 2000–01.

Health Care, Housing and Other Social Services for the Elderly

Illnesses

With advancing age, the elderly are afflicted by perennial health problems and chronic diseases and illnesses, sometimes of a multiple nature. As a result, their functional capacity often gets affected due to the impairment of vision, hearing and movement. Hence, they require special medical and nursing care and long-term management of illnesses at home and in medical institutions.

Major diseases like blood pressure, heart disease and diabetes among the elderly are more prevalent in urban areas as compared to rural areas due perhaps to urban lifestyles. National Sample Survey Organization data from the 52nd Round (1995–6) reveal that the prevalence of chronic diseases is higher among men than among women, in both rural and urban areas.

There are also age-specific diseases which affect the elderly such as dementia. In addition, the high prevalence of multiple co-existing physical conditions, such as incontinence, hip fracture and sensory loss, influence mental health through the loss of self-esteem and independence. Moreover, changes in social patterns alter the role of the

elderly and the ways in which they are valued. These changes can lead to poor mental health outcomes, such as depression, anxiety and even suicide.

While no comprehensive studies are currently available in Tamil Nadu on the morbidity pattern among the elderly *per se*, a study conducted at the national level by the Indian Council of Medical Research (ICMR) on the disabilities of the geriatric population found that 88 per cent have visual problems, 40 per cent locomotive difficulties, 18.7 per cent suffer from neurological problems and 8.1 per cent from psychiatric difficulties. Another ICMR study found that 20.74 per cent were manic depressive. What can be said about Tamil Nadu is that it has one of the lowest prevalence rates of physical (not other) disabilities in both urban (31.4 per cent) and rural (33.1 per cent) areas (Table 7.10).

TABLE 7.10—PREVALENCE RATE (PER ONE LAKH PERSONS) OF ANY PHYSICAL DISABILITY AMONG PERSONS AGED 60 YEARS AND ABOVE BY SEX

		Males	*Females*	*Persons*
Tamil Nadu	Rural	40,435	34,879	37,913
	Urban	33,391	29,586	31,479
India	Rural	38,002	42,455	40,247
	Urban	16,559	36,696	35,608

Source: NSSO, 52nd Round, 1995–6.

The elderly, particularly women, are also disproportionately poor and are, therefore, more likely than the general population to be malnourished. Lack of food can lead to problems such as confusion and forgetfulness, problems which are often wrongly diagnosed to make things worse. For example, a patient exhibiting symptoms of confusion could be assumed to have an organic disorder when he or she may really be suffering from malnutrition. Another scenario might be that the community, expecting the elderly to be confused and slow as normal accompaniments of ageing, will not recognize the symptoms of malnutrition and not encourage the elderly to seek treatment. Thus, problems caused by malnutrition that mark symptoms of organic disorders and leave patients undiagnosed are widely prevalent.

Institutional Care and Social Security

While the State has a responsibility to take care of the elderly through the public health system, a very good system is not in place. Geriatric medicine, as a speciality department, is available only in the Government General Hospital in Chennai. While private hospitals cater more to the elderly, the costs are very high which prevent both the urban and rural poor from accessing these hospitals. All of these have put a serious barrier to the access of the poor to geriatric care.

Institutional care for the elderly is, therefore, mainly provided by voluntary non-profit organizations such as religious charitable organizations. The Madras Institute of Ageing, in a monograph entitled 'Care for Elderly' (1989), listed 329 institutions all over the country which are involved in taking care of the elderly. According to this study, Tamil Nadu and Kerala have more elderly care institutions than other States in India, with 71 old age homes in Tamil Nadu and 70 in Kerala. On the whole, the southern States (Tamil Nadu, Kerala, Karnataka and Andhra Pradesh) accommodate 57 per cent of all old age homes. In recent years, the number of new homes started is much higher in Tamil Nadu and Andhra Pradesh (Irudayarajan, 1999).

Old age homes are still required for the poor aged and for the sick and handicapped elderly. Even for the non-poor, the number of old age homes is too few and these are very often crowded. There is also greater

need for day care centres because children and grandchildren cannot leave the elderly alone at home when they go out to work.

TABLE 7.11—NUMBER OF OLD AGE HOMES AND DAY CARE CENTRES UNDER FUNDING FROM GOI

	Tamil Nadu	*All India*
1. No.of old age homes	20	234
No. of old persons	500	5850
2. No. of day care centres	27	398
No. of old persons	1350	19,900

Source: Ministry of Social Justice and Empowerment, Government of India quoted in 'Elderly in India, Profile and Programmes, 2000', CSO, GOI.

A more long term policy is also needed. With a staggering ageing population in Tamil Nadu, provision of health care for the aged at the PHC level has to be thought of. Doctors as well as paramedical staff in PHCs have to be imparted training in geriatric care so that basic disorders among the aged can be attended to at that level.

Institutional care, moreover, has to be supplemented by social security. Until recently, there was no social security scheme to provide medical care to people after their retirement from service. Recently, however, there have been attempts to extend social security benefits to retired government officials at least. The Central Government Health Service Scheme and the Employees State Insurance (ESI) scheme have been extended to Central Government officials. In Tamil Nadu, retired government employees are permitted to avail of medical facilities in government hospitals. **Nonetheless, there is no arrangement to provide medical care to the large number of senior citizens who are not covered by these schemes, particularly the poor. They have to depend upon the public medical service.**

Public sector insurance companies have mediclaim policies but these are generally targeted at the elderly belonging to the middle income groups who have regular income. Moreover, most of the schemes offer no medical insurance for those beyond 70 years of age. It is this group which is in greater need of medicare than others. But the rate of premium is higher for this age group and that too in a period when there is a fall in income. With the opening up of the insurance sector to joint ventures from overseas insurance companies, it is possible that appropriate schemes will be developed to meet the needs of the aged.

Policy Imperatives

As illustrated above, the demographic transition that has taken place during the last two decades has created an imbalance in the age structure of the population, namely the elderly constitute an increasing share of the population today. These demographic changes have been accompanied by socio-economic changes such as the emergence of nuclear families, erosion of traditional family systems and changing values of the younger generation *vis-à-vis* the elderly. These changes have serious implications for the elderly.

Hence, the future size and composition of the elderly, based on these demographic changes, have to be considered in assessing their needs in terms of physical and mental health. A holistic policy for the aged has to be formulated. The broad features of such a policy should address geriatric care in general (health security), financial concerns (social security) and institutional support. Policy imperatives for each of these are highlighted below.

Health Security

- Government hospitals need to have geriatric wards with a geriatric specialist. Further, elderly out-patients should receive priority attention from doctors so that they do not have to wait in long queues.
- There should be integrated care addressing both the physical and mental needs of the elderly. Since the elderly are more likely to seek treatment for physical disorders than for mental problems, any attempt to treat mental disorders will be most effective, if it is part of the existing system to treat physical ailments. This would also be cheaper.
- Primary healh centre doctors and paramedical staff should be given basic training in the treatment of the elderly. Bare-foot doctor programmes should be evolved in which paramedics conduct house-to-house visits to screen physical and mental health problems of the elderly, particularly in rural areas.
- Multi-purpose day care centres that offer recreational facilities and other services such as medical screening and counselling, both for the elderly and their families, should be established.
- Research is needed to develop acceptable programmes of care to meet the demands for long-term care, including home care and institutional care. Epidemiological studies are required on the prevalence and incidence of major illnesses of the elderly in Tamil Nadu, so as to develop appropriate care systems.

Financial Security

- The government must revise the two eligibility criteria for OAP, namely that the pensioner should have no family support and no means of subsistence. These criteria are harsh, and it is evident from the facts that the coverage ratio is just 12.18 per cent for all OAP schemes put together.
- Social assistance should not only target individuals, but also the families that take care of them. It is, therefore, desirable to remove the eligibility criterion according to which poor elderly people with close relatives are excluded from the OAP scheme (Midgley, 1993). Instead all those below the poverty line can be covered.
- The poverty criterion should be applied with reference to the beneficiary and not with reference to the income of the family of the beneficiary. Even if all those who are below the poverty line in the State are covered (assuming that poverty is spread uniformly across all age groups), 31 per cent of the estimated 4.1 million elderly population will be brought under the OAP umbrella, as against the present 12.18 per cent. At present, the per beneficiary cost of Rs 1619 (excluding cost of free noon meal and free dhothi/saree) works out to a total expenditure of Rs 2.09 billion, which is just about 1.04 per cent of the total revenue expenditure. An index linked OAP may also be considered, as it gives a relatively stable income and may provide an important source of income for the children of the pensioners, encouraging them to take care of their parents.
- Access to OAP schemes also needs to be made simpler and sanction of OAP made promptly. The ideal solution would be to entrust this work and responsibility to the village or block level. The Gram Sabha could be the forum through which beneficiary selection is made and OAP promptly sanctioned. The payment of OAP could be either at the panchayat level or at the taluk level as at present.
- Legislative measures to ensure care of the elderly by children can be passed, as has already been done in some States. In essence, such a measure would imply that young people should contribute to the maintenance of the aged (Jhabvala and Subrahmanya, 2000). Such a law will also take some financial burden of the State government to provide for the elderly.
- For the above to happen, the bread-winner in the family should be totally exempted from income tax, so that it serves as an incentive to take care of the elderly in their old age. Non-income tax payers can be given a special allowance through the PDS.

Institutional Care

- While payment old age homes are increasing in Tamil Nadu, these are primarily targeted towards the non-poor who can afford it. Free old age homes for the poor are very crowded in Tamil Nadu and there are long waiting lists for taking in people. Government intervention is required for setting up old age homes exclusively for the poor and destitute elderly who have no one to take care of them.
- Grant assistance from the Government of India for the construction of old age homes should be oriented towards NGOs and charitable institutions which provide free old age homes. The State Government can consider providing free electricity and free water supply to these old age homes.

8. The Road Ahead: Tamil Nadu in the New Millennium

Chapter

8

The Road Ahead: Tamil Nadu in the New Millennium

In the preceding chapters of this HDR, we have attempted to summarize the human development gains as comprehensively as possible, while at the same time identifying the challenges that have to be overcome in the coming years. This final chapter attempts to highlight Tamil Nadu's strategy for the future to meet these challenges and progressively reduce the extent of human deprivation among different sections of the people. The recommendations set out are in the nature of broad strategies that would have the effect of bringing social and economic development in various areas into closer alignment with human development objectives. There is considerable strength in the argument that these objectives should not be treated as ancillary considerations, to be addressed after economic development policy has been worked out, but to bring them into the heart of development policy formulation itself. While there are many international examples of economic and human development taking diverging paths, it also seems clear from general experience that the most sustainable development in the long run is that in which human development is fully integrated. The recommendations made in this chapter build upon this latter premise.

Income, Employment and Poverty

In a State where 65 per cent of the population lives in rural areas and is dependent on agriculture for a living, it is obvious that any discussion on increasing employment and income has to necessarily centre around the primary sector's contribution to NSDP. Viewed in this context, the declining share of the primary sector to NSDP (18.76 per cent) over the last three decades is an area of concern. There has, after all, been no decline in the share of the labour force in agriculture; this implies that productivity per person as well as the relative productivity of agriculture have come down. With a heavy concentration of the State's population in rural areas, there is a need to increase the contribution from this sector. This would increase employment opportunities in rural areas, arrest the growing rural–urban migration and reduce pressure on the urban infrastructure. It would also serve as the main plank for the food and nutrition security of the State and provide a platform of growth for agro-based industries. The State aims at a growth rate of 4.0 per cent in this sector. It might appear a daunting task but developments in biotechnology, IT and physical infrastructure would assist in achieving a higher growth rate. In this context, some thrust areas—indicative of the path that the State should take in the next few years—are highlighted.

- Agriculture should be developed through systematic and cost effective watershed approaches with people's participation.

- While ensuring food security with a stabilization of rice cultivation in about 2 million hectares, cultivation of commercial crops with a market advantage should also be encouraged.
- Bringing wastelands under cultivation through agro-forestry and horticultural crops should be another priority. This would stimulate market-linked horticulture development including processing and value addition. Agro-based industries contributing to value additions need to be encouraged so that the rural sector becomes a source of employment and income.
- Livestock development, already moving in the right direction in the State, should be consolidated by improving livestock nutrition and care. Quality of livestock products and effectiveness of support services should be ensured and private enterprises and farmers should be encouraged. The sector has a huge potential to supplement income levels in rural areas and at the same time contribute to a vibrant dairy industry.
- The informal sector building industry offers tremendous scope for providing employment, especially in rural areas, if it is properly nurtured and encouraged. Housing activity generates economic growth and has a multiplier effect on other sectors of the economy. Fiscal policy needs to be tuned towards encouraging this sector.
- With structural changes taking place in the economy, the industrial and service sectors will have to play a greater role. However, with greater automation and advent of IT, employment opportunities for semi-skilled and unskilled workers in this sector will decline over the next decade. Attempts will have to be made, therefore, to skill the workforce according to market demand.

Economic growth must target poverty reduction. The State has done well to reduce poverty by over 35 percentage points from 56.5 per cent in 1973–4 to 21.12 per cent in 1999-2000. Still Tamil Nadu ranks eighth highest in the country in terms of people living below the poverty line. Amongst southern states, it has the highest headcount ratios. What is of greater concern is that Tamil Nadu ranks second in the country in terms of inequality of consumption (32.3), as revealed by the Gini index. Districts such as Tiruvannamalai, Thanjavur, Salem, Kanniyakumari and Tirunelveli have high poverty levels as well as high consumption inequality, indicating a high degree of deprivation. The reasons for poor performance amongst certain districts will have to be ascertained and remedial measures introduced.

Health

During the last two decades, Tamil Nadu has achieved a significant stabilization of population growth and has brought down MMR and IMR substantially. The State's institutional health care system has been considerably strengthened in terms of specialities and equipment. Yet, there are disquieting features of the health sector, which need to be recognized to revamp the system so that we get as close as possible to Kerala. For example, the CBR has been hovering around 19-20 and IMR has not shown a great decline during the nineties, still standing at 48 as per the NFHS-2 survey. This is mainly due to neo-natal mortality. There are other worrying aspects like significant rural–urban differentials, inter-district variations, stagnant neo-natal mortality and high female IMR. The early neo-natal mortality has been persistently high and accounts for 58 per cent of all infant deaths. The son-preference in some districts like Dharmapuri, Salem and Theni has a disturbing fallout in terms of foeticide and female infanticide. As per NHFS-2 survey, MMR for the State as a whole is high, it is abnormally high in districts like Salem, Tiruchirapalli, Tirunelveli, Madurai and Dharmapuri.

It may be argued that a reduction in birth rate does not benefit the State when it comes to devolution of resources from the Central Government or allotment of number of seats to the Parliament, but that needs to be handled at a different level. The retention in CBR has its spin-off in lesser pressure on the State's economy in all its spheres—education, health care and infrastructure to name a few. Thus, in the future the following points need consideration.

- Ideally, the CBR should be reduced from the current 19.3 to about 14 by 2010. This is not unachievable if done on a campaign mode, enhancing the ideal age at marriage to 22 for girls and the ideal age for child bearing between 23-7 years with a three year gap between one child and another—the latter would reduce child mortality and morbidity.
- The TFR should be brought down from 2.0 to 1.5 by 2010.
- Infant mortality rate needs to be reduced to at least 40 by 2005 and 30 by 2010 and this is possible only with the reduction in neo-natal and peri-natal mortality rates by 70 per cent. To ensure this, focus has to be laid on early neo-natal registration, monitoring the weight gain of mothers and increasing it by 10 kgs during pregnancy by maintaining mother care centres, stress on intake of food with micro-nutrients by mothers and with supplements of iron/folic acid tablets and Vitamin 'A' capsules, tetanus toxoid immunization and increasing the level of institutional deliveries.
- Life expectancy needs to be raised from the present level of 66 to 75 by the next decade.
- Maternal mortality rate should be brought down from its present 1.5 per 1000 to less than 1 by the end of the decade.
- The NHFS-2 morbidity data for Tamil Nadu are not very encouraging and the reasons for the prevalence of specific diseases need to be closely studied and remedial measures initiated to reduce the incidence of diseases.
- While rural health care requirements are taken care of through a network of PHCs, smaller municipalities and town panchayats are lagging behind in such facilities. It would be necessary to fill this gap in urban areas also, which have been a neglected area so far.
- Vector-borne diseases like malaria and filaria, water-borne diseases like hepatitis, and communicable diseases like tuberculosis and leprosy need to be fully eradicated.
- Many of these concerns can be addressed by improving the living conditions of the poor. The correlation between health and living conditions is well established. Providing decent shelter, drinking water, electricity and sanitation facilities is essential if health indicators in the State are to improve. The composite districts of Thanjavur, Tiruchy, Salem and Cuddalore and the districts of Dharmapuri, Ramanathapuram, Pudukkottai and Sivagangai rank high in the index of deprivation of these facilities. Resource allocation should be based on the extent of deprivation, rather than on an adhoc basis, if the living conditions are to improve. Appropriate strategies are required for tackling the problems of urban slums, by attacking the root of urban poverty.
- With an increase in population of the elderly, geriatric care needs to assume special significance.
- Tamil Nadu has the highest incidence of HIV cases and health education and prevention of HIV should be stepped up.
- Eradication of blindness is another priority area in the current decade which needs continued attention.

It is possible to achieve the above if a comprehensive health policy is drawn up addressing each of the issues. Distinct disparities in health care and incidence of diseases should be taken into account while allocating resources under such a design.

Educational Attainment

Data from the 2001 Census show that the State has performed reasonably well in raising literacy levels (see chapter on Literacy and Education). The encouraging aspect of the literacy scene is narrowing down of the gender gap by more than 4.5 percentage points—from 22.42 per cent in 1991 to 17.78 per cent in 2001. However, Tamil Nadu is still way behind Kerala's gender gap of 11.6 per cent. Female literacy at 64.56 per cent implies that one-third of the females in the 7 + age group are illiterate, and in 10 districts this figure is more than 40 per cent. We have strongly argued earlier (see chapter on Literacy and Education) that female literacy has a visible impact on sending children to school even amidst poverty. Female literacy also has its impact on lower child and infant mortality,

improved standards of hygiene and greater political participation. Therefore, a concerted effort is required in the next decade in increasing female literacy, especially in Dharmapuri district where female literacy is less than 50 per cent, the Tiruvannamalai, Cuddalore and Villupuram belt, the Perambalur–Ariyalur belt and the Salem, Namakkal and Erode belt where the literacy is less than 57 per cent.

2001 Census data on literacy rate by age group are yet to be published and hence developments in enrolment and retention cannot be assessed precisely. However, the detailed analysis made earlier in this report shows that for 'Universalization of Elementary Education' to become a reality, there is a need for focused strategies in improving children's enrolment, improving retention, reducing drop out and improving the quality of education. The government has taken a number of initiatives such as opening of new primary schools, upgrading primary schools to middle schools for better access to schools, and has recruited a large number of teachers during the last five years. Though GER at the primary school level in 1998-9 is 105 per cent, in eight districts, the enrolment is less than 100 per cent and ironically six out of these eight districts are covered under DPEP. The GER for girls also reveals a similar pattern. At the middle school level the GER is only 89 per cent where reportedly there are 4 lakh children out of school. At the high school and higher secondary levels, the gross enrolment is only 66 per cent and 30 per cent respectively, and the gender differential across districts is quite substantial.

Therefore, a reorientation of strategies is required if we are to achieve Universalization of Elementary Education. A number of priorities are in order.

- Mapping of schools needs to be done to ensure that new schools are opened with due care, after a rational assessment of the needs—the State's resources are limited and this has to be borne in mind while opening new schools. However, the declining birth rate may result in some of the schools not having an adequate number of children at the primary school level in the next decade, as is being experienced by neighbouring Kerala.
- Enrolment of girls should receive utmost priority to ensure that all school age girls attend school at least at the elementary level. Parents need to be educated about the economic and social benefits of educating girls.
- The estimated 1.5 million drop outs in the age group of 9–15 should be covered through NEF by increasing the number of non-formal education projects, currently designed to cover only 10–15 per cent of such children.
- Improving school infrastructure should receive attention and rational redeployment of teachers is also called for so as to reduce the pupil–teacher ratio to manageable levels in rural areas. Training in multi-grade teaching should receive the attention that it deserves, as teachers have to teach different classes at the elementary level.
- The syllabus should be child-centered and constantly revised to make learning 'joyful'.
- Adult literacy efforts should be revamped and post-literacy campaigns made effective to see that the neo-literates do not relapse into illiteracy.
- While bringing elementary education under the ambit of local bodies may be ideal, this is a major policy decision to be taken in the long term. Meanwhile, local communities and parent–teacher associations should be actively invloved in the running of schools at the primary and upper primary levels so that the teachers become accountable—this would go a long way in increasing enrolment and the quality of teaching. Such involvement should be formalized by a government order so as to be effective.

It is strongly recommended that these suggestions be put in place with a new policy framework with appropriate reallocation of financial resources among districts which need them so that the objective of Universalization of Elementary Education is within reach by the end of the current decade. At the high school and higher secondary levels also, similar efforts are required to reach at least 60 per cent coverage of school age population, especially girls.

Removing Inter-district Disparities

The HDI and GDI are tools which not only give an insight into the level of human development in the State and provide a platform for comparison with other States and countries, but are also important indicators of inter-district disparities. The education, health and income disparities across districts are very distinctly captured by the indices. The indices of income, education and life expectancy also point to the fact that higher income does not imply higher levels of human development in terms of health and education. Though Salem and Virudhunagar have a higher district per capita income than the State average, their HDI is lower than the State average. The causative factors are found in the relatively lower LEB and educational levels. Similarly, though Madurai has a much higher district per capita income (15 per cent higher) than the State average, its HDI is only marginally above the State HDI. These facts are only illustrative of the concept that higher per capita income does not necessarily translate itself into higher levels of human development.

Income disparities are fairly widespread across the State. Cuddalore, Villupuram and Tiruvannamalai districts as also the rice belt of Thanjavur, Tiruvarur and Nagapattinam have low district per capita income, and are dependent primarily on agriculture. Similarly, the drought prone districts of Pudukkottai, Ramanathapuram, Sivagangai and Dharmapuri have low per capita income levels. Kanniyakumari is the only district which despite having a low district per capita income has the second highest HDI in the State thanks to its very high level of educational attainment and health care. It is also interesting to see that the bifurcated districts show a definite pattern. For instance, Namakkal district carved out of the erstwhile Salem district, and Theni district formed out of the composite Madurai district have lower per capita income than the State average while the present Salem and Madurai districts have per capita incomes much above the State average. Whatever the rationale behind the bifurcation, it is clear that the newly carved out districts require focused development strategies aimed at increasing per capita income levels.

The LEB index which reflects the State of health care, is lower than the State average in 15 out of 29 districts in the State. The higher LEB levels in some districts such as Chennai, Kanniyakumari and Nilgiris, have cushioned the State average, giving it respectability. The inter-district disparities are wide; and these need to be narrowed, by drawing up specific programmes as already pointed out in the section on health.

There are distinct inter-district disparities in educational attainment. Villupuram, Cuddalore, Tiruvannamalai, Salem, Dharmapuri, Namakkal and Pudukkottai districts can be regarded as poor in terms of educational attainment. Erode, Perambalur and Dindigul districts have medium levels of educational attainment but these are lower than the State average. The issues in educational deprivation in the above districts need to be addressed and steps taken for removing the disparities as indicated earlier.

Regional disparities are inevitable in the process of development. The disparities in the three indicators of development are quite pronounced. The northern Tamil Nadu belt of Cuddalore, Villupuram and Tiruvannamalai is perhaps the most deprived; the delta region comprising composite Thanjavur and Tiruchy districts, despite being the rice bowl of the State, shows a low level of human development; the drought prone region of Pudukkottai, Sivagangai and Ramanathapuram has a low level of human development due to different reasons; in the western region, Dharmapuri and Namakkal districts stand out. It may be pointed out that many of the above districts were bifurcated or trifurcated in the eighties and the nineties on the ground that the composite districts were large and unwieldy for development administration, particularly of the social sectors. Yet, several years after bifurcation, these districts have progressed very slowly and are yet to catch up with the advanced districts.

Ensuring Full Equality for Women

The difference between GDI and HDI values is very marginal across districts indicating minimal gender inequality. However, the GDI shows that there are wide disparities between districts in Tamil Nadu and as in the case of

HDI, high values of GDI in certain districts like Chennai, Kanniyakumari and Nilgiris have smoothened out the State average. The first concern, therefore, is to narrow the inter-district disparities. Ramanathapuram, Dindigul, Pudukkottai, Tiruvannamalai, Villupuram, Perambalur and Dharmapuri have a low GDI in relation to the State average GDI, indicating gender inequality in human development. A further analysis shows that Dharmapuri, Perambalur, Theni and surprisingly Madurai have a relatively low life expectancy. While this indicates lower female health care, on a further analysis it is attributable to high female IMRs in these districts. The female education attainment index is quite low in Villupuram, Tiruvannamalai, Cuddalore, Salem, Namakkal, Dharmapuri and Tiruvarur districts. The female per capita income is also low in these districts. It is, therefore, clear that these districts have a very pronounced gender inequality. A comprehensive programme should take care of the following aspects: increase life expectancy through prenatal care for expectant mothers, immunization, creation of awareness against female infanticide, increasing education attainment levels through higher female literacy, educating mothers about the benefits of sending the girl children to school, and increasing female per capita income so as to narrow the wage differential between males and females.

A gender policy of the State emphasizing equality for women needs to be drawn up. Such a policy, among other things, should focus on the following:

- Ensuring higher wages for women.
- Expanding non-farm activities for women.
- Gender equity in health and education.
- Highlighting gender-specific issues of vulnerable groups.
- Drawing up a blueprint for effective prevention of crimes against women.

The State Commission for Women had started a pilot project for gender sensitization of the police. Subsequently, a massive gender-sensitization programme was taken up to cover all the men police personnel including senior officers in the State. A capsule course on re-sensitization was also conducted in batches for all women police personnel. Gender as a subject finds a place in the training modules of police training institutions. While a number of NGOs are working in the area of gender rights and gender sensitization, training programmes should be organized on human right laws for women networks and community based organizations such as women's SHGs. Any gender policy should invariably involve women as stakeholders.

Social Security for the Aged

According to one estimate, the proportionate share of the elderly to the State's total population is projected to increase to 11.43 per cent by 2011. The projected increase in the population of the aged is next only to that of Kerala. The ageing of the population is due to an increase in longevity and fall in the death rate because of better health care services and improvement in the general standard of living. Due to the slow break-up of the joint family system consequent to rural–urban migration in particular, the responsibility for the welfare of the elderly is increasingly falling on the community and the State. The aged need not only income security but also health security. Geriatric care is yet to become a full-fledged discipline in hospitals except in major cities. The aged also need emotional security, as they feel lonely, helpless and unwanted by society. They need an environment where they can live with dignity and self-respect. Social security for the elderly would, therefore, have to be holistic, not limited to providing financial security through old age pensions.

Allocation of Resources

Intra-state disparities in human development can be mitigated to a large extent only if resources are allocated keeping in view the extent of deprivation. As pointed out earlier, economic development policies need to be integrated with human development objectives.

Tamil Nadu has a relatively low per capita Plan outlay among the major States in India. The main reason is that Tamil Nadu's own resources for the Plan have been inadequate to sustain a higher level of Plan outlay because non-plan expenditures have absorbed a relatively high percentage of its total expenditures. Current surpluses have been negative and have, therefore, not made any contribution to outlays on capital formation in recent years. The major share of current outlays is due to wages, salaries and pension of government employees. Comparison with other major States indicates that government employees were relatively large in number in Tamil Nadu. The burden on the exchequer has increased substantially due to the adoption of Central Government pay scales to the State Government employees. The tax–GDP ratio of the State is one of the highest among the major States and hence the scope for mobilizing resources for plan outlays through additional taxation is quite limited.

Unless steps are taken to bring down non-development expenditure, plan outlays in real terms will remain stagnant in the near future. Zero base budgeting of staff in each department should be taken up and to begin with, redeployment of surplus staff effected. Urban concentration of government staff, particularly in education and health sectors, is very pronounced; the high teacher–pupil ratio in rural schools and low medical and health staff availability in PHCs is a case in point. For instance, suitable redeployment of health staff from districts which are performing well in terms of health indicators to districts with poor health indicators such as high MMR and high death rates would help in achieving the primary objective of improving health care in these districts. Apart from this, economy in non-plan expenditure should be enforced vigorously. The State Planning Commission has already performed a detailed exercise in identifying schemes which have lost their utility to be weeded out and these recommendations should be implemented forthwith.

A critical review is needed on the direction in which plan funds are flowing to the districts. In the future, allocation of resources to social sectors should be higher in districts which have low HDI and GDI values. The progressive districts with high HDI and GDI values have reached a stage, where it should be possible to encourage private participation in the social sectors. This would make available a larger share of funds to the needy districts. Decentralized district planning is being initiated in the State and this should be used as a tool for improving social sector performance, particularly in districts which are lagging behind. Unless resources flow to the deprived districts, it is difficult to expect improvements in social sector performance and achievement of human development objectives. Cost recovery in the provision of social services, especially from the non-poor will have to be thought of, in view of constraints of limited State resources. Appropriate fiscal incentives should be introduced to give a fillip to private sector participation.

Mere allocation of funds to the deprived districts would not be adequate. Appropriate monitoring of use of resources is needed to check leakages in government programmes and inefficiencies in investment, maintenance and operations which reduce the ratio of benefits to costs in government programmes. If this is done, Tamil Nadu will be able to add to its substantial achievements.

Appendix Tables

A1. Index and Indicators

A1.1—HUMAN DEVELOPMENT INDICATORS

S.no.	Districts	Life expectancy at birth (yrs)[1] (1997)	Literacy rate[2] (2001)	Literacy index	Combined gross enrolment ratio[3] (1998–99)	Combined enrolment index	Per capita Income[4] (Rs) (constant prices, 1993–94) 1998–99	Real dist. GDP per capita in PPP	Real dist. GDP per capita (Rank)
1	2	3	4	5	6	7	8	9	10
1.	Chennai	74.21	80.14	0.801	100.83	1.008	18,127	3328.87	2
2.	Kancheepuram	69.26	77.61	0.776	75.32	0.753	24,553	4372.82	1
3.	Thiruvallur	67.38	76.54	0.765	78.76	0.788	10,197	1816.06	18
4.	Cuddalore	68.87	71.85	0.719	80.88	0.809	8359	1488.71	24
5.	Villupuram	65.07	64.85	0.649	73.65	0.737	6813	1213.38	29
6.	Vellore	65.55	73.07	0.731	88.09	0.881	12,527	2231.02	8
7.	Tiruvannamalai	66.57	68.22	0.682	79.73	0.797	7033	1252.56	28
8.	Salem	65.24	65.72	0.657	77.93	0.779	11,805	2102.44	11
9.	Namakkal	66.22	67.66	0.677	83.17	0.832	10,661	1898.69	15
10.	Dharmapuri	61.83	59.23	0.592	69.83	0.698	12,047	2145.54	9
11.	Erode	69.18	65.51	0.655	83.63	0.836	12,902	2297.81	6
12.	Coimbatore	69.30	76.95	0.770	83.84	0.838	16,585	2953.74	3
13.	Nilgiris	69.19	81.44	0.814	79.89	0.799	11,937	2125.95	10
14.	Trichy	67.52	79.16	0.792	83.86	0.839	11,008	1960.49	13
15.	Karur	68.10	68.74	0.687	81.98	0.820	10,711	1907.60	14
16.	Perambalur	62.08	65.29	0.653	80.38	0.804	9129	1625.85	20
17.	Thanjavur	64.38	76.07	0.761	84.06	0.841	8164	1453.99	25
18.	Tiruvarur	66.00	76.90	0.769	84.07	0.841	7594	1352.47	27
19.	Nagapattinam	66.36	76.89	0.769	81.44	0.814	10,488	1867.88	17
20.	Pudukkotai	65.53	71.66	0.717	75.29	0.753	8362	1489.25	23
21.	Madurai	62.15	78.65	0.787	92.15	0.922	13,698	2439.58	4
22.	Theni	62.67	72.01	0.720	88.55	0.886	9989	1779.01	19
23.	Dindigul	64.64	69.83	0.698	82.49	0.825	12,751	2270.92	7
24.	Ramnad	65.18	73.05	0.731	82.46	0.825	8523	1517.92	21
25.	Virudhunagar	66.59	74.23	0.742	77.57	0.776	11,760	2094.42	12
26.	Sivagangai	67.65	72.66	0.727	85.1	0.851	7902	1407.32	26
27.	Tirunelveli	65.79	76.97	0.770	87.94	0.879	10,526	1874.65	16
28.	Thoothukudi	68.26	81.96	0.820	93.16	0.932	13,420	2390.06	5
29.	Kanniyakumari	72.65	88.11	0.881	89.41	0.894	8461	1506.88	22
	STATE	66.74	73.47	0.735	83.15	0.832	11,775	2097.09	

Sources: 1. Vital Events Survey conducted by DANIDA Health Project (1997).
2. Census, 1991.
3. School Education Department, Chennai.
4. Department of Economics and Statistics, Chennai.

A1.2—HUMAN DEVELOPMENT INDEX

S.no.	Districts	LEB index	Education index	Income index	HDI Value	HDI Rank	Real GDP per capita (PPP$) rank minus HDI rank
1	2	3	4	5	6	7	8
1.	Chennai	0.820	0.870	0.580	0.757	1	1
2.	Kancheepuram	0.738	0.768	0.631	0.712	2	–1
3.	Thiruvallur	0.706	0.773	0.484	0.654	12	6
4.	Cuddalore	0.731	0.749	0.451	0.644	16	8
5.	Villupuram	0.668	0.678	0.417	0.587	28	1
6.	Vellore	0.676	0.781	0.518	0.658	11	–3
7.	Tiruvannamalai	0.693	0.721	0.422	0.612	26	2
8.	Salem	0.671	0.698	0.508	0.626	24	–13
9.	Namakkal	0.687	0.728	0.491	0.636	20	–5
10.	Dharmapuri	0.614	0.628	0.512	0.584	29	–20
11.	Erode	0.736	0.716	0.523	0.658	10	–4
12.	Coimbatore	0.738	0.792	0.565	0.699	5	–2
13.	Nilgiris	0.737	0.809	0.510	0.685	6	4
14.	Trichy	0.709	0.807	0.497	0.671	7	6
15.	Karur	0.718	0.732	0.492	0.647	15	–1
16.	Perambalur	0.618	0.703	0.465	0.596	27	–7
17.	Thanjavur	0.656	0.787	0.447	0.630	21	4
18.	Nagapattinam	0.689	0.784	0.489	0.654	13	4
19.	Tiruvarur	0.683	0.793	0.435	0.637	19	8
20.	Pudukkotai	0.676	0.729	0.451	0.618	25	–2
21.	Madurai	0.619	0.832	0.533	0.661	8	–4
22.	Theni	0.628	0.775	0.480	0.628	23	–4
23.	Dindigul	0.661	0.741	0.521	0.641	17	–10
24.	Ramnad	0.670	0.762	0.454	0.629	22	–1
25.	Virudhunagar	0.693	0.753	0.508	0.651	14	–2
26.	Sivagangai	0.711	0.768	0.441	0.640	18	8
27.	Tirunelveli	0.680	0.806	0.489	0.658	9	7
28.	Thoothukudi	0.721	0.857	0.530	0.703	4	1
29.	Kanniyakumari	0.794	0.885	0.453	0.711	3	19
	STATE	0.696	0.767	0.508	0.657		

Source: State Planning Commission, Chennai, 2001.

A1.3—GENDER DEVELOPMENT INDEX : INCOME INDEX

S.no.	Districts	Real dist. GDP per capita in PPP$	Real GDP per capita in PPPs		Adjusted income		Equally distributed income index
			Female	Male	Female	Male	
1	2	3	4	5	6	7	8
1.	Chennai	3228.37	1815.66	4570.51	0.484	0.638	0.551
2.	Kancheepuram	4372.82	2430.18	6262.06	0.533	0.691	0.602
3.	Thiruvallur	1816.06	1011.07	2596.16	0.386	0.544	0.453
4.	Cuddalore	1488.71	821.58	2146.55	0.352	0.512	0.418
5.	Villupuram	1213.38	670.85	1746.40	0.318	0.477	0.383
6.	Vellore	2231.02	1224.36	3234.80	0.418	0.580	0.487
7.	Tiruvannamalai	1252.56	687.66	1815.39	0.322	0.484	0.388
8.	Salem	2102.44	1196.51	2943.57	0.414	0.565	0.479
9.	Namakkal	1898.69	1058.18	2711.56	0.394	0.551	0.460
10.	Dharmapuri	2145.54	1214.77	3018.37	0.417	0.569	0.482
11.	Erode	2297.81	1278.07	3287.88	0.425	0.583	0.493
12.	Coimbatore	2953.74	1653.09	4201.31	0.468	0.624	0.536
13.	Nilgiris	2125.95	1157.45	3107.18	0.409	0.574	0.478
14.	Trichy	1960.42	1073.90	2847.83	0.396	0.559	0.465

(Contd...)

(Table A1.3 Contd.)

S.no.	Districts	Real dist. GDP per capita in PPP$	Real GDP per capita in PPPs		Adjusted income		Equally distributed income index
			Female	Male	Female	Male	
1	2	3	4	5	6	7	8
15.	Karur	1907.60	1040.91	2781.75	0.391	0.555	0.460
16.	Perambalur	1625.85	888.71	2366.75	0.365	0.528	0.433
17.	Thanjavur	1453.99	788.56	2133.44	0.345	0.511	0.413
18.	Nagapattinam	1867.88	1016.08	2732.38	0.387	0.552	0.456
19.	Tiruvarur	1352.47	736.73	1975.66	0.333	0.498	0.400
20.	Pudukkotai	1489.25	810.53	2177.39	0.349	0.514	0.417
21.	Madurai	2439.58	1351.66	3503.97	0.435	0.594	0.503
22.	Theni	1779.01	983.89	2559.73	0.382	0.541	0.449
23.	Dindigul	2270.92	1252.95	3275.19	0.422	0.582	0.490
24.	Ramnad	1517.92	818.67	2240.00	0.351	0.519	0.420
25.	Virudhunagar	2094.42	1140.58	3060.33	0.406	0.571	0.476
26.	Sivagangai	1407.32	758.69	2077.73	0.338	0.506	0.407
27.	Tirunelveli	1874.65	1006.82	2778.54	0.385	0.555	0.456
28.	Thoothukudi	2390.06	1278.73	3556.68	0.425	0.596	0.498
29.	Kanniyakumari	1506.88	820.86	2201.17	0.351	0.516	0.419
	STATE	2097.09	1157.16	3024.19	0.409	0.569	0.477

Source: State Planning Commission, Chennai, 2001.

A1.4—Gender vs Human Development Ranks

S.no.	Districts	GDI value	GDI rank	HDI value	HDI rank
1	2	3	4	5	6
1.	Chennai	0.776	1	0.757	1
2.	Kancheepuram	0.710	2	0.712	2
3.	Thiruvallur	0.651	13	0.654	12
4.	Cuddalore	0.643	15	0.644	16
5.	Villupuram	0.582	28	0.587	28
6.	Vellore	0.655	11	0.658	11
7.	Tiruvannamalai	0.608	26	0.612	26
8.	Salem	0.625	24	0.626	24
9.	Namakkal	0.631	20	0.636	20
10.	Dharmapuri	0.582	29	0.584	29
11.	Erode	0.656	10	0.658	10
12.	Coimbatore	0.697	5	0.699	5
13.	Nilgiris	0.686	6	0.685	6
14.	Trichy	0.671	7	0.671	7
15.	Karur	0.641	16	0.647	15
16.	Perambalur	0.592	27	0.596	27
17.	Thanjavur	0.629	21	0.630	21
18.	Nagapattinam	0.652	12	0.654	13
19.	Tiruvarur	0.633	19	0.637	19
20.	Pudukkotai	0.615	25	0.618	25
21.	Madurai	0.661	8	0.661	8
22.	Theni	0.628	22	0.628	23
23.	Dindigul	0.638	17	0.641	17
24.	Ramnad	0.626	23	0.629	22
25.	Virudhunagar	0.649	14	0.651	14
26.	Sivagangai	0.635	18	0.640	18
27.	Tirunelveli	0.656	9	0.658	9
28.	Thoothukudi	0.703	4	0.703	4
29.	Kanniyakumari	0.708	3	0.711	3
	STATE	0.654		0.657	

Source: State Planning Commission, Chennai, 2001.

A2 Economy Profile

A2.1—Inter-state Economy Profile, Major States

Indicators	*Ref. Year*	*India*	*Tamil Nadu*	*A.P.*	*Kerala*	*Karnataka*	*Gujarat*	*Haryana*	*M.P.*	*Maharashtra*	*Punjab*	*W.B.*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
NSDP at current prices (Rs in crs)[1]	1996–97	1,102,645	82,465	81,643	40,819	63,342	75,164	31,386	65,676	161,470	39,511	73,976
NSDP at constant (1993–94) prices (Rs in crs)[1]	1996–97	858,234	66,754	61,928	28,189	49,358	61,457	23,665	53,301	124,642	31,321	57,979
NSDP [1]												
– Agriculture as % to NSDP	1996–97	27.7	18.3	30.6	24.2	30.7	21.4	38.4	31.6	18.1	44.1	30.0
– Industry as % to NSDP	1996–97	16.5	23.7	13.6	11.6	15.7	27.1	19.2	16.5	24.1	13.4	14.1
– Services as % to NSDP	1996–97	55.8	58.0	55.8	64.2	53.6	51.5	42.4	51.9	57.8	42.5	55.9
Per capita income at current prices (in Rs)[1]	1996–97	11,554	13,985	11,242	13,089	12,729	16,366	16,729	8757	18,488	17,530	9827
Per capita income at constant (1993–94) prices (in Rs)[1]	1996–97	8987	11,320	8527	9039	9919	13,382	12,614	7107	14,271	13,896	7702
Growth of gross GDP[2]												
Pre-reform period	1980–81 to 1990–91	5.55	5.38	5.65	3.57	5.29	5.08	6.43	4.56	6.02	5.32	4.71
Post reform period	1991–92 to 1997–98	6.89	6.22	5.03	5.83	5.29	9.57	5.02	6.17	8.01	4.71	6.91
Growth of per capita gross GDP[2] Pre-reform period	1980–81 to 1990–91	3.03*	3.87	3.34	2.19	3.28	3.08	3.86	2.08	3.58	3.33	2.39
Post reform period	1991–92 to 1997–98	4.02*	4.95	3.45	4.52	3.45	7.57	2.66	3.87	6.13	2.80	5.04
Population in poverty (30 day recall)[2]	1999–2000											
– number (in lakhs)		2602.50	130.48	119.01	41.04	104.40	67.89	17.34	298.54	227.99	14.49	213.49
– as % to total population		26.10	21.12	15.77	12.72	20.04	14.07	8.74	37.43	25.02	6.16	27.02
People in poverty (%) (30 day recall)[2]	1999–2000											
– Urban		23.62	22.11	26.63	20.27	25.25	15.59	9.99	38.44	26.81	5.75	14.86
– Rural		27.09	20.55	11.05	9.38	17.38	13.17	8.27	37.06	23.72	6.35	31.85
No. of persons employed per 1000 persons (usual status)[3]												
Rural	55th Round	417	513	542	387	487	499	349	462	484	410	349
Urban	1999–2000	337	393	348	373	366	345	314	319	346	353	350
No. of persons unemployed per 1000 persons (usual status)[3]												
Rural	55th Round	7	11	5	41	4	3	3	2	9	8	12
Urban	1999–2000	18	17	15	48	13	7	9	12	23	11	30

(Contd...)

(Table A2.1 Contd.)

Indicators	*Ref. Year*	*India*	*Tamil Nadu*	*A.P.*	*Kerala*	*Karnataka*	*Gujarat*	*Haryana*	*M.P.*	*Maharashtra*	*Punjab*	*W.B.*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
Debt as percentage of GSDP[4]	1996–97	20.71*	14.88	18.54	24.10	16.27	15.93	17.65	17.27	11.56	32.33	21.47
Tax–GDP ratio[4]	Ave.1994/95 to 1996/97	8.7	8.47	5.45	8.33	8.43	7.29	6.72	4.94	6.55	6.52	5.39
% share of devt. expenditure in total expenditure[5]	1996–97	69.5	73.3	79.5	64.7	72.6	73.2	54.4	76.2	72.8	58.1	72.9
Per capita plan expenditure (in Rs)[2]	1997–98	608	675	501	906	896	846	694	447	890	904	376
Plan expendfiture as % of SDP[2]	ave.1987–88 to 1997–98	4.50*	4.60	4.28	4.99	6.49	4.51	3.94	4.97	3.97	3.94	2.70
Revenue expenditure— Per capita devt. expenditure [Rs At 1980–81 prices)[6]	1995–96	367.30*	407.00	392.00	386.50	423.50	483.40	522.50	275.80	491.20	445.50	253.10
Per capita non-devt. expenditure— (Rs At 1980–81 prices)[6]	1995–96	177.20*	165.90	141.00	212.10	155.70	164.50	396.10	109.50	178.90	391.30	123.80
Public Expenditure on Education and Health as % to NSDP[5]	1997–98	3.97*	4.12	3.63	4.80	4.25	3.72	3.30	3.75	3.32	3.91	3.79
Human Development[7]												
Life Expectancy at Birth (years)	1993–97	61.1	64.1	62.4	73.3	63.3	61.6	64.1	55.5	65.5	67.7	62.8
Infant Mortality Rate (per '000)	1999	70	52	66	14	58	63	68	91	48	53	52
Death Rate (per '000)	1999	8.7	8.0	8.2	6.4	7.7	7.9	7.7	10.6	7.5	7.4	7.1
Birth Rate (per '000)	1999	26.1	19.3	21.7	18.0	22.3	25.4	26.8	30.7	21.1	21.5	20.7
Literacy Rate (%)[8]	2001											
Persons		65.38	73.47	61.11	90.92	67.04	69.97	68.59	64.11	77.27	69.95	69.22
Male		75.85	82.33	70.85	94.20	76.29	80.50	79.25	76.80	86.27	75.63	77.58
Female		54.16	64.55	51.17	87.86	57.45	58.60	56.31	50.28	67.51	63.55	60.22
Population Growth (%)[8]												
Annual Average exponential growth	1991–2001	1.93	1.06	1.30	0.90	1.59	2.03	2.47	2.18	2.04	1.80	1.64

Note: *All States.

Source: 1. Central Statistical Organization, Delhi, 2. Union Planning Commission, 3. National Sample Survey, 4. Eleventh Finance Commission, 5. Reserve Bank of India, 6. Ninth Plan GOI, 7. Economic Survey, 8. Census 2001

A3 Demographic Profile

A3.1—INTER-STATE—DEMOGRAPHIC PROFILE—MAJOR STATES

Indicators	*India*	*Tamil Nadu*	*A.P.*	*Kerala*	*Karnataka*	*Gujarat*	*Haryana*	*M.P.*	*Maharashtra*	*Punjab*	*W.B.*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Area (in '000 sq. kms)[1]	3287	130	275	39	192	196	44	443	308	50	89
Population (in '000)[1]											
1991	846,303	55,859	66,508	29,099	44,977	41,310	16,464	66,181	78,937	20,282	68,078
2001	1,027,015	62,111	75,728	31,839	52,734	50,597	21,083	60,385*	96,752	24,289	80,221
Density (popn per sq. kms)[1]											
1991	267	429	242	749	235	211	372	158	257	403	767
2001	324	478	275	819	275	258	477	196	314	482	904
Decadal popn growth (%)[1]											
1971 to 1981	24.66	17.50	23.10	19.34	26.75	27.67	28.75	25.27	24.54	23.89	23.17
1981 to 1991	23.86	15.39	24.20	14.32	21.12	21.19	27.41	27.24	25.73	20.81	24.73
1991 to 2001	21.34	11.19	13.86	9.42	17.25	22.48	28.06	24.34	22.57	19.76	17.84
Sex ratio[1]											
1981	934	977	975	1032	963	942	870	941	937	879	911
1991	927	974	972	1036	960	934	865	912	934	882	917
2001	933	986	978	1058	964	921	861	920	922	874	934
Scheduled caste popn 1991 (in 000's)[2]											
Total	138,223	10,712	10,592	2887	7369	3060	3251	9627	8758	5743	16,081
a. Rural	112,343	8428	8759	2352	5645	1899	2675	7522	5552	4562	13,606
b. Urban	25,880	2284	1833	535	1724	1161	576	2104	3206	1180	2475
c. proportion to total popn. (%)	16.3	19.1	15.9	9.9	16.4	7.4	19.8	14.5	11.1	28.3	23.6
Total fertility rate (TFR)[3]											
1994	3.5	2.1	2.7	1.7	2.8	3.1	3.7	4.2	2.9	2.9	3.0
Mean age at marriage											
1981[1]											
a) Males	23.5	26.1	23.1	27.5	26.0	23.3	25.2	20.8	24.4	25.0	26.0
b) Females	18.4	20.3	17.3	22.1	19.3	19.6	17.9	16.6	18.8	21.1	19.3
1992–93[4]											
a) Males	25.0	26.4	23.6	28.1	26.1	23.9	23.1	22.0	24.9	20.5	25.9
b) Females	20.0	20.5	18.1	22.1	19.6	20.2	18.4	17.4	19.3	21.1	19.2
Work participation rate by residence, 1991 [1]	37.46	43.31	45.05	31.43	41.99	40.23	31.00	42.82	42.96	30.88	32.19

Note: *Excludes the population of Chhatisgarh.

Source: 1. Census of India, 1981,1991 and 2001.
2. Census of India, Series-1, Paper-II of 1992.
3. Year book 1995–96, Ministry of Health and Family Welfare, Government of India.
4. National Family Health Survey, 1992–93.

A3.2—Demographic profile—Tamil Nadu

Districts	Area (in sq.kms)	Population (in '000s)		Density (per sq. km)		Decadal popn growth (%)		
		1991	2001	1991	2001	1971 to 1981	1981 to 1991	1991 to 2001
1	2	3	4	5	6	7	8	9
1. Chennai	174	3841	4216	22077	24231	27.04	17.24	9.76
2. Kancheepuram	4433	2415	2870	545	647	28.23	26.14	18.84
3. Thiruvallore	3424	2239	2739	654	800	30.45	31.53	22.35
4. Cuddalore	3678	2123	2281	582	626	16.48	16.13	7.43
5. Villupuram	7217	2756	2944	380	406	15.89	16.08	6.83
6. Vellore	6077	3026	3483	498	573	17.79	15.14	15.09
7. Tiruvannamalai	6191	2043	2182	330	352	17.15	14.4	6.80
8. Salem	5220	2574	2993	493	573	13.67	13.43	16.28
9. Namakkal	3429	1323	1496	386	436	17.69	12.79	13.08
10. Dharmapuri	9622	2429	2833	252	294	19.03	21.61	16.66
11. Erode	8209	2320	2574	283	314	15.11	12.17	10.94
12. Coimbatore	7469	3508	4224	470	566	18.79	14.65	20.4
13. Nilgiris	2549	710	765	279	300	27.56	12.7	7.69
14. Trichy	11,096[1]	2197	2389	499	542	15.13	15.57	8.76
15. Karur	NA	854	933	284	311	10.1	12.87	9.32
16. Perambalur	NA	451	487	258	278	12.4	17.92	7.97
17. Ariyalur	NA	636	694	328	358	11.45	11.16	9.06
18. Thanjavur	3397	2054	2205	605	649	16.02	11.13	7.38
19. Thiruvarur	2161	1100	1165	508	538	12.91	12.04	5.92
20. Nagapattinam	2716	1378	1487	507	548	13.43	11.68	7.95
21. Pudukkotai	4651	1327	1452	285	312	22.11	14.72	9.43
22. Madurai	6565[2]	2400	2562	686	733	18.07	17.51	6.75
23. Theni	NA	1049	1095	342	357	14.65	12.98	4.33
24. Dindigul	6058	1761	1919	291	317	11.9	12.54	8.99
25. Ramnad	4232	1119	1183	271	287	21.36	12.11	5.73
26. Virudhunagar	4288	1565	1752	365	409	16.45	16.71	11.92
27. Sivagangai	4086	1103	1151	263	275	12.42	10.72	4.32
28. Tirunelveli	6810	2502	2801	367	411	11.62	12.53	11.97
29. Thoothukudi	4621	1456	1566	315	339	11.73	7.8	7.54
30. Kanniyakumari	1685	1600	1670	950	992	16.43	12.43	4.34
Tamil Nadu	130,058	55,859	62,111	429	478	17.5	15.39	11.19

Notes: [1]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[2]Figure relating to composite district Madurai and Theni.
Source: Census of India, 1981, 1991 and Paper 1 of 2001.

A3.3—Tamil Nadu—Sex Ratio

S.no. Districts	Sex ratio (No. of females per 1000 males)[1]					Mean age at Marriage, 1991[2]	
	All age groups			0–6 age group			
	1981	1991	2001	1991	2001	Male	Female
1	2	3	4	5	6	7	8
1. Chennai	934	934	951	962	968	27.5	21.8
2. Kancheepuram	972	962	961	970[3]	961	26.3[3]	20.7[3]
3. Thiruvallore	953	957	970	NA	954	NA	NA
4. Cuddalore	972	967	985	970[4]	938	26.2[4]	20[4]
5. Villupuram	972	969	983	NA	969	NA	NA
6. Vellore	979	978	997	962	937	26.2	20.3
7. Tiruvannamalai	979	983	996	964	952	25.3	19.7
8. Salem	939	925	929	849[5]	826	25.7[5]	19.8[5]

(Contd...)

(Table A3.3 Contd.)

S.no. Districts	Sex ratio (No. of females per 1000 males)[1]					Mean age at Marriage, 1991[2]	
	All age groups			0–6 age group			
	1981	1991	2001	1991	2001	Male	Female
1	2	3	4	5	6	7	8
9. Namakkal	969	960	967	NA	896	NA	NA
10. Dharmapuri	959	942	938	905	878	25	19
11. Erode	956	958	971	929	936	26.7	20.5
12. Coimbatore	950	952	959	966	951	27.3	21.4
13. Nilgiris	957	983	1015	968	990	26.9	22
14. Trichy	981	982	1000	955[6]	949	26.5[6]	20.9[6]
15. Karur	996	999	1010	NA	923	NA	NA
16. Perambalur	999	975	1007	NA	945	NA	NA
17. Ariyalur	975	975	1007	NA	950	NA	NA
18. Thanjavur	988	996	1020	968[7]	950	26.9[7]	21.2[7]
19. Thiruvarur	984	987	1013	NA	974	NA	NA
20. Nagapattinam	992	993	1014	NA	960	NA	NA
21. Pudukkotai	1007	1005	1015	976	965	26.3	21.3
22. Madurai	972	964	978	918[8]	927	26.3[8]	21.1[8]
23. Theni	974	964	979	NA	893	NA	NA
24. Dindigul	980	976	986	934	929	26	20.7
25. Ramnad	1030	1011	1033	960	964	25.7	21.1
26. Virudhunagar	1002	994	1011	946	962	25.6	20.9
27. Sivagangai	1046	1033	1035	958	946	26.5	21.6
28. Tirunelveli	1038	1034	1042	955	952	26.3	21.9
29. Thoothukudi	1055	1051	1049	964	953	26.4	22.2
30. Kanniyakumari	985	991	1013	970	967	28.7	23.8
STATE	977	974	985	948	939	26.4	20.5

Notes: NA: Figure not available.
[3]Figure relating to composite district Kancheepuram and Thiruvallur.
[4]Figure relating to composite district Cuddalore and Villupuram.
[5]Figure relating to composite district Salem and Namakkal.
[6]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[7]Figure relating to composite district Thanjavur, Nagapattinam and Tiruvarur.
[8]Figure relating to composite district Madurai and Theni.
Sources: [1]Census of India, 1981, 1991 and Paper 1 of 2001.
[2]'Singulate Mean Age at Marriage, Nuptiality Indices in India', International Institute for Population Sciences, Mumbai. *National Family Health Survey, 1992–3.

A3.4—TAMIL NADU—POPULATION OF SCS AND STS

(in '00s)

S.no. Districts	Scheduled Castes				Scheduled Tribes			
	Total	Rural	Urban	% to total population	Total	Rural	Urban	% to total population
1	2	3	4	5	6	7	8	9
1. Chennai	5297	0	5297	13.79	79	0	79	0.21
2. Kancheepuram[1]	12,084	8963	3121	25.97	579	450	129	1.24
3. Thiruvallore	NA	NA	NA	NA	NA	NA	NA	NA
4. Cuddalore[2]	13,233	12,196	1037	27.13	580	550	30	1.19
5. Villupuram	NA	NA	NA	NA	NA	NA	NA	NA
6. Vellore	6273	4800	1473	20.73	498	463	35	1.65
7. Tiruvannamalai	4384	4139	245	21.46	621	606	15	3.04
8. Salem[3]	6508	5365	1143	16.7	1361	1350	11	3.49
9. Namakkal	NA	NA	NA	NA	NA	NA	NA	NA

(Contd...)

(Table A3.4 Contd.)

S.no.	Districts	Scheduled Castes				Scheduled Tribes			
		Total	Rural	Urban	% to total population	Total	Rural	Urban	% to total population
1		2	3	4	5	6	7	8	9
10.	Dharmapuri	3474	3278	196	14.31	477	465	12	1.96
11.	Erode	3981	3404	577	17.16	192	180	12	0.83
12.	Coimbatore	5752	3385	2367	16.4	261	228	33	0.75
13.	Nilgiris	2146	1008	1138	30.22	251	176	75	0.53
14.	Trichy[4]	7921	6784	1137	19.14	283	245	38	0.68
15.	Karur	NA	NA	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur[5]	10,955	10,080	875	24.17	98	50	48	0.22
19.	Thiruvarur	NA	NA	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	2232	2064	168	16.82	8	4	4	0.06
22.	Madurai[6]	5036	3946	1090	14.6	127	70	57	0.37
23.	Theni	NA	NA	NA	NA	NA	NA	NA	NA
24.	Dindigul	3417	3041	376	19.41	95	80	15	0.54
25.	Ramnad	2066	1868	198	18.06	16	5	11	0.14
26.	Virudhunagar	2889	2359	530	18.46	30	10	20	0.19
27.	Sivagangai	1728	1498	230	16.02	12	3	9	0.11
28.	Tirunelveli	4477	3531	946	17.89	90	56	34	0.36
29.	Thoothukudi	2501	1913	588	17.18	32	14	18	0.22
30.	Kanniyakumari	769	659	110	4.8	52	47	5	0.33
	STATE	107,123	84,281	22,842	19.18	5742	5052	690	1.03

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Nagapattinam and Tiruvarur.
[6]Figure relating to composite district Madurai and Theni.

A3.5—Tamil Nadu—Work Participation Rates by Residence

S.no.	Districts	1981						1991					
		Total		Rural		Urban		Total		Rural		Urban	
		Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers
1		2	3	4	5	6	7	8	9	10	11	12	13
1.	Chennai	27.9	28.31	–	–	27.9	28.31	30.5	30.54	–	–	30.5	30.54
2.	Kancheepuram[1]	35.3	37.81	38.95	42.63	29.58	30.26	36.36	38.06	41.13	43.9	30.49	30.89
3.	Thiruvallore	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4.	Cuddalore	38.45	41.78	40.46	44.3	27.68	28.29	40.2	43.68	42.28	46.26	29.07	29.86
5.	Villupuram[2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6.	Vellore	36.7	39.36	39.78	43.23	29.78	30.67	37.93	40.42	41.7	45.01	29.82	30.54
7.	Tiruvannamalai	41.88	45.95	43.46	47.95	29.79	30.68	43.19	45.64	45.07	47.79	29.27	29.72
8.	Salem[3]	45.53	47.93	48.87	51.97	37.33	37.99	46.28	49.25	49.76	53.26	37.8	39.49
9.	Namakkal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	41.71	44.5	42.81	45.85	31.14	31.44	44.07	47.6	45.26	49.07	32.77	33.6
11.	Erode	49.68	51.78	52.75	55.24	38.8	39.52	49.67	52.3	53.39	56.59	38.32	39.23
12.	Coimbatore	44.01	45.08	52.09	53.76	36.08	36.55	44.34	45.13	51.67	53.11	37.54	37.87

(Contd...)

(Table A3.5 Contd.)

S.no.	Districts	1981						1991					
		Total		Rural		Urban		Total		Rural		Urban	
		Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers	Main Workers	Main & Marginal workers
1		2	3	4	5	6	7	8	9	10	11	12	13
13.	Nilgiris	38.14	38.85	40.81	31.48	35.35	36.1	39.57	40.67	42.83	44.28	36.29	37.03
14.	Trichy[4]	41.19	43.96	44.95	48.53	30.54	36.03	43.53	46.39	47.88	51.52	31.51	32.24
15.	Karur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur[5]	36.39	39.06	38.76	41.92	28.51	29.55	37.63	40.58	40.08	43.61	29.38	30.38
19.	Thiruvarur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	36.26	41.12	37.69	43.22	26.92	27.42	38.94	44.25	40.67	46.78	28.69	29.14
22.	Madurai[6]	40.62	42.14	47.7	50.02	31.57	32.07	42.17	43.99	49.45	51.95	33.17	34.16
23.	Theni	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24.	Dindigul	45.25	47.13	49.24	51.53	30.77	31.16	47.28	49.12	49.24	53.29	33.23	33.82
25.	Ramnad	36.23	41.69	38.52	45.17	27.68	28.71	39.67	45.43	42.89	49.85	28.13	29.6
26.	Virudhunagar	47.82	50.01	51.46	53.98	41.46	42.67	47.92	50.08	52.21	54.76	40.74	42.25
27.	Sivagangai	35.05	38.86	38.05	43.05	26.54	27	39.3	46.11	43.06	51.78	29.08	30.69
28.	Tirunelveli	41.64	44.19	45.15	48.05	34.05	35.83	44.21	47.18	48.31	51.64	35.38	37.56
29.	Thoothukudi	38.53	40.6	42.9	45.62	32.97	32.94	39.62	41.59	44.91	47.58	32.08	33.05
30.	Kanniyakumari	27.62	29.04	27.35	28.93	28.88	29.57	29	30.5	29.12	30.7	28.41	29.52
	STATE	39.31	41.73	43.2	46.48	50.84	51.25	40.82	43.31	45.07	48.49	52.62	52.78

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Nagapattinam and Tiruvarur.
[6]Figure relating to composite district Madurai and Theni.
Source: Census of India, 1981 and 1991.

A4 Health Profile

A4.1—Health Profile—Tamil Nadu by Residence

S.no. Districts	Birth Rate[1]			Death Rate[1]			Infant Mortality Rate			Still Birth Rate[2]			MMR[2]		
	Rural	Urban	Combined	Rural	Urban	Combined	Rural	Urban	Combined	Rural	Urban	Combined	Rural	Urban	Combined
I	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1. Chennai	0.00	17.40	17.40	0.00	4.40	4.40	0.00	14.30	14.30	0.00	6.00	6.00	0.00	0.60	0.60
2. Kancheepuram	18.80	17.00	18.30	5.70	4.90	5.50	30.40	17.00	27.30	7.00	6.70	7.00	1.00	1.70	1.10
3. Thiruvallur	19.30	17.40	18.70	7.10	3.70	6.10	35.90	16.40	30.30	13.80	8.90	12.40	1.00	0.00	0.70
4. Cuddalore	20.50	18.30	20.20	7.20	5.10	6.90	41.30	23.60	38.70	21.80	4.60	18.30	2.50	1.50	2.30
5. Villupuram	20.80	16.60	20.60	8.20	5.10	8.10	49.60	19.30	48.30	19.00	7.00	18.50	1.70	0.60	1.70
6. Vellore	19.70	17.50	19.20	9.00	6.00	8.30	53.80	22.60	47.80	20.90	3.30	17.60	1.10	0.60	1.00
7. Tiruvannamalai	20.10	18.30	19.90	8.70	6.10	8.50	43.60	25.70	41.70	11.90	5.90	11.30	1.50	0.00	1.40
8. Salem	21.60	18.10	20.60	8.20	6.20	7.70	83.70	40.20	73.30	28.40	13.20	24.80	0.90	2.10	1.20
9. Namakkal	17.70	16.00	17.40	8.70	4.20	8.00	53.70	22.10	49.20	28.50	5.10	25.20	1.20	1.70	1.30
10. Dharmapuri	26.70	18.70	26.10	9.40	4.10	9.10	84.10	15.20	80.70	17.60	9.10	17.20	2.00	3.00	2.00
11. Erode	16.40	15.70	16.30	7.90	5.00	7.50	45.30	27.70	42.90	17.30	12.20	16.60	0.80	1.20	0.90
12. Coimbatore	18.00	15.70	17.10	5.80	5.60	5.70	35.70	34.90	35.40	20.60	17.50	19.50	1.50	1.20	1.40
13. Nilgiris	18.50	12.60	17.30	6.00	3.00	5.40	43.00	18.60	39.40	21.80	4.80	19.40	2.90	0.00	2.50
14. Trichy	19.60	16.50	18.60	7.80	5.70	7.10	54.40	16.70	39.30	10.40	17.00	12.10	2.00	2.50	2.10
15. Karur	16.80	15.60	16.70	7.10	5.30	6.90	52.40	20.00	49.10	18.20	7.50	17.10	1.70	0.70	1.60
16. Perambalur[3]	21.10	0.00	21.10	9.20	0.00	9.20	57.20	0.00	57.20	19.60	0.00	19.60	3.00	0.00	3.00
17. Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18. Thanjavur	19.80	15.60	19.00	8.10	6.20	7.70	43.20	20.50	39.60	22.40	6.80	19.90	0.50	0.00	0.40
19. Tiruvarur	19.40	16.80	19.00	8.20	5.40	7.80	35.10	21.10	33.50	21.20	9.40	19.80	3.30	1.10	3.00
20. Nagapattinam	19.60	17.50	19.30	7.50	6.90	7.50	37.80	19.40	35.50	14.20	11.50	13.90	2.60	1.10	2.40
21. Pudukkotai	21.70	17.40	21.30	7.60	5.50	7.40	40.50	26.60	39.30	24.20	5.10	22.70	1.20	1.10	1.20
22. Madurai	21.20	17.40	19.50	8.40	6.30	7.50	56.70	24.70	44.50	13.80	15.90	14.60	0.90	2.10	1.30
23. Theni	21.40	16.80	20.30	8.90	5.60	8.10	70.90	28.80	62.20	22.30	6.40	19.00	2.00	0.00	1.50
24. Dindigul	20.80	17.10	20.20	8.60	5.60	8.10	52.20	28.60	48.10	20.00	14.40	18.30	1.90	1.70	1.90
25. Ramanad	21.10	17.60	20.70	8.10	4.90	7.70	53.80	22.80	50.80	14.40	5.90	13.60	1.30	0.50	1.20
26. Virudhunagar	19.70	14.70	18.40	7.80	6.00	7.30	40.90	23.50	37.20	24.70	18.00	23.30	2.70	2.00	2.80
27. Sivagangai	19.80	16.20	19.30	8.90	4.20	8.30	39.20	17.10	38.70	16.30	4.30	15.00	2.00	1.80	2.00
28. Tirunelveli	18.50	18.50	18.50	7.30	6.10	7.00	40.80	35.00	43.20	22.30	9.40	18.50	2.00	2.40	2.10
29. Thoothukudi	17.80	16.60	17.50	6.90	4.20	6.40	45.80	19.40	41.00	15.60	9.60	14.50	2.30	1.80	2.20
30. Kanniyakumari	17.70	15.10	17.30	5.90	3.70	5.50	24.60	12.50	22.90	8.90	3.30	8.10	1.40	0.70	1.30
STATE	19.90	17.00	19.20	7.80	5.10	7.10	49.80	22.00	43.40	18.40	9.50	16.30	1.60	1.20	1.50

Notes: NA: Figure not available
[1]per 1000 population.
[2]per 1000 live births.
[3]Figure relating to composite district Perambalur and Ariyalur.
Source: DANIDA—Tamil Nadu Area Health Care Project, Phase III, Estimated Vital Rates for 1998.

A4.2—HEALTH PROFILE—TAMIL NADU BY GENDER

S.no. Districts	Birth Rate[1]			Death Rate[1]			IMR[2]			SBR[2]		
	Male	Female	Combined	Male	Female	Combined	Male	Female	Combined	Male	Female	Combined
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Chennai	17.20	17.60	17.40	4.90	3.80	4.40	15.80	12.80	14.30	6.00	6.00	6.00
2. Kancheepuram	19.10	17.80	18.30	6.40	4.80	5.50	28.80	25.60	27.30	9.20	4.50	7.00
3. Thiruvallur	19.30	18.10	18.70	7.20	5.00	6.10	30.60	29.90	30.30	14.00	10.80	12.40
4. Cuddalore	20.50	19.90	20.20	7.80	5.90	6.90	40.40	36.80	38.70	20.50	18.10	19.30
5. Villupuram	20.90	20.20	20.60	9.10	7.00	8.10	46.60	50.20	48.30	16.50	20.50	18.50
6. Vellore	19.60	18.80	19.20	9.40	7.30	8.30	47.90	47.70	47.80	17.30	17.80	17.60
7. Tiruvannamalai	20.40	19.40	19.90	9.60	7.30	8.50	37.50	46.30	41.70	9.70	13.10	11.30
8. Salem	21.60	19.80	20.60	8.20	7.10	7.70	48.90	102.30	73.30	20.80	29.50	24.80
9. Namakkal	17.90	18.90	17.40	8.90	7.20	8.00	42.30	59.60	49.20	26.80	23.40	25.20
10. Dharmapuri	28.80	25.80	26.10	9.20	9.00	9.10	53.30	111.20	80.70	14.20	20.40	17.20
11. Erode	16.80	15.70	16.30	8.50	6.50	7.50	41.10	45.00	42.90	14.80	18.50	16.60
12. Coimbatore	17.10	17.20	17.10	6.70	4.70	5.70	39.20	31.50	35.40	20.60	18.40	19.50
13. Nilgiris	17.70	16.90	17.30	6.40	4.30	5.40	46.80	34.90	39.40	19.90	18.90	19.40
14. Trichy	19.50	17.60	18.60	8.30	5.90	7.10	42.20	44.40	43.20	17.70	19.40	18.50
15. Karur	17.70	15.70	16.70	8.20	5.70	6.90	49.10	49.20	49.10	15.20	19.30	17.10
16. Perambalur[3]	21.90	20.30	21.10	10.20	8.10	9.20	55.10	59.60	57.20	23.70	15.00	19.60
17. Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18. Thanjavur	19.90	18.00	19.00	9.00	6.50	7.70	42.60	36.30	39.60	18.10	21.80	18.90
19. Tiruvarur	19.10	18.90	19.00	8.90	6.80	7.80	36.40	30.50	33.50	20.50	19.20	18.80
20. Nagapattinam	19.90	18.60	19.30	8.50	6.40	7.50	35.60	35.40	35.50	15.00	12.80	13.90
21. Pudukkotai	21.70	20.90	21.30	8.30	6.50	7.40	38.50	40.20	39.30	25.50	19.80	22.70
22. Madurai	20.00	19.00	19.50	8.50	6.50	7.50	42.20	47.00	44.50	13.80	15.80	14.80
23. Theni	20.20	20.40	20.30	8.70	7.50	8.10	49.40	75.20	62.20	18.50	19.60	19.00
24. Dindigul	20.50	19.90	20.20	8.50	7.70	8.10	40.20	58.30	48.10	18.50	18.00	18.30
25. Ramanad	20.60	20.80	20.70	8.50	7.00	7.70	55.30	46.40	50.80	13.30	13.80	13.60
26. Virudhunagar	19.20	17.80	18.40	8.00	6.60	7.30	35.80	38.80	37.20	24.80	21.50	23.30
27. Sivagangai	20.10	18.50	19.30	9.00	7.50	8.30	31.70	42.00	38.70	15.20	14.80	15.00
28. Tirunelveli	19.00	18.00	18.50	8.10	5.90	7.00	37.10	41.60	39.30	14.00	10.00	12.10
29. Thoothukudi	18.10	17.00	17.50	7.40	5.30	8.40	44.50	37.40	41.00	14.70	14.30	14.50
30. Kanniyakumari	17.50	17.10	17.30	6.40	4.70	5.50	25.80	20.00	22.90	9.50	6.70	8.10
STATE	19.60	18.70	19.20	8.00	6.20	7.10	40.10	46.90	43.40	16.30	16.40	16.30

Notes: NA: Figure not available.
[1]per 1000 population.
[2]per 1000 live births.
[3]Figure relating to composite district Perambalur and Ariyalur.
Source: DANIDA—Tamil Nadu Area Health Care Project, Phase III, Estimated Vital Rates for 1998.

A4.3—INTER-STATE HEALTH PROFILE

Components	*India*	*Tamil Nadu*	*Andhra Pradesh*	*Kerala*	*Karnataka*	*Gujarat*	*Haryana*	*Madhya Pradesh*	*Maharashtra*	*Punjab*	*West Bengal*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Crude birth rate(CBR) [1]											
Rural	28.00	19.90*	22.80	18.30	23.10	26.90	28.80	32.10	23.50	23.70	23.40
Urban	21.00	17.00*	20.90	18.00	19.40	21.90	23.20	23.00	20.40	18.50	15.20
Combined	26.40	19.20*	22.30	18.20	22.00	25.30	27.60	30.60	22.30	22.40	21.30
Crude death rate (CDR)[1]											
Rural	9.70	7.80*	9.70	6.50	8.90	8.50	8.50	11.80	8.80	8.10	7.70
Urban	6.60	5.10*	6.00	6.20	5.60	6.30	6.80	7.80	5.60	6.30	7.10
Combined	9.00	7.10*	8.80	6.40	7.90	7.80	8.10	11.20	7.60	7.70	7.50
Infant mortality rate (IMR)[2]											
Rural	77.00	50.00*	75.00	15.00	70.00	71.00	72.00	103.00	58.00	58.00	56.00
Urban	45.00	22.00*	38.00	17.00	25.00	46.00	58.00	56.00	32.00	40.00	41.00
Combined	72.00	43.00*	66.00	16.00	58.00	64.00	69.00	97.00	49.00	54.00	53.00
% of infant deaths to total deaths											
Rural	22.20	12.30	17.60	4.20	18.20	22.50	24.40	28.00	15.50	17.00	17.00
Urban	14.30	10.60	13.20	4.90	8.70	16.00	19.80	16.50	11.70	11.70	8.80
Combined	21.10	11.90	16.70	4.60	16.20	20.80	23.50	26.50	14.40	15.70	15.10
Early neonatal mortality rate (ENNMR)[2]											
Rural	38.00	36.60	43.50	6.30	38.00	38.40	32.20	51.20	28.80	24.50	29.50
Urban	20.30	22.60	21.40	6.50	14.30	16.70	19.40	24.10	17.80	14.90	18.60
Combined	34.80	32.10	38.60	6.30	31.60	32.20	29.90	48.00	25.00	22.50	27.50
Neonatal mortality rate (NNMR)[2]											
Rural	50.50	42.80	54.40	7.20	45.80	49.50	42.50	68.20	37.60	31.80	39.90
Urban	26.20	29.00	27.70	8.40	17.70	26.70	28.80	33.20	21.10	18.10	25.90
Combined	46.10	38.40	48.40	7.50	38.20	43.00	40.00	64.00	31.70	29.00	37.30
Post-natal mortality rate (PNMR)[2]											
Rural	26.50	15.50	16.10	3.90	17.10	19.20	27.70	31.30	18.50	22.60	18.10
Urban	19	11.4	9.70	7.00	6.80	19.40	30.50	30.40	10.30	19.70	17.20
Combined	25.10	14.20	14.70	4.70	14.30	19.30	28.20	23.70	15.60	22.00	17.90
% of early neonatal deaths to infant deaths											
Rural	49.40	63.10	58.00	41.80	54.30	54.00	44.70	49.70	49.70	42.20	52.70
Urban	45.10	56.50	56.30	38.10	57.10	36.20	33.50	42.90	55.80	37.20	45.40
Combined	48.30	60.50	58.50	39.20	54.50	50.40	43.30	49.50	50.90	41.70	51.90
Prenatal mortality rate (PNMR)[2]											
Rural	46.30	47.20	52.50	17.30	51.70	42.30	44.50	59.40	39.80	35.40	40.10
Urban	29.10	35.40	34.70	18.10	26.70	20.20	30.10	34.20	26.10	21.30	29.80
Combined	43.20	43.40	48.50	17.50	45.00	36.10	41.90	56.40	34.90	32.50	38.20

(Contd...)

(Table A4.3 Contd.)

Components	*India*	*Tamil Nadu*	*Andhra Pradesh*	*Kerala*	*Karnataka*	*Gujarat*	*Haryana*	*Madhya Pradesh*	*Maharashtra*	*Punjab*	*West Bengal*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Still birth rate (SBR)[2]											
Rural	8.60	11.00	9.40	11.10	14.20	4.10	12.70	8.60	11.30	11.20	10.90
Urban	9.00	13.10	13.60	11.70	12.60	3.60	10.60	10.40	8.40	6.50	11.40
Combined	8.70	11.70	10.30	11.30	13.80	4.00	12.40	8.80	10.20	10.20	11.00
Under-5 mortality rate (U5 MR)[3]											
Rural	106.00	67.00	91.00	18.00	81.00	89.00	102.00	142.00	74.00	71.00	79.00
Urban	64.00	46.00	52.00	21.00	34.00	64.00	90.00	83.00	42.00	45.00	55.00
Combined	99.00	60.00	83.00	19.00	69.00	82.00	100.00	135.00	64.00	65.00	75.00
% of infant deaths to under-5 Deaths											
Rural	72.40	90.20	79.80	73.00	77.80	76.00	68.90	72.00	78.10	76.10	73.10
Urban	72.10	84.90	73.20	75.80	72.60	71.90	66.90	73.10	74.00	88.40	79.50
Combined	73.70	88.20	78.50	75.40	77.30	74.60	68.00	71.90	75.20	78.00	72.90

Notes: *Danida Tamil Nadu Area Health Care Project—Phase III Estimated Vital Rates for 1998.
CBR and CDR—per 1000 populaton. IMR, ENMR etc. per 1000 live births.
Source: 1. Sample Registration System (SRS), 1998 [1]1998 (P), [2]1997 [3]1996.

A5 Education Profile

A5.1—EDUCATION PROFILE—MAJOR STATES

Indicator	*India*	*Tamil Nadu*	*Andhra Pradesh*	*Kerala*	*Karnataka*	*Gujarat*	*Haryana*	*Madhya Pradesh*	*Maharashtra*	*Punjab*	*West Bengal*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Literacy rate											
All, 1991	52.2	62.7	44.1	89.8	56.0	61.3	55.8	44.2	64.9	58.5	57.7
Male, 1991	64.1	73.8	55.1	93.7	67.3	73.1	69.1	58.4	76.6	65.7	67.8
Female, 1991	39.3	51.3	32.7	86.2	44.3	48.6	40.5	28.8	52.3	50.4	46.6
GER											
Primary											
1993–94	81.9	100.1	75.9	97.3	100.0	103.6	77.6	88.6	94.9	84.0	83.1
1997–98	89.7	108.5	89.5	90.0	104.6	115.7	83.9	102.3	112.9	81.6	92.2
Middle											
1993–94	54.2	86.9	42.7	95.7	59.1	66.7	60.8	52.8	67.4	63.3	44.7
1997–98	58.5	93.6	45.7	95.4	67.6	68.4	65.9	64.9	86.3	65.0	47.1
Drop out rate											
Classes I–V											
1997–98 (Provisional)	39.6	15.1	45.7	–9.00*	33.5*	27.8*	14.9*	23.3	22.6	23.6	49.9
Classes I–VIII											
1997–98 (Provisional)	54.1	30.0	73.4	–0.4	57.1	60.3	30.9	50.4	41.4	28.4	69.1+
Classes I–X											
1997–98 (Provisional)	69.3	61.1	74.1	25.8	66.4	70.0	46.3	67.7	59.8	48.4	83.5

(Contd...)

(Table A5.1 Contd.)

Indicator	*India*	*Tamil Nadu*	*Andhra Pradesh*	*Kerala*	*Karnataka*	*Gujarat*	*Haryana*	*Madhya Pradesh*	*Maharashtra*	*Punjab*	*West Bengal*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
Retention rate											
Enrolment in Class I–V as percentage to Class I, 1993	54.6	85.0	46.3	112.6	59.1	65.8	78.7	61.3	71.0	72.8	46.1
Enrolment in Class I–VIII as percentage to Class I, 1993	36.3	63.2	25.1	111.6	35.9	42.6	66.1	32.1	48.7	56.0	25.5
Enrolment in Class I–X as percentage to Class I, 1993	25.0	37.2	19.7	79.2	26.3	29.0	39.8	22.9	33.3	42.8	13.8
Pupil–Teacher Ratio											
(a) Primary, 1993–94	40	37	49	31	39	36	47	40	37	42	43
(b) Middle, 1993–94	36	42	45	30	54	41	40	29	38	23	34
(c) Sec., 1993–94	30	38	32	30	29	29	37	27	31	29	38
(d) Hr. Sec., 1993–94	34	40	32	29	37	32	36	36	36	31	38

Notes: *Figures have been taken from 6th All India Educational Survey, 1993.
+1996–7 figures.
All figures in percentages.

Sources: Literacy Rate:1991 Census data.
GER and Drop out rate: (1) 6th All India Educational Survey 1993, (2) Annual Report 1998–9, Ministry of HRD, GOI.
Retention Rate and Pupil–Teacher Ratio: 6th All India Educational Survey, 1993.

A5.2—LITERACY RATE

Tamil Nadu/ Districts	*Literacy Rate*						*SC Literacy Rate*				
	All		*Male*		*Female*		*Rural*	*Urban*	*All*	*Male*	*Female*
	1991	*2001*	*1991*	*2001*	*1991*	*2001*	*1991*	*1991*	*1991*	*1991*	*1991*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Chennai	81.6	80.1	87.9	84.7	74.9	75.3	0.0	81.6	67.57	76.20	58.48
2. Kancheepuram	66.5	77.6	77.1	84.8	55.5	70.2	55.6[1]	79.4[1]	51.85[1]	63.59[1]	39.77[1]
3. Thiruvallur	66.2	76.5	77.0	84.6	54.9	68.2	NA	NA	NA	NA	NA
4. Cuddalore	58.6	71.9	71.5	82.8	45.2	60.9	48.2[2]	77.1[2]	56.28[2]	67.47[2]	44.97[2]
5. Villupuram	48.4	64.7	60.9	76.0	35.4	53.2	NA	NA	NA	NA	NA
6. Vellore	60.9	73.1	72.9	82.7	48.6	63.5	55.4	72.5	37.49	49.71	24.80
7. Tiruvannamalai	53.1	68.2	66.7	80.1	39.3	56.3	50.2	74.1	43.35	55.88	30.52
8. Salem	52.8	65.7	63.5	75.3	41.3	55.6	47.1[3]	68.4[3]	40.53[3]	51.62[3]	.28.84[3]
9. Namakkal	54.4	67.7	66.7	78.0	41.7	57.0	NA	NA	NA	NA	NA
10. Dharmapuri	46.0	59.2	57.2	68.8	34.2	49.1	43.3	71.4	39.24	50.24	27.70
11. Erode	53.8	65.5	65.5	75.5	41.6	55.3	47.6	73.1	31.28	39.92	22.28
12. Coimbatore	66.4	77.0	76.5	83.8	55.7	69.8	54.5	77.1	38.05	46.79	29.12
13. Nilgiris	71.7	81.4	81.8	89.6	61.5	73.4	67.0	76.5	63.97	75.03	52.90
14. Trichy	68.7	79.2	79.5	87.2	57.7	71.2	54.1[4]	80.8[4]	47.82[4]	60.71[4]	34.86[4]
15. Karur	56.1	68.7	69.6	80.4	42.6	57.3	NA	NA	NA	NA	NA
16. Perambalur	51.8	65.9	64.7	77.7	38.6	54.3	NA	NA	NA	NA	NA
17. Ariyalur	49.0	64.9	63.2	77.9	34.5	52.0	NA	NA	NA	NA	NA
18. Thanjavur	66.1	76.1	77.3	85.5	55.0	67.0	62.1[5]	79.1[5]	47.73[5]	60.33[5]	34.91[5]

(Contd...)

(Table A5.2 Contd.)

Tamil Nadu/ Districts	Literacy Rate						SC Literacy Rate				
	All		Male		Female		Rural	Urban	All	Male	Female
	1991	2001	1991	2001	1991	2001	1991	1991	1991	1991	1991
1	2	3	4	5	6	7	8	9	10	11	12
19. Tiruvarur	66.2	76.9	77.5	85.6	54.7	68.4	NA	NA	NA	NA	NA
20. Nagapattinam	65.8	76.9	77.0	85.6	54.4	68.4	NA	NA	NA	NA	NA
21. Pudukkotai	57.6	72.0	71.8	83.2	43.6	60.9	53.8	80.1	48.52	63.36	33.69
22. Madurai	69.1	78.7	79.9	87.2	57.9	69.9	55.8[6]	79.2[6]	45.28[6]	57.92[6]	32.38[6]
23. Theni	60.3	72.0	72.7	82.5	47.5	61.4	NA	NA	NA	NA	NA
24. Dindigul	56.7	69.8	69.2	80.3	43.9	59.3	51.0	77.3	39.83	52.11	27.31
25. Ramnad	61.7	73.1	74.7	83.0	48.8	63.6	57.0	78.0	46.05	59.50	32.53
26. Virudhunagar	62.9	74.2	75.7	84.6	50.2	64.1	55.7	74.7	43.48	56.65	30.27
27. Sivagangai	63.0	72.7	76.9	83.7	49.6	62.1	56.5	80.6	49.27	63.23	35.80
28. Tirunelveli	65.6	77.0	77.5	85.9	54.2	68.5	67.3	75.2	48.91	61.08	37.45
29. Thoothukudi	73.0	82.0	82.0	88.7	64.6	75.6	61.1	81.1	57.28	68.97	45.88
30. Kanniyakumari	82.1	88.1	85.7	90.9	78.4	85.4	80.8	88.4	77.33	83.02	71.69
STATE	62.7	73.5	73.8	82.3	51.3	64.6	54.6	78.0	46.74	58.36	34.89

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cudallore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
All figures in percentages.
Sources: Literacy rate (All, Male, Female)—Census 1991 and 2001(Provisional figure), Director of Census, Chennai, 2001.
Literacy rate (Rural, Urban and SC Literacy Rate), Census 1991, Director of Census.

A5.3—Gross Enrolment Rate and Drop out Rate

(1998–99)

Tamil Nadu/Districts	Gross Enrolment Rate				Drop out Rate			
	Primary	Middle	Secondary	Hr. Sec.	Primary	Middle	Secondary	Hr. Sec.
1	2	3	4	5	6	7	8	9
1. Chennai	129.72	98.19	85.28	47.58	13.74	39.74	55.24	69.65
2. Kancheepuram	89.85	84.45	58.50	37.20	14.83	42.72	55.20	81.89
3. Thiruvallur	89.09	77.78	81.94	48.56	14.83	37.96	55.21	81.89
4. Cuddalore	103.25	91.71	55.67	21.17	15.14	40.39	46.52	86.38
5. Villupuram	85.86	86.47	70.70	18.05	14.82	40.39	60.23	85.15
6. Vellore	108.46	93.86	72.42	33.30	14.92	35.88	60.85	82.93
7. Tiruvannamalai	99.67	92.19	51.87	27.76	15.03	38.66	61.57	83.39
8. Salem	101.72	84.58	53.14	25.20	14.33	23.65	58.74	80.57
9. Namakkal	101.94	81.42	78.94	37.87	14.33	21.65	58.74	80.57
10. Dharmapuri	86.68	73.33	57.93	20.62	15.09	38.09	60.24	84.38
11. Erode	113.66	86.14	59.95	26.36	14.21	37.72	58.05	83.41
12. Coimbatore	114.40	94.12	49.32	29.16	14.11	36.00	57.43	80.09
13. Nilgiris	105.07	75.96	75.74	29.99	14.11	36.45	57.74	83.26
14. Trichy	108.29	84.02	73.10	27.93	14.42	32.14	57.21	80.06
15. Karur	106.94	72.69	76.57	33.81	14.43	32.12	57.21	80.06
16. Perambalur	103.50[1]	94.78[1]	50.96[1]	24.99[1]	14.42[1]	32.14[1]	57.21[1]	80.06[1]

(Contd...)

(Table A5.3 Contd.)

Tamil Nadu/Districts	Gross Enrolment Rate				Drop out Rate			
	Primary	Middle	Secondary	Hr. Sec.	Primary	Middle	Secondary	Hr. Sec.
1	2	3	4	5	6	7	8	9
17. Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA
18. Thanjavur	112.80	88.10	68.66	21.19	14.09	32.19	59.24	81.94
19. Tiruvarur	110.89	94.97	54.19	30.25	15.03	32.19	57.40	83.36
20. Nagapattinam	111.19	84.81	54.52	28.52	14.39	32.19	57.40	83.36
21. Pudukkotai	102.45	86.68	46.87	20.43	14.74	37.43	57.63	82.83
22. Madurai	114.50	100.40	84.89	27.10	14.33	35.30	57.02	78.59
23. Theni	112.33	91.22	73.89	35.95	14.33	35.30	57.02	78.59
24. Dindigul	105.17	97.47	55.93	25.09	14.47	35.10	61.87	86.29
25. Ramnad	101.55	96.49	69.50	20.39	14.71	35.10	59.53	82.44
26. Virudhunagar	103.69	85.89	45.71	24.16	15.15	37.77	61.84	84.50
27. Sivagangai	105.48	96.28	72.30	23.86	14.40	36.56	57.24	82.44
28. Tirunelveli	110.94	90.60	82.65	28.28	14.10	33.27	60.60	85.07
29. Thoothukudi	111.62	99.33	82.10	45.77	14.13	35.58	60.96	81.25
30. Kanniyakumari	111.66	93.54	76.24	46.97	13.53	30.06	57.55	72.88
STATE	105.21	89.25	66.53	30.33	14.52	35.23	58.01	81.49

Notes: NA: Figure not available.
[1]Figure relating to composite district Perambalur and Ariyalur.
All figures in percentages.
Source: GER and Drop out rate: Director of School Education, Chennai.

A5.4—Pupil–Teacher Ratio and Access to Schooling

Tamil Nadu/Districts	Pupil–Teacher Ratio						Access to schooling % of Rural Habitations covered			
	Primary		Middle		Sec.	Hr.Sec.				
	1993–94	1998–99	1993–94	1998–99	1993–94	1993–94	primary school/ section up to a distance of 1 km 1993–94	middle school/ section up to a distance of 3 km 1993–94	High school/ section up to a distance of 5 km 1993–94	Hr.Sec. school/ section up to a distance of 8 km 1993–94
1	2	3	4	5	6	7	8	9	10	11
1. Chennai	27	42	37	45	33	37	0.00	0.00	0.00	0.00
2. Kancheepuram	43[1]	46	47[1]	37	45[1]	49[1]	99.91[1]	84.90[1]	77.73[1]	71.25[1]
3. Thiruvallur	NA	41	NA	32	NA	NA	NA	NA	NA	NA
4. Cuddalore	34	40	44	35	43	41	99.41	92.01	90.03	86.12
5. Villupuram	50	41	57	41	39	48	100.00	83.19	81.48	78.59
6. Vellore	38	30	43	35	40	40	99.94	92.17	91.07	87.82
7. Tiruvannamalai	37	33	52	38	46	56	100.00	84.27	82.96	81.14
8. Salem	38[2]	30	48[2]	29	40[2]	42[2]	99.85[2]	91.05[2]	90.80[2]	89.06[2]
9. Namakkal	NA	31	NA	31	NA	NA	NA	NA	NA	NA
10. Dharmapuri	56	41	50	45	55	51	99.83	82.06	81.53	72.02
11. Erode	34	34	40	26	46	42	99.22	82.01	79.82	80.95
12. Coimbatore	29	46	34	35	38	34	100.00	90.79	86.82	86.70
13. Nilgiris	26	35	30	46	33	32	100.00	92.43	91.14	86.16
14. Trichy	37[3]	33	40[3]	30	36[3]	42[3]	100.00[3]	87.85[3]	83.95[3]	75.41[3]

(Contd...)

(Table A5.4 Contd.)

Tamil Nadu/ Districts	Pupil–Teacher Ratio						Access to schooling % of Rural Habitations covered			
	Primary		Middle		Sec.	Hr.Sec.				
	1993–94	1998–99	1993–94	1998–99	1993–94	1993–94	primary school/ section up to a distance of 1 km 1993–94	middle school/ section up to a distance of 3 km 1993–94	High school/ section up to a distance of 5 km 1993–94	Hr.Sec. school/ section up to a distance of 8 km 1993–94
1	2	3	4	5	6	7	8	9	10	11
15. Karur	NA	30	NA	30	NA	NA	NA	NA	NA	NA
16. Perambalur	NA	31[4]	NA	33[4]	NA	NA	NA	NA	NA	NA
17. Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18. Thanjavur	39[5]	34	44[5]	36	32[5]	42[5]	94.72[5]	90.00[5]	90.31[5]	90.99[5]
19. Tiruvarur	NA	42	NA	41	NA	NA	NA	NA	NA	NA
20. Nagapattinam	36	45	46	43	37	39	99.69	94.40	92.31	85.88
21. Pudukkotai	45	54	55	46	48	46	100.00	78.30	74.69	73.17
22. Madurai	40[6]	51	45[6]	33	28[6]	39[6]	99.78[6]	91.47[6]	88.31[6]	84.61[6]
23. Theni	NA	40	NA	31	NA	NA	NA	NA	NA	NA
24. Dindigul	34	29	45	35	39	36	96.55	82.22	70.18	71.00
25. Ramnad	41	37	43	32	51	43	99.88	77.65	74.64	71.18
26. Virudhunagar	38	32	37	34	33	33	99.73	88.58	88.08	87.69
27. Sivagangai	33	38	39	40	36	33	99.87	84.40	82.39	80.54
28. Tirunelveli	30	37	35	32	29	33	99.77	92.22	87.65	87.97
29. Thoothukudi	34	32	35	43	30	33	100.00	87.73	84.06	83.07
30. Kanniyakumari	34	38	30	24	30	34	98.43	99.26	99.45	99.24
STATE	37	38	42	36	38	40	99.43	87.78	85.04	81.88

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Salem and Namakkal.
[3]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[4]Figure relating to composite district Permablur and Ariyalur.
[5]Figure relating to composite district Thanjavur and Thiruvarur.
[6]Figure relating to composite district Madurai and Theni.
All figures in percentages.
Source: Pupil–Teacher Ratio: (1) 6th All India Educational Survey 1993 and (2) Director of School Education, Chennai.
Access to schooling: 6th All India Educational Survey 1993.

A5.5—AVAILABILITY OF ANCILLARY FACILITIES IN SCHOOLS

(Percentage)

S. no.	Tamil Nadu/ Districts	Drinking water facility				Urinal facility			
		Primary 1993–94	Middle 1993–94	Secondary 1993–94	Hr. Sec. 1993–94	Primary 1993–94	Middle 1993–94	Secondary 1993–94	Hr. Sec. 1993–94
	1	2	3	4	5	6	7	8	9
1.	Chennai	76.25	74.19	87.95	86.59	83.50	85.25	92.77	99.28
2.	Kancheepuram	66.14[1]	74.65[1]	72.16[1]	96.00[1]	11.10[1]	31.99[1]	55.69[1]	88.00[1]
3.	Thiruvallur	NA	NA	NA	NA	NA	NA	NA	NA
4.	Cuddalore	26.74	44.55	64.36	89.29	9.04	33.18	50.50	83.93
5.	Villupuram	37.02	54.01	60.00	74.29	11.80	33.80	45.16	61.43
6.	Vellore	60.39	66.99	79.31	94.12	20.97	41.03	70.11	86.55

(Contd...)

(Table A5.5 Contd.)

S. no.	Tamil Nadu/ Districts	Drinking water facility: Primary 1993–94	Middle 1993–94	Secondary 1993–94	Hr. Sec. 1993–94	Urinal facility: Primary 1993–94	Middle 1993–94	Secondary 1993–94	Hr. Sec. 1993–94
	1	2	3	4	5	6	7	8	9
7.	Tiruvannamalai	41.98	53.11	76.25	90.74	7.20	15.25	58.13	81.48
8.	Salem	75.04[2]	82.47[2]	77.14[2]	94.40[2]	9.57[2]	31.96[2]	56.19[2]	89.60[2]
9.	Namakkal	NA	NA	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	36.46	55.03	62.50	93.10	4.13	23.67	50.00	77.59
11.	Erode	60.36	73.98	71.19	89.23	39.30	78.06	72.03	89.23
12.	Coimbatore	67.55	80.20	76.33	97.40	25.96	57.43	71.98	94.16
13.	Nilgiris	60.15	67.86	78.05	80.85	39.33	60.71	73.17	80.85
14.	Trichy	78.64[3]	80.80[3]	78.42[3]	97.39[3]	12.07[3]	38.41[3]	59.35[3]	89.54[3]
15.	Karur	NA	NA	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur	78.01[4]	89.57[4]	80.77[4]	97.22[4]	31.86[4]	63.04[4]	75.00[4]	95.83[4]
19.	Tiruvarur	NA	NA	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	68.70	86.01	86.39	92.94	26.87	62.97	77.51	96.47
21.	Pudukkotai	66.67	68.82	72.73	88.37	5.52	25.81	51.14	95.35
22.	Madurai	61.80[5]	81.62[5]	86.01[5]	95.21[5]	20.69[5]	68.65[5]	84.97[5]	89.04[5]
23.	Theni	NA	NA	NA	NA	NA	NA	NA	NA
24.	Dindigul	60.05	74.18	78.95	96.30	17.25	52.11	68.42	96.30
25.	Ramnad	65.64	74.84	57.63	85.71	10.16	39.62	57.63	85.71
26.	Virudhunagar	79.35	88.31	85.06	94.19	21.21	65.58	74.71	88.37
27.	Sivagangai	63.48	76.82	68.89	98.00	11.93	43.05	60.00	86.00
28.	Tirunelveli	73.53	84.85	83.33	99.14	41.11	79.80	85.42	95.69
29.	Thoothukudi	72.51	87.10	85.29	97.70	37.53	77.78	77.94	97.70
30.	Kanniyakumari	67.68	73.42	84.57	93.94	78.66	93.04	95.68	98.99
	STATE	62.34	75.02	77.08	92.98	19.97	51.95	68.36	90.62

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Salem and Namakkal.
[3]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[4]Figure relating to composite district Thanjavur and Thiruvarur.
[5]Figure relating to composite district Madurai and Theni.
All figures in percentages.
Source: Ancillary facilities in schools: 6th All India Educational Survey 1993.

A5.5 Contd...

(Percentage)

S. no.	Tamil Nadu/ Districts	Lavatory facility (1993–4): Primary	Middle	Secondary	Hr. Sec.	Separate lavatory for girls (1993–4): Primary	Middle	Secondary	Hr. Sec.
	1	10	11	12	13	14	15	16	17
1.	Chennai	80.25	86.18	97.99	90.94	61.75	70.05	77.11	64.49
2.	Kancheepuram	7.57[1]	23.14[1]	52.16[1]	88.50[1]	4.74[1]	15.69[1]	38.04[1]	74.00[1]
3.	Thiruvallur	NA	NA	NA	NA	NA	NA	NA	NA
4.	Cuddalore	9.60	24.17	47.52	78.57	8.00	19.43	26.73	69.64
5.	Villupuram	4.11	21.60	37.42	57.14	2.90	18.12	25.81	45.71
6.	Vellore	13.86	34.94	58.62	82.35	9.75	25.64	45.98	64.71
7.	Tiruvannamalai	2.74	7.34	41.88	74.07	1.71	6.21	30.00	57.41

(Contd...)

(Table A5.5 Contd.)

(Percentage)

S. no.	Tamil Nadu/ Districts	Lavatory facility (1993–94)				Separate lavatory for girls (1993–94)			
		Primary	Middle	Secondary	Hr. Sec.	Primary	Middle	Secondary	Hr. Sec.
	1	10	11	12	13	14	15	16	17
8.	Salem	4.78[2]	21.13[2]	47.62[2]	80.80[2]	2.59[2]	14.95[2]	36.67[2]	65.60[2]
9.	Namakkal	NA	NA	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	2.25	10.65	38.16	62.07	1.23	8.28	24.34	37.93
11.	Erode	44.36	72.96	65.25	90.77	27.28	56.63	59.32	70.77
12.	Coimbatore	17.55	40.59	60.87	91.56	11.20	27.72	51.21	79.22
13.	Nilgiris	29.31	35.71	65.85	70.21	23.14	32.14	57.32	53.19
14.	Trichy	7.45[3]	26.63[3]	51.44[3]	84.97[3]	5.23[3]	21.01[3]	43.17[3]	69.93[3]
15.	Karur	NA	NA	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur	12.81[4]	36.96[4]	62.82[4]	87.50[4]	9.09[4]	32.17[4]	45.51[4]	69.44[4]
19.	Tiruvarur	NA	NA	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	10.24	29.45	67.46	92.94	6.68	23.03	52.66	78.82
21.	Pudukkotai	3.13	17.20	43.18	86.05	1.29	13.44	32.95	74.42
22.	Madurai	13.16[5]	40.00[5]	69.95[5]	80.82[5]	8.55[5]	32.43[5]	61.66[5]	65.07[5]
23.	Theni	NA	NA	NA	NA	NA	NA	NA	NA
24.	Dindigul	5.95	28.64	55.26	94.44	3.35	22.07	43.42	79.63
25.	Ramnad	4.48	30.82	40.68	88.57	3.59	24.53	30.51	74.29
26.	Virudhunagar	12.93	45.45	74.71	88.37	10.51	42.21	66.67	74.42
27.	Sivagangai	6.58	26.49	57.78	84.00	3.60	21.19	46.67	78.00
28.	Tirunelveli	18.76	56.31	80.21	94.83	10.33	39.90	71.88	79.31
29.	Thoothukudi	20.82	55.20	72.06	83.91	12.60	43.37	50.00	68.97
30.	Kanniyakumari	56.40	64.56	85.80	94.95	32.93	34.81	71.60	88.89
	STATE	12.57	35.96	60.35	85.51	8.23	27.55	47.83	69.56

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Salem and Namakkal.
[3]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[4]Figure relating to composite district Thanjavur and Thiruvarur.
[5]Figure relating to composite district Madurai and Theni.
All figures in percentages.
Source: Ancillary facilities in schools: 6th All India Educational Survey 1993.

A6 Domestic Product Profile

A6.1—Gross District Domestic Product (At Current and Constant (1993–94) Prices)

(Rs in lakhs)

S.no.	Districts	GDDP at Current Prices				GDDP at Constant Prices			
		1993–94	1994–95	1995–96	1996–97	1993–94	1994–95	1995–96	1996–97
1	2	3	4	5	6	7	8	9	10
1.	Chennai	643,816	775,851	906,532	1,046,212	643,816	720,807	781,156	842,348
2.	Kanchipuram[1]	639,718	808,242	9,121,451	5,298,631	639,719	760,751	810,355	428,390
3.	Thiruvallur[1]				533,746				428,459
4.	Cuddalore[2]	343,091	202,329	222,663	245,502	343,091	192,484	198,025	193,219
5.	Villupuram[2]		202,124	210,409	258,912		194,647	191,411	203,830

(Contd...)

(Table A6.1 Contd.)

(Rs in lakhs)

S.no.	Districts	GDDP at Current Prices				GDDP at Constant Prices			
		1993–94	1994–95	1995–96	1996–97	1993–94	1994–95	1995–96	1996–97
1	2	3	4	5	6	7	8	9	10
6.	Vellore	287,284	342,389	453,885	469,268	287,284	325,275	346,154	375,492
7.	Tiruvannamalai	124,729	146,181	150,160	193,733	124,729	140,559	139,950	153,750
8.	Salem[3]	442,323	493,193	580,391	505,713	442,323	458,039	508,852	403,289
9.	Namakkal[3]				189,822				147,345
10.	Dharmapuri	201,212	250,329	281,604	299,818	201,212	239,903	249,146	238,354
11.	Erode	257,974	308,540	342,511	434,342	257,974	295,829	303,254	346,282
12.	Coimbatore	521,781	642,551	724,400	833,714	521,781	615,041	632,883	675,074
13.	Nilgiris	71,300	78,107	91,232	111,034	71,300	73,107	78,168	89,992
14.	Tiruchirapalli[4]	397,062	461,327	540,850	379,918	397,062	443,914	468,709	302,977
15.	Karur[4]				116,201				96,410
16.	Perambalur[4]				137,827				137,750
17.	Ariyalur[4]								
18.	Thanjavur[5]	167,929	202,978	225,591	234,956	167,929	196,955	203,123	188,355
19.	Tiruvarur[5]				132,644				105,138
20.	Nagapattinam[5]	191,114	245,622	239,931	171,847	191,114	235,346	218,866	136,857
21.	Pudukkottai	96,814	116,544	121,238	161,944	96,814	110,555	104,429	125,985
22.	Madurai[6]	353,501	429,809	484,264	416,217	353,501	406,116	420,431	336,657
23.	Theni[6]				177,943				140,837
24.	Dindigul	159,008	194,312	214,219	241,559	159,008	179,879	183,264	195,585
25.	Virudhunagar	175,093	200,243	226,522	268,451	175,093	188,166	197,055	216,627
26.	Ramanathapuram	85,741	100,084	104,654	135,781	85,741	92,891	87,237	104,298
27.	Sivagangai	82,898	95,338	92,306	115,947	82,898	93,850	80,157	92,417
28.	Tirunelveli	244,122	286,529	329,044	381,414	244,122	270,179	285,337	302,596
29.	Thoothukudi	181,666	224,183	258,697	278,185	181,666	213,193	221,653	219,402
30.	Kanniyakumari	115,092	133,425	163,470	188,848	115,092	125,978	140,470	148,445
	STATE	5,783,268	6,940,231	7,876,718	9,191,360	5,783,268	6,573,466	6,850,084	7,376,160

Notes: [1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Department of Economics and Statistics, Government of Tamil Nadu, 2000.

A6.2—Per Capita Income at Current and Constant Prices

(in Rs)

S.no.	Districts	Per capita income at current prices				Per capita income at constant prices			
		1993–94	1994–95	1995–96	1996–97	1993–94	1994–95	1995–96	1996–97
1	2	3	4	5	6	7	8	9	10
1.	Chennai	14,440	17,225	20,060	23,044	14,440	16,111	17,344	18,682
2.	Kanchipuram	11,749	14,455	16,314	23,075	11,749	13,861	14,635	18,924
3.	Thiruvallur[1]				15,755				12,951
4.	Cuddalore	6137	8031	8766	9544	6137	7737	7911	7587
5.	Villupuram[2]		6466	6616	8101		6253	6067	6402
6.	Vellore	8282	9741	12,973	13,191	8282	9335	9860	10,635
7.	Tiruvannamalai	5483	6366	6429	8255	5483	6135	6035	6567
8.	Salem	9950	10,987	12,801	16,548	9950	10,240	11,274	13,283
9.	Namakkal[3]				12,453				9724

(Contd...)

(Table A6.2 Contd.)

S.no.	Districts	Per capita income at current prices				Per capita income at constant prices			
		1993–94	1994–95	1995–96	1996–97	1993–94	1994–95	1995–96	1996–97
1	2	3	4	5	6	7	8	9	10
10.	Dharmapuri	7351	8926	9995	10,559	7351	8661	8906	8475
11.	Erode	9931	11,747	12,920	16,225	9931	11,300	11,478	12,993
12.	Coimbatore	12,891	15,636	17,546	19,930	12,891	15,167	15,407	16,363
13.	Nilgiris	8855	9581	11,114	13,390	8855	9011	9567	10,943
14.	Tiruchirapalli	8472	9694	11,301	14,634	8472	9403	9836	11,761
15.	Karur[4]				11,609				9769
16.	Perambalur[4]				11,040				11,189
17.	Ariyalur[4]								
18.	Thanjavur	7060	8485	9288	9630	7060	8249	8403	7746
19.	Tiruvarur[5]				9361				7445
20.	Nagapattinam[5]	7134	9119	8799	12,960	7134	8749	8073	10,341
21.	Pudukkottai	6525	7783	7949	10,535	6525	7410	6883	8244
22.	Madurai	9021	10,885	12113	16,554	9021	10,334	10,563	13,483
23.	Theni[6]				11895				9458
24.	Dindigul	8050	9714	10,588	11,841	8050	9041	9098	9667
25.	Virudhunagar	9783	10,999	12,350	14,484	9783	10,433	10,790	11,826
26.	Ramanathapuram	6726	7763	7980	10,325	6726	7217	6687	7954
27.	Sivagangai	6836	7764	7412	9276	6836	7702	6467	7436
28.	Tirunelveli	8641	10,098	11,403	13,111	8641	9537	9909	10,429
29.	Thoothukudi	10,865	13,236	15,062	16,157	10,865	12,711	12,975	12,858
30.	Kanniyakumari	6432	7387	8951	10,266	6432	6994	7725	8096
	STATE	9073	10,743	12,096	13,985	9073	10,257	10,573	11,320

Notes: [1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Department of Economics and Statistics, Government of Tamil Nadu, 2000.

A6.3—SHARE OF DISTRICT DOMESTIC PRODUCT TO STATE DOMESTIC PRODUCT

S.no.	Districts	Percentage to State Income			
		Current Prices		Constant Prices	
		1993–94	1996–97	1993–94	1996–97
1	2	3	4	5	6
1.	Chennai	11.13	11.38	11.13	11.42
2.	Kanchipuram	11.06	5.76	11.06	5.81
3.	Thiruvallur[1]		5.81		5.81
4.	Cuddalore	5.93	2.67	5.93	2.62
5.	Villupuram[2]		2.82		2.76
6.	Vellore	4.97	5.11	4.97	5.09
7.	Tiruvannamalai	2.16	2.11	2.16	2.08
8.	Salem	7.65	5.50	7.65	5.47
9.	Namakkal[3]		2.07		2.00
10.	Dharmapuri	3.48	3.26	3.48	3.23
11.	Erode	4.46	4.73	4.46	4.69

(Contd...)

(Table A6.3 Contd.)

S.no.	Districts	Percentage to State Income			
		Current Prices		Constant Prices	
		1993–94	1996–97	1993–94	1996–97
1	2	3	4	5	6
12.	Coimbatore	9.02	9.07	9.02	9.15
13.	Nilgiris	1.23	1.21	1.23	1.22
14.	Tiruchirapalli	6.87	4.13	6.87	4.11
15.	Karur[4]		1.26		1.31
16.	Perambalur[4]		1.50		1.87
17.	Ariyalur[4]				
18.	Thanjavur	2.90	2.56	2.90	2.55
19.	Tiruvarur[5]		1.44		1.43
20.	Nagapattinam[5]	3.30	1.87	3.30	1.86
21.	Pudukkottai	1.67	1.76	1.67	1.71
22.	Madurai	6.11	4.53	6.11	4.56
23.	Theni[6]		1.94		1.91
24.	Dindigul	2.75	2.63	2.75	2.65
25.	Virudhunagar	3.03	2.92	3.03	2.94
26.	Ramanathapuram	1.48	1.48	1.48	1.41
27.	Sivagangai	1.43	1.26	1.43	1.25
28.	Tirunelveli	4.22	4.15	4.22	4.10
29.	Thoothukudi	3.14	3.03	3.14	2.97
30.	Kanniyakumari	1.99	2.05	1.99	2.01
	STATE	100.00	100.00	100.00	100.00

Notes: [1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Department of Economics and Statistics, Government of Tamil Nadu, 2000.

A6.4—Estimates of Gross District Domestic Products At Current Prices

(Sectoral Shares)

S.no.	Districts	1993–94				1996–97			
		Sectoral contribution (% share)				Sectoral Contribution (% share)			
		Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total
1	2	3	4	5	6	7	8	9	10
1.	Chennai	1.06	31.57	67.37	100.00	1.07	26.73	72.20	100.00
2.	Kancheepuram	14.91	48.52	36.57	100.00	10.68	43.46	45.86	100.00
3.	Thiruvallur[1]	NA	NA	NA	NA	10.53	55.25	34.22	100.00
4.	Cuddalore	46.29	16.24	37.47	100.00	39.24	22.48	38.28	100.00
5.	Villupuram[2]					36.65	15.36	47.99	100.00
6.	Vellore	21.42	36.95	41.63	100.00	20.41	34.79	44.79	100.00
7.	Tiruvannamalai	46.08	19.97	33.94	100.00	36.40	22.73	40.87	100.00
8.	Salem	30.41	34.90	34.69	100.00	18.53	41.72	39.75	100.00
9.	Namakkal[3]					42.18	18.58	39.24	100.00

(Contd...)

(Table A6.4 Contd.)

S.no.	Districts	1993–94 Sectoral contribution (% share) Primary	Secondary	Tertiary	Total	1996–97 Sectoral Contribution (% share) Primary	Secondary	Tertiary	Total
1	2	3	4	5	6	7	8	9	10
10.	Dharmapuri	38.04	28.54	33.42	100.00	31.00	24.74	44.26	100.00
11.	Erode	33.51	26.89	39.60	100.00	26.86	29.89	43.26	100.00
12.	Coimbatore	12.68	49.05	38.28	100.00	11.18	45.69	43.13	100.00
13.	Nilgiris	35.22	21.11	43.67	100.00	30.99	19.64	49.37	100.00
14.	Trichy	30.99	26.95	42.06	100.00	17.22	36.09	46.69	100.00
15.	Karur[4]					28.08	27.62	44.30	100.00
16.	Perambalur[4]					31.54	13.97	54.49	100.00
17.	Ariyalur[5]								
18.	Thanjavur	36.08	16.58	47.34	100.00	29.04	12.77	58.18	100.00
19.	Tiruvarur[6]					27.37	22.57	50.06	100.00
20.	Nagapattinam	43.81	11.18	45.00	100.00	36.87	9.44	53.70	100.00
21.	Pudukkottai	40.35	19.16	40.49	100.00	33.10	22.21	44.69	100.00
22.	Madurai	22.17	25.92	51.91	100.00	15.19	27.17	57.64	100.00
23.	Theni[7]					29.08	18.15	52.78	100.00
24.	Dindigul	35.07	23.36	41.57	100.00	27.54	23.22	49.25	100.00
25.	Virudhunagar	16.59	43.32	40.09	100.00	10.49	43.84	45.67	100.00
26.	Ramanathapuram	42.15	13.87	43.98	100.00	33.48	16.38	50.14	100.00
27.	Sivagangai	35.42	21.88	42.69	100.00	21.90	22.55	55.55	100.00
28.	Tirunelveli	25.59	35.24	39.17	100.00	15.33	40.26	44.41	100.00
29.	Thoothkudi	24.33	33.75	41.92	100.00	20.74	33.35	45.91	100.00
30.	Kanniyakumari	33.75	19.15	47.10	100.00	30.57	18.94	50.49	100.00
	STATE	25.06	31.67	43.27	100.00	19.69	31.66	48.65	100.00

Notes: NA: Figure not available.
[1]Figure relating to composite districts Kancheepuram and Thiruvallur.
[2]Figure relating to composite districts Cuddalore and Villupuram.
[3]Figure relating to composite districts Salem and Namakkal.
[4]Figure relating to composite districts Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite districts Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite districts Perambalur and Ariyalur.
[7]Figure relating to composite districts Madurai and Theni.
Source: Department of Economics and Statistics, Government of Tamil Nadu, 2000.

A6.5—Sector-wise Growth of Gross District Domestic Product at Constant (1993–94) Prices

(Percentage)

S.no.	Districts	Annual Average Growth Rate 1993–94 to 1996–97 Primary	Secondary	Tertiary	Total
1	2	3	4	5	6
1.	Chennai	3.82	4.23	11.88	9.39
2.	Kancheepuram	–3.54	11.99	13.50	10.39
3.	Thiruvallur[1]				
4.	Cuddalore	–2.37	11.49	10.85	5.13
5.	Villupuram[2]				
6.	Vellore	6.49	7.45	12.51	9.37
7.	Tiruvannamalai	–0.97	11.73	14.87	7.37

(Contd...)

(Table A6.5 Contd.)

(Percentage)

S.no.	Districts	Annual Average Growth Rate 1993–94 to 1996–97			
		Primary	Secondary	Tertiary	Total
1	2	3	4	5	6
8.	Salem	–0.54	8.30	13.42	7.62
9.	Namakkal[3]				
10.	Dharmapuri	–2.25	4.24	16.87	6.25
11.	Erode	1.52	14.40	14.58	10.46
12.	Coimbatore	10.38	6.53	13.39	9.15
13.	Nilgiris	5.64	6.10	11.38	8.19
14.	Tirchy	4.53	12.35	13.82	10.66
15.	Karur[4]				
16.	Perambalur[4]				
17.	Ariyalur[4]				
18.	Thanjavur	–2.35	–1.97	11.79	4.38
19.	Tiruvarur[5]				
20.	Nagapattinam	0.08	23.50	14.54	8.90
21.	Pudukkottai	2.07	16.20	14.69	9.76
22.	Madurai	6.55	8.77	14.06	10.66
23.	Theni[6]				
24.	Dindigul	–1.34	7.39	13.86	7.24
25.	Virudhunagar	–6.32	7.75	12.66	7.37
26.	Ramanathapuram	–2.24	14.63	14.35	7.27
27.	Sivagangai	–4.10	5.58	13.82	4.64
28.	Tirunelveli	–9.71	12.24	13.19	7.44
29.	Thoothukudi	1.11	8.81	10.75	6.77
30.	Kanniyakumari	3.12	10.48	12.15	8.88
	STATE	–0.46	8.78	13.11	8.52

Notes: [1]Figure relating to composite districts Kancheepuram and Thiruvallur.
[2]Figure relating to composite districts Cuddalore and Villupuram.
[3]Figure relating to composite districts Salem and Namakkal.
[4]Figure relating to composite districts Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite districts Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite districts Madurai and Theni.
Source: Department of Economics and Statistics, Government of Tamil Nadu, 2000.

A6.6—ESTIMATES OF POVERTY IN TAMIL NADU, 1993–94

S.no.	Districts	Percentage of Population below Poverty Line					
		Rural	Rank	Urban	Rank	State	Rank
1.	Chennai			31.58	6	31.58	15
2.	Kancheepuram	23.38	10	33.62	7	27	11
3.	Thiruvallur[1]						
4.	Cuddalore	51.3	21	48.58	15	50.91	22
5.	Villupuram[2]						
6.	Vellore	29.63	15	53.84	19	36.55	16
7.	Tiruvannamalai	41.41	18	49.68	17	42.15	17
8.	Salem	26.59	13	40.54	11	30.14	12
9.	Namakkal[3]						
10.	Dharmapuri	26.61	14	27.73	3	26.7	9
11.	Erode	17.86	4	21.81	1	18.32	1

(Contd...)

(Table A6.6 Contd.)

S.no.	Districts	Percentage of Population below Poverty Line					
		Rural	Rank	Urban	Rank	State	Rank
12.	Coimbatore	24.36	11	27.84	5	25.77	5
13.	Nilgiris	17.64	3	27.75	4	21.24	3
14.	Trichy	20.79	7	27.47	2	21.59	4
15.	Karur[4]						
16.	Perambalur						
17.	Ariyalur						
18.	Thanjavur	18.4	5	52.22	18	30.73	14
19.	Tiruvarur[5]						
20.	Nagapattinam	15.55	1	36.71	8	20.21	2
21.	Pudukkottai	23.35	9	48.24	14	26.9	10
22.	Madurai	25.6	12	37.62	9	30.35	13
23.	Theni[6]						
24.	Dindigul	47.04	19	42.8	12	46.28	19
25.	Viruthunagar	20.04	6	38.76	10	26.21	7
26.	Ramanathapuram	16.7	2	60.71	21	25.86	6
27.	Sivagangai	20.97	8	43.03	13	26.63	8
28.	Tirunelveli	34.58	16	56.53	20	44.1	18
29.	Thoothukudi	37.44	17	62.66	22	47.02	20
30.	Kanniyakumari	48.55	20	48.82	16	48.59	21
	STATE	28.93		38.63		31.66	

Notes: [1]Figure relating to composite districts Kancheepuram and Thiruvallur.
[2]Figure relating to composite districts Cuddalore and Villupuram.
[3]Figure relating to composite districts Salem and Namakkal.
[4]Figure relating to composite districts Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite districts Thanjavur and Tiruvarur.
[6]Figure relating to composite districts Madurai and Theni.
Source: Department of Economics and Statistics, Government of Tamil Nadu, 2000.

A6.7—District Domestic Product Series
Per Capita Income, Growth Rate and Sectoral Contribution

S.no.	Districts	Per capita income (Rs) 1996–97	Growth Rate DDP % 1993–97	Sectoral Contribution (% share) 1996–97		
				Primary	Secondary	Tertiary
1	2	3	4	5	6	7
1.	Chennai	23,044	9.39	1.07	26.73	72.20
2.	Kancheepuram	23,075	10.39	10.68	43.46	45.86
3.	Thiruvallur[1]	15,755		10.53	55.25	34.22
4.	Cuddalore	9544	5.13	39.24	22.48	38.28
5.	Villupuram[2]	8101		36.65	15.36	47.99
6.	Vellore	13,191	9.37	20.41	34.79	44.79
7.	Tiruvannamalai	8255	7.37	36.40	22.73	40.87
8.	Salem	16,548	7.62	18.53	41.72	39.75
9.	Namakkal[3]	12,453		42.18	18.58	39.24
10.	Dharmapuri	10,559	6.25	31.00	24.74	44.26
11.	Erode	16,225	10.46	26.86	29.89	43.26
12.	Coimbatore	19,930	9.15	11.18	45.69	43.13

(Contd...)

(Table A6.7 Contd.)

S.no.	Districts	Per capita income (Rs) 1996–97	Growth Rate DDP % 1993–97	Sectoral Contribution (% share) 1996–97		
				Primary	Secondary	Tertiary
1	2	3	4	5	6	7
13.	Nilgiris	13,390	8.19	30.99	19.64	49.37
14.	Tiruchirapalli	14,634	10.66	17.22	36.09	46.69
15.	Karur[4]	11,609		28.08	27.62	44.30
16.	Perambalur[4]	11,040		31.54	13.97	54.49
17.	Ariyalur[5]					
18.	Thanjavur	9630	4.38	29.04	12.77	58.18
19.	Tiruvarur	9361		27.37	22.57	50.06
20.	Nagapattinam	12,960	8.90	36.87	9.44	53.70
21.	Pudukkottai	10,535	9.76	33.10	22.21	44.69
22.	Madurai	16,554	10.66	15.19	27.17	57.64
23.	Theni[6]	11,895		29.08	18.15	52.78
24.	Dindigul	11,841	7.24	27.54	23.22	49.25
25.	Virudhunagar	14,484	7.37	10.49	43.84	45.67
26.	Ramanathapuram	10,325	7.27	33.48	16.38	50.14
27.	Sivagangai	9276	4.64	21.90	22.55	55.55
28.	Tirunelveli	13,111	7.44	15.33	40.26	44.41
29.	Thoothukudi	16,157	6.77	20.74	33.35	45.91
30.	Kanniyakumari	10,266	8.88	30.57	18.94	50.49
	STATE	13,985	8.52	19.69	31.66	48.65

Notes: [1]Figure relating to composite districts Kancheepuram and Thiruvallur.
[2]Figure relating to composite districts Cuddalore and Villupuram.
[3]Figure relating to composite districts Salem and Namakkal.
[4]Figure relating to composite districts Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite districts Perambalur and Ariyalur.
[6]Figure relating to composite districts Thanjavur and Tiruvarur.
[7]Figure relating to composite districts Madurai and Theni.
Source: Department of Economics and Statistics, Government of Tamil Nadu, 2000.

A7 Housing Profile

A7.1—District-wise Housing Units by Number of Rooms per Housing Unit—Rural

(in lakhs)

S.no.	Districts	Total Housing Units	Occupied Housing Units by Number of Rooms					
			One	Two	Three	Four	Five	Six and above
1	2	3	4	5	6	7	8	9
1.	Chennai							
2.	Kancheepuram	5.53[1]	3.17[1]	1.67[1]	0.41[1]	0.19[1]	0.05[1]	0.04[1]
3.	Thiruvallur							
4.	Cuddalore	8.81[2]	5.48[2]	2.6[2]	0.48[2]	0.16[2]	0.04[2]	0.03[2]
5.	Villupuram							
6.	Vellore	4.31	2.64	1.12	0.3	0.17	0.04	0.03
7.	Tiruvannamalai	3.86	2.35	1.12	0.24	0.1	0.02	0.02
8.	Salem	7.12[3]	4.12[3]	2.17[3]	0.54[3]	0.19[3]	0.05[3]	0.04[3]
9.	Namakkal							
10.	Dharmapuri	4.56	2.72	1.3	0.33	0.14	0.04	0.03

(Contd...)

(Table A7.1 Contd.)

S.no.	Districts	Total Housing Units	Occupied Housing Units by Number of Rooms					
			One	Two	Three	Four	Five	Six and above
1	2	3	4	5	6	7	8	9
11.	Erode	4.74	2.69	1.49	0.38	0.11	0.3	0.2
12.	Coimbatore	4.18	2.06	1.47	0.44	0.14	0.04	0.03
13.	Nilgiris	0.8	0.27	0.26	0.13	0.06	0.04	0.03
14.	Trichy	7.23[4]	5.12[4]	1.53[4]	0.37[4]	0.14[4]	0.04[4]	0.02[4]
15.	Karur							
16.	Perambalur							
17.	Ariyalur							
18.	Thanjavur	7.88[5]	5.48[5]	1.75[5]	0.45[5]	0.13[5]	0.03[5]	0.02[5]
19.	Tiruvarur							
20.	Nagapattinam							
21.	Pudukkotai	2.33	1.64	0.41	0.1	0.03	0.01	0.01
22.	Madurai	4.5[6]	2.5[6]	1.44[6]	0.37[6]	0.13[6]	0.03[6]	0.02[6]
23.	Theni							
24.	Dindigul	3.34	2.16	0.87	0.19	0.06	0.02	0.02
25.	Virudhunagar	2.37	1.15	0.89	0.23	0.06	0.02	0.01
26.	Ramnad	1.98	1.09	0.62	0.19	0.05	0.01	0.01
27.	Sivagangai	1.83	1.16	0.47	0.13	0.03	0.01	0.01
28.	Tirunelveli	4.09	1.57	1.46	0.69	0.23	0.08	0.05
29.	Thoothukudi	2.05	0.79	0.78	0.31	0.11	0.03	0.02
30.	Kanniyakumari	2.75	0.57	0.79	0.62	0.38	0.2	0.18
	STATE	43.19	22.86	13.05	4.28	1.67	0.86	0.65

Notes: [1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Vellore and Tiruvannamalai.
[4]Figure relating to composite district Salem and Namakkal.
[5]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[6]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[7]Figure relating to Composite district Madurai and Theni.
Source: Census of India, 1991.

A7.2—District-wise Housing units by Number of Rooms per Housing Unit—Urban

(in lakhs)

S.no.	Districts	Total Housing Units	Occupied Housing Units by Number of Rooms					
			One	Two	Three	Four	Five	Six and above
1	2	3	4	5	6	7	8	9
1.	Chennai	7.6	3.25	2.38	1.09	0.54	0.18	0.15
2.	Kancheepuram	4.21[1]	1.62[1]	1.41[1]	0.67[1]	0.33[1]	0.1[1]	0.07[1]
3.	Thiruvallur							
4.	Cuddalore	1.51[2]	0.65[2]	0.47[2]	0.24[2]	0.1[2]	0.02[2]	0.01[2]
5.	Villupuram							
6.	Vellore	1.71	0.69	0.55	0.24	0.14	0.04	0.04
7.	Tiruvannamalai	0.45	0.22	0.14	0.05	0.02	0.01	0.01
8.	Salem	2.55[3]	1.2[3]	0.86[3]	0.3[3]	0.12[3]	0.04[3]	0.03[3]
9.	Namakkal							
10.	Dharmapuri	0.47	0.18	0.17	0.07	0.03	0.01	0.01
11.	Erode	1.37	0.56	0.47	0.21	0.08	0.03	0.02
12.	Coimbatore	4.02	1.43	1.39	0.69	0.28	0.11	0.1

(Contd...)

(Table A7.2 Contd.)

S.no.	Districts	Total Housing Units	Occupied Housing Units by Number of Rooms					
			One	Two	Three	Four	Five	Six and above
1	2	3	4	5	6	7	8	9
13.	Nilgiris	0.75	0.25	0.25	0.15	0.05	0.03	0.02
14.	Trichy	2.3[4]	1.13[4]	0.71[4]	0.28[4]	0.11[4]	0.04[4]	0.03[4]
15.	Karur							
16.	Perambalur							
17.	Ariyalur							
18.	Thanjavur	2.02[5]	1.16[5]	0.56[5]	0.18[5]	0.08[5]	0.02[5]	0.02[5]
19.	Tiruvarur							
20.	Nagapattinam							
21.	Pudukkotai	0.37	0.19	0.1	0.04	0.02	0.01	–
22.	Madurai	2.98[6]	1.42[6]	0.98[6]	0.35[6]	0.13[6]	0.05[6]	0.04[6]
23.	Theni							
24.	Dindigul	0.79	0.38	0.25	0.1	0.04	0.01	0.01
25.	Ramnad	1.36	0.66	0.43	0.16	0.06	0.02	0.02
26.	Virudhunagar	0.45	0.22	0.13	0.05	0.02	0.01	–
27.	Sivagangai	0.61	0.3	0.18	0.07	0.03	0.01	0.01
28.	Tirunelveli	1.72	0.56	0.52	0.37	0.15	0.05	0.05
29.	Thoothukudi	1.34	0.46	0.4	0.26	0.12	0.05	0.04
30.	Kanniyakumari	0.54	0.12	0.14	0.13	0.07	0.04	0.05
	STATE	23.55	9.47	7.5	3.68	1.65	0.61	0.53

Notes: [1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Vellore and Tiruvannamalai.
[4]Figure relating to composite district Salem and Namakkal.
[5]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[6]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[7]Figure relating to composite district Madurai and Theni.
Source: Census of India, 1991.

A8 Drinking Water, Electricity and Sanitation Profile

A8.1—Safe Drinking Water and Electricity (Total, Rural and Urban)

S.no.	Districts	% of households having access to					
		Safe Drinking Water			Electricity		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
1.	Chennai	71.01		71.01	83.42	–	83.42
2.	Kancheepuram	53.39[1]	61.42[1]	42.44[1]	61.60[1]	49.73[1]	77.43[1]
3.	Thiruvallore						
4.	Cuddalore	73.23[2]	71.74[2]	84.06[2]	47.18[2]	43.18[2]	70.67[2]
5.	Villupuram						
6.	Vellore	65.54	63.81	70.13	57.97	50.35	77.19
7.	Tiruvannamalai	41.53	62.54	65.85	51.51	48.96	77.78
8.	Salem	58.48[3]	53.17[3]	74.14[3]	55.33[3]	48.24[3]	75.69[3]
9.	Namakkal						

(Contd...)

(Table A8.1 Contd.)

S.no.	Districts	% of households having access to					
		Safe Drinking Water			Electricity		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
10.	Dharmapuri	60.64	59.40	68.11	45.13	41.89	78.72
11.	Erode	62.58	57.65	80.17	53.43	47.05	75.91
12.	Coimbatore	76.85	69.18	85.04	65.65	51.91	79.85
13.	Nilgiris	63.08	60.72	67.50	55.13	51.85	58.67
14.	Trichy	72.12[4]	69.38[4]	81.26[4]	48.22[4]	39.78[4]	74.35[4]
15.	Karur						
16.	Perambalur						
17.	Ariyalur						
18.	Thanjavur	81.63[5]	82.51[5]	78.58[5]	43.23[5]	36.46[5]	68.81[5]
19.	Nagapattinam						
20.	Tiruvarur						
21.	Pudukkotai	48.70	46.43	60.67	38.89	33.62	74.86
22.	Madurai	83.96[6]	80.75[6]	88.93[6]	55.61[6]	41.56[6]	77.18[6]
23.	Theni						
24.	Dindigul	75.79	73.63	87.75	44.07	37.72	70.89
25.	Ramanathapuram	31.60	27.53	52.70	41.56	33.33	73.33
26.	Virudhunagar	76.94	72.55	84.61	57.10	46.84	74.26
27.	Sivagangai	56.15	51.80	67.27	44.86	35.71	72.13
28.	Tirunelveli	70.74	63.23	88.29	62.31	55.85	77.33
29.	Thoothukudi	69.03	61.72	81.90	58.41	48.78	73.13
30.	Kanniyakumari	40.24	32.73	80.12	53.80	48.73	77.78
	STATE	66.60	64.27	74.28	54.74	44.49	94.08

Notes: [1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Census of India, 1991.

A8.2—Percentage of Households with Access to Toilets and Safe Drinking Water and Electricity

S.no.	Districts	% of households having access to					
		Toilets			Safe Drinking Water and Electricity		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
1.	Chennnai	82.37	–	82.37	59.45		59.45
2.	Kancheepuram	31.21[1]	8.57[1]	61.05[1]	30.80[1]	30.44[1]	31.06[1]
3.	Thiruvallur	NA	NA	NA	NA	NA	NA
4.	Cuddalore	10.85[2]	3.91[2]	50.93[2]	35.31[2]	31.27[2]	58.71[2]
5.	Villupuram	NA	NA	NA	NA	NA	NA
6.	Vellore	21.76	5.87	60.82	39.32	33.41	54.21
7.	Tiruvannamalai	8.63	3.94	49.56	33.41	31.66	48.29
8.	Salem	14.26[3]	5.41[3]	39.37[3]	33.68[3]	25.74[3]	55.70[3]
9.	Namakkal	NA	NA	NA	NA	NA	NA

(Contd...)

(Table A8.2 Contd.)

S.no.	Districts	% of households having access to					
		Toilets			Safe Drinking Water and Electricity		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
10.	Dharmapuri	11.23	6.18	57.87	28.83	26.08	52.72
11.	Erode	17.97	8.50	51.09	33.33	25.76	60.50
12.	Coimbatore	31.43	7.94	55.72	51.52	35.19	68.88
13.	Nilgiris	25.83	14.44	38.93	41.03	42.39	46.79
14.	Trichy	17.18[4]	5.98[4]	51.96[4]	35.12[4]	27.37[4]	59.53[4]
15.	Karur	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA
18.	Thanjavur	17.58[5]	8.71[5]	52.97[5]	34.81[5]	30.20[5]	52.39[5]
19.	Tiruvarur	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	11.93	4.78	55.95	20.45	15.97	44.53
22.	Madurai	27.14[6]	7.62[6]	56.95[6]	47.06[6]	33.37[6]	67.45[6]
23.	Theni	NA	NA	NA	NA	NA	NA
24.	Dindigul	14.33	6.32	49.37	34.87	28.13	62.32
25.	Ramanathapuram	11.19	3.59	43.33	16.46	11.17	37.96
26.	Virudhunagar	12.41	4.30	27.06	45.04	34.79	63.83
27.	Sivagangai	15.35	3.90	49.18	24.59	17.48	45.94
28.	Tirunelveli	18.85	8.10	43.72	46.13	36.62	69.12
29.	Thoothukudi	22.33	6.39	46.79	43.07	31.84	62.36
30.	Kanniyakumari	34.35	29.09	61.30	25.61	17.82	65.21
	STATE	23.12	7.16	70.39	37.79	28.88	56.91

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Census of India, 1991.

A8.3—Percentage of Households with Access to Electricity and Toilets and all 3 Facilities

S.no.	Districts	% of households having access to					
		Electricity and Toilets			All 3 facilities		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
1.	Chennai	78.65		78.65	56.29		56.29
2.	Kancheepuram	30.29[1]	7.79[1]	59.75[1]	12.01[1]	4.35[1]	21.81[1]
3.	Thiruvallur	NA	NA	NA	NA	NA	NA
4.	Cuddalore	10.09[2]	3.30[2]	50.04[2]	8.15[2]	2.27[2]	42.03[2]
5.	Villupuram	NA	NA	NA	NA	NA	NA
6.	Vellore	20.57	5.34	59.52	13.94	3.48	40.07
7.	Tiruvannamalai	7.89	3.37	48.29	4.87	1.82	30.73
8.	Salem	13.33[3]	4.50[3]	38.05[3]	9.61[3]	2.67[3]	29.03[3]
9.	Namakkal	NA	NA	NA	NA	NA	NA

(Contd...)

(Table A8.3 Contd.)

S.no.	Districts	% of households having access to					
		Electricity and Toilets			All 3 facilities		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
10.	Dharmapuri	10.14	5.26	54.83	6.56	3.29	37.96
11.	Erode	16.67	7.39	49.56	12.25	4.22	40.82
12.	Coimbatore	29.72	6.94	53.46	25.45	5.27	46.75
13.	Nilgiris	24.36	13.72	36.09	20.51	11.22	29.41
14.	Trichy	16.14[4]	4.98[4]	50.84[4]	12.16[4]	3.59[4]	39.11[4]
15.	Karur	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA
18.	Thanjavur	16.45[5]	7.71[5]	50.41[5]	12.61[5]	6.19[5]	37.56[5]
19.	Nagapattinam	NA	NA	NA	NA	NA	NA
20.	Tiruvarur	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	11.15	4.32	55.66	6.32	2.16	33.40
22.	Madurai	25.80[6]	6.45[6]	55.37[6]	22.06[6]	4.67[6]	47.99[6]
23.	Theni	NA	NA	NA	NA	NA	NA
24.	Dindigul	13.32	5.09	48.33	11.38	3.89	41.97
25.	Ramanathapuram	10.70	3.05	42.43	5.35	1.52	22.33
26.	Virudhunagar	11.80	3.39	26.72	10.19	2.97	23.01
27.	Sivagangai	14.34	3.28	47.58	9.02	1.64	31.17
28.	Tirunelveli	17.73	7.32	42.40	15.49	5.86	38.34
29.	Thoothukudi	21.24	5.88	45.08	17.99	4.41	39.82
30.	Kanniyakumari	30.79	25.09	59.62	27.44	8.00	48.44
	STATE	21.84	6.21	55.57	15.57	3.95	40.48

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Census of India, 1991.

A9 Deprivation Profile

A9.1—Percentage of Households Having None of the 3 Facilities and Those Without Access to Toilets

S.no.	Districts	% of households having access to none of the 3 facilities			% of households without access to toilets		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
1.	Chennai	3.99		3.99	17.63		17.63
2.	Kancheepuram	14.89[1]	18.94[1]	10.62[1]	68.79[1]	91.43[1]	38.95[1]
3.	Thiruvallur	NA	NA	NA	NA	NA	NA
4.	Cuddalore	13.99[2]	16.27[2]	3.66[2]	89.15[2]	96.09[2]	49.07[2]
5.	Villupuram	NA	NA	NA	NA	NA	NA
6.	Vellore	14.72	19.18	5.71	78.24	94.13	39.18
7.	Tiruvannamalai	18.28	20.02	4.96	91.37	96.06	50.44
8.	Salem	18.8[3]	23.98[3]	5.7[3]	85.74[3]	94.59[3]	60.63[3]

(Contd...)

(Table A9.1 Contd.)

S.no.	Districts	% of households having access to none of the 3 facilities			% of households without access to toilets		
		Total	Rural	Urban	Total	Rural	Urban
1	2	3	4	5	6	7	8
9.	Namakkal	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	21.97	24.77	6.16	88.77	93.82	42.13
11.	Erode	15.85	20.75	4.52	82.03	91.50	48.91
12.	Coimbatore	7.2	13.77	4.02	68.57	92.06	44.28
13.	Nilgiris	20.32	29.68	18.86	74.17	85.56	61.07
14.	Trichy	13.64[4]	17.86[4]	3.75[4]	82.82[4]	94.02[4]	48.04[4]
15.	Karur	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA
18.	Thanjavur	8.78[5]	11.07[5]	4.61[5]	82.42[5]	91.29[5]	47.03[5]
19.	Tiruvarur	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	31.9	35.4	7.6	88.07	95.22	44.05
22.	Madurai	6.28[6]	10.95[6]	0.77[6]	72.86[6]	92.38[6]	43.05[6]
23.	Theni	NA	NA	NA	NA	NA	NA
24.	Dindigul	14	16.17	3.34	85.67	93.68	50.63
25.	Virudhunagar	10.64	15.06	3.66	88.81	96.41	56.67
26.	Ramanathapuram	42.3	49.57	10.45	87.59	95.70	72.94
27.	Sivagangai	23.24	30.12	6.48	84.65	96.10	50.82
28.	Tirunelveli	13.34	17.19	3.46	81.15	91.90	56.28
29.	Thoothukudi	14.25	21.58	5.55	77.67	93.61	53.21
30.	Kanniyakumari	27.44	33.45	6.65	65.65	70.91	38.70
	STATE	15.99	19.8	16.73	76.88	92.84	29.61

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Census of India, 1991.

A10. Gender Disparities Profile

A10.1—Female Populaton and Sex Ratio

S.no.	Districts	Female Population (in lakhs)			Female Population as % of male			Sex ratio females per 1000 males		
		1981	1991	2001	1981	1991	2001	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11
1.	Chennai	15.83	18.55	20.55	93.4	93.4	95.1	934	934	951
2.	Kancheepuram	17.68[1]	22.79[1]	14.15	95.7[1]	96.2[1]	97.2	957[1]	962	972
3.	Thiruvallur	NA	NA	13.49	NA	95.7	97.0	NA	957	970
4.	Cuddalore	20.71[2]	23.96[2]	11.32	97.2[2]	96.7	98.5	972[2]	967	985
5.	Villupuram	NA	NA	14.59	NA	96.9	98.3	NA	969	983
6.	Vellore	21.84[3]	14.96	17.39	97.9[3]	97.8	99.7	979[3]	978	997
7.	Tiruvannamalai	NA	10.13	10.88	NA	98.3	99.6	NA	983	996

(Contd...)

(Table A10.1 Contd.)

S.no.	Districts	Female Population (in lakhs)			Female Population as % of male			Sex ratio females per 1000 males		
		1981	1991	2001	1981	1991	2001	1981	1991	2001
1	2	3	4	5	6	7	8	9	10	11
8.	Salem	16.76[4]	18.84[4]	14.41	95.0[4]	92.5	92.9	950[4]	925	929
9.	Namakkal	NA	NA	7.35	NA	96	96.7	NA	960	967
10.	Dharmapuri	9.78	11.78	13.71	96.0	94.2	93.8	960	942	938
11.	Erode	10.11	11.35	12.68	95.6	95.8	97.1	956	958	971
12.	Coimbatore	14.91	17.11	20.68	95.0	95.2	95.9	950	952	959
13.	The Nilgiris	3.08	3.53	3.85	95.7	98.3	101.5	957	983	1015
14.	Trichy	17.93[5]	20.52[5]	11.95	98.5[5]	98.2	100.0	985[5]	982	1000
15.	Karur	NA	NA	4.69	NA	99.9	101.0	NA	999	1010
16.	Perambalur	NA	NA	2.44	NA	97.5	100.7	NA	975	1007
17.	Ariyalur	NA	NA	3.48	NA	97.5	100.7	NA	975	1007
18.	Thanjavur	20.2[6]	22.58[6]	11.13	98.8[6]	99.6	102.0	988[6]	996	1020
19.	Tiruvarur	NA	NA	5.86	NA	98.7	101.3	NA	987	1013
20.	Nagapattinam	NA	NA	7.49	NA	99.3	101.4	NA	993	1014
21.	Pudukkotai	5.8	6.65	7.31	100.5	100.5	101.5	1005	1005	1015
22.	Madurai	22.39[7]	16.93[8]	12.67	97.5[7]	96.4	97.8	975[7]	964	978
23.	Theni	NA	NA	5.41	NA	96.4	97.9	NA	964	979
24.	Dindigul	NA	8.69	9.53	NA	97.6	98.6	NA	976	986
25.	Ramanathapuram	16.87[9]	5.75	6.01	102.4[9]	101.1	103.3	1024[9]	1011	1033
26.	Virudhunagar[7]	NA	7.81	8.81	NA	96.4	101.1	NA	964	1011
27.	Sivagangai[9]	NA	5.48	5.85	NA	103.3	103.5	NA	1033	1035
28.	Tirunelveli	18.25[10]	12.71	14.29	104.4[10]	103.4	104.2	1044[10]	1034	1042
29.	Thoothukudi	NA	7.46	8.02	NA	105.1	104.9	NA	1051	1049
30.	Kanniyakumari	7.06	7.97	8.4	98.5	99.1	101.3	985	991	1013
	STATE	239.2	275.59	308.2	97.7	97.4	98.6	977	974	986

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Vellore and Tiruvannamalai.
[4]Figure relating to composite district Salem and Namakkal.
[5]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[6]Figure relating to composite district Thanjavur, Thiruvarur and Nagapattinam.
[7]Figure relating to composite district Madurai, Theni, Dindigul and Virudunagar.
[8]Figure relating to composite district Madurai and Theni.
[9]Figure relating to composite district Ramanathapuram and Sivagangai.
[10]Figure relating to composite district Tiruneleli and Thoothukudi.
Source: Socio-cultural Tables, Census 1981, 1991; Census 2001 (Provisional).

A10.2—FEMALE LITERACY, 1991

S.no.	Districts	Female Literacy, 1991 %			Gap in male and female literacy, 1991			Ratio of male to female literacy		Female literacy as % of male	
		Total	Rural	Urban	Total	Rural	Urban	1991	2001	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12
1.	Chennai	84.9	0	84.9	3	0	13	1.04	1.12	96.59	88.92
2.	Kancheepuram	55.2[1]	42.5[1]	70.8[1]	21.9[1]	25.8[1]	16.7[1]	1.40[1]	1.21	71.60[1]	82.78
3.	Thiruvallore	NA	NA	NA	NA	NA	NA	NA	1.24	NA	80.63
4.	Cuddalore	39.7[2]	34.3[2]	67.9[2]	25.9[2]	27.4[2]	17.9[2]	1.65[2]	1.36	60.52[2]	73.54
5.	Villupuram	NA	NA	NA	NA	NA	NA	NA	1.43	NA	69.93
6.	Vellore	48.6	41.6	63.3	24.3	27.3	18.4	1.50	1.30	66.67	76.85

(Contd...)

(Table A10.2 Contd.)

S.no.	Districts	Female Literacy, 1991 %			Gap in male and female literacy, 1991			Ratio of male to female literacy		Female literacy as % of male	
		Total	Rural	Urban	Total	Rural	Urban	1991	2001	1991	2001
1	2	3	4	5	6	7	8	9	10	11	12
7.	Tiruvannamalai	39.3	35.9	63.6	27.4	28.4	20.9	1.70	1.42	58.92	70.26
8.	Salem	41.5[3]	34.5[3]	58.3[3]	23.1[3]	24.6[3]	19.7[3]	1.56[3]	1.35	64.24[3]	73.90
9.	Namakkal	NA	NA	NA	NA	NA	NA	NA	1.37	NA	73.11
10.	Dharmapuri	34.2	31.2	62.8	23	23.6	16.7	1.67	1.40	59.79	71.35
11.	Erode	41.6	34.7	63.1	23.9	25.3	19.5	1.57	1.37	63.51	73.20
12.	Coimbatore	55.7	42.4	68.1	20.8	24	17.4	1.37	1.20	72.81	83.27
13.	Nilgiris	61.5	55.3	67.8	20.3	23.5	17	1.33	1.22	75.18	81.88
14.	Trichy	48.9[4]	40.3[4]	72.8[4]	24.5[4]	27.4[4]	15.8[4]	1.50[4]	1.22	66.62[4]	81.65
15.	Karur	NA	NA	NA	NA	NA	NA	NA	1.40	NA	71.25
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	1.43	NA	69.85
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	1.50	NA	66.77
18.	Thanjavur	54.8[5]	49.9[5]	70.8[5]	22.4[5]	24.3[5]	16.5[5]	1.41[5]	1.28	70.98[5]	78.35
19.	Tiruvarur	NA	NA	NA	NA	NA	NA	NA	1.25	NA	79.87
20.	Nagapattinam	NA	NA	NA	NA	NA	NA	NA	1.25	NA	79.84
21.	Pudukkotai	43.6	38.9	71.4	28.2	30	17.4	1.65	1.37	60.72	73.23
22.	Madurai	54.7	41.7	70.8	23	28	16.6	1.42	1.25	70.40	80.16
23.	Theni[6]	NA	NA	NA	NA	NA	NA	NA	1.34	NA	74.44
24.	Dindigul	43.9	37.3	68.5	25.3	27.3	17.3	1.58	1.35	63.44	73.86
25.	Ramanathapuram	48.7	43.1	69.1	26.1	28.2	17.8	1.54	1.31	65.11	76.60
26.	Virudhunagar	50.2	41.6	64.5	25.5	28.4	20.3	1.51	1.32	66.31	75.79
27.	Sivagangai	49.7	41.7	71.9	27.2	30.5	17.3	1.55	1.35	64.63	74.22
28.	Tirunelveli	54.2	49.3	64.9	23.3	24.2	20.8	1.43	1.25	69.94	79.75
29.	Thoothukudi	64.6	57.6	74.8	17.6	20.3	12.9	1.27	1.17	78.59	85.31
30.	Kanniyakumari	78.4	76.9	85.4	7.3	7.7	5.9	1.09	1.06	91.48	93.95
	STATE	51.3	42.8	69.6	22.5	24.4	16.5	1.44	1.28	69.51	78.40

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy Karur Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Thiruvarur and Nagapattinam.
[6]Figure relating to composite district Madurai and Theni.
Source: Director of Census, 1991, Chennai; Census, 2001(Provisional).

A10.3—Enrolment of Girls in Primary School and Married Women per 1000 Persons

S.no	Districts	Enrolment of girls in primary school as % of enrolment of boys 1998–99	Enrolment of girls in primary school as % of enrolment of boys 1997–98	Married women (between 15 and 44) per 1000 persons	
				1981	1991
1	2	3	4	5	6
1.	Chennai	128.35	93.21	348.7	363.9
2.	Kancheepuram	73.96	75.38	212.7[1]	356.3[1]
3.	Thiruvallore	72.68	93.75	NA	NA
4.	Cuddalore	94.36	86.57	356.3[2]	360.2[2]

(Contd...)

(Table A10.3 Contd.)

S.no	Districts	Enrolment of girls in primary school as % of enrolment of boys 1998–99	Enrolment of girls in primary school as % of enrolment of boys 1997–98	Married women (between 15 and 44) per 1000 persons 1981	1991
1	2	3	4	5	6
5.	Villupuram	94.54	78.07	NA	NA
6.	Vellore	105.12	99.39	342.9[3]	343.6
7.	Tiruvannamalai	95.33	77.40	NA	349.5
8.	Salem	70.53	79.91	369.3[4]	386.4[4]
9.	Namakkal	71.43	87.01	NA	NA
10.	Dharmapuri	91.87	89.59	351.7	375.2
11.	Erode	94.19	93.71	363.0	378.0
12.	Coimbatore	96.95	119.70	364.9	371.1
13.	Nilgiris	97.23	92.48	337.7	351.3
14.	Trichy	95.63	126.74	341.9[5]	356.7[5]
15.	Karur	98.60	70.29	NA	NA
16.	Perambalur	86.13[6]	67.96[6]	NA	NA
17.	Ariyalur	NA	NA	NA	NA
18.	Thanjavur	98.78	96.51	342.6[7]	350.3[7]
19.	Tiruvarur	97.12	122.05	NA	NA
20.	Nagapattinam	98.10	114.74	NA	NA
21.	Pudukkotai	96.31	79.70	329.3	333.8
22.	Madurai	95.02	76.10	333.2[8]	346.7[9]
23.	Theni	95.06	88.41	NA	NA
24.	Dindigul	93.80	68.96	NA	357.9
25.	Ramnad	91.81	130.47	321.9[10]	243.3
26.	Virudhunagar[8]	100.57	67.47	NA	466.1
27.	Sivagangai[10]	99.99	65.24	NA	324.8
28.	Tirunelveli	95.10	50.40	303.6[11]	314.7
29.	Thoothukudi	94.83	53.29	NA	302.9
30.	Kanniyakumari	94.18	125.63	274.8	287.3
	STATE	94.36	86.09	319.1	352.3

Notse: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram, Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Vellore and Tiruvannamalai.
[4]Figure relating to composite district Salem and Namakkal.
[5]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[6]Figure relating to composite district Perambalur and Ariyalur.
[7]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[8]Figure relating to composite district Madurai, Theni, Dindigul and Virudhunagar.
[9]Figure relating to composite district Madurai and Theni.
[10]Figure relating to composite district Ramanathapuram and Sivagangai.
[11]Figure relating to composite district Tirunelveli and Thoothukudi.
Source: School Education Department, Government of Tamil Nadu.

A10.4—VICTIMS OF MOLESTATION AND RAPE, 1991, 1996

S.no.	*Districts*	*Victims of Molestation and Rape*	
		1991	*1996*
1	*2*	*3*	*4*
1.	Chennai	26	11
2.	Kancheepuram	12	13
3.	Thiruvallur	14	17
4.	Cuddalore	20	21
5.	Villupuram	13	16
6.	Vellore	15	14
7.	Tiruvannamalai	14	11
8.	Salem	3[1]	18[1]
9.	Namakkal	NA	NA
10.	Dharmapuri	10	13
11.	Erode	5	12
12.	Coimbatore	15	8
13.	Nilgiris	1	3
14.	Trichy	14[2]	9[2]
15.	Karur	NA	NA
16.	Perambalur	NA	NA
17.	Ariyalur	NA	NA
18.	Thanjavur	8[3]	12
19.	Tiruvarur	NA	1
20.	Nagapattinam	6	22
21.	Pudukkotai	3	8
22.	Madurai	23[4]	22
23.	Theni	NA	4
24.	Dindigul	22	16
25.	Ramanathapuram	20	5
26.	Virudhunagar	11	17
27.	Sivagangai	6	7
28.	Tirunelveli	34	25
29.	Thoothukudi	17	12
30.	Kanniyakumari	4	10
	STATE	268	300

Notes: NA: Figure not available.
[1]Figure relating to composite district Salem and Namakkal.
[2]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[3]Figure relating to composite district Thanjavur and Tiruvarur.
[4]Figure relating to composite district Madurai and Theni.
Source: Director General of Police, Chennai.

A10.5—Married Males and Females (1981, 1991), percentage of Married Females of Ages 15–19 and Percentage of Widows in Female Population

S.no.	Districts	Married				% Married females of age 15–19 yrs		% of widows in female population	
		1981		1991					
		Male	Female	Male	Female	1981	1991	1981	1991
		(in lakhs)							
1	2	3	4	5	6	7	8	9	10
1.	Chennai	6.93	6.94	8.76	8.89	21.4	13.6	8.7	7.8
2.	Kancheepuram	7.66[1]	7.66[1]	10.28[1]	10.59[1]	27.5[1]	18.8[1]	10.2[1]	9.0[1]
3.	Thiruvallur	NA	NA	NA	NA	NA	NA	NA	NA
4.	Cuddalore	8.84[2]	9.19[2]	10.81[2]	11.49[2]	31.2[2]	23.4[2]	9.9[2]	0.0[2]
5.	Villupuram	NA	NA	NA	NA	NA	NA	NA	NA
6.	Vellore	9.25[3]	9.44[3]	6.64	6.81	34.3[3]	24.8	10.6[3]	9.8
7.	Tiruvannamalai	NA	NA	4.53	4.83	NA	25.3	NA	9.1
8.	Salem	7.92[4]	8.05[4]	9.58[4]	9.98[4]	30.5[4]	27.1[4]	9.8[4]	9.1[4]
9.	Namakkal	NA	NA	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	4.2	4.39	5.53	5.88	29.6	32.7	8.5	6.6
11.	Erode	4.87	4.89	5.86	6.11	20.6	18.6	9.8	9.3
12.	Coimbatore	6.71	6.73	8.48	8.69	16.0	14.8	9.3	8.7
13.	Nilgiris	1.32	1.28	1.61	1.61	19.4	10.5	7.8	7.6
14.	Trichy	7.71[5]	7.9[5]	9.39[5]	10.01[5]	21.0[5]	17.6[5]	11.5[5]	9.6[5]
15.	Karur	NA	NA	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur	8.37[6]	8.79[6]	9.79[6]	10.59[6]	19.6[6]	12.4[6]	10.8[6]	9.5[6]
19.	Tiruvarur	NA	NA	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	2.33	2.46	2.76	3.03	16.1	12.3	10.0	8.3
22.	Madurai	9.47[7]	9.65[7]	7.67[8]	7.91[8]	21.0[7]	17.1[8]	9.9[7]	9.2[8]
23.	Theni	NA	NA	NA	NA	NA	NA	NA	NA
24.	Dindigul	NA	NA	4.06	4.25	NA	17.6	NA	9.0
25.	Ramathapuram	6.81[9]	7.17[9]	2.47[9]	2.67	16.6[9]	11.7[9]	10.1[9]	7.3[9]
26.	Virudhunagar[7]	NA	NA	3.49	3.64	NA	16.3	NA	9.3
27.	Sivagangai[9]	NA	NA	2.33	2.6	NA	10.2	NA	7.8
28.	Tirunelveli	7.21[10]	7.54[10]	5.39	5.64	12.2[10]	9.3	10.6[10]	9.8
29.	Thoothukudi	NA	NA	3.05	3.22	NA	8.1	NA	9.7
30.	Kanniyakumari	2.65	2.68	3.26	3.36	4.9	3.3	8.4	7.8
	STATE	102.27	104.77	65.75	68.56	22.8	17.8	10.0	8.8

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Vellore and Tiruvannamalai.
[4]Figure relating to composite district Salem and Namakkal.
[5]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[6]Figure relating to composite district Thanjavur, Tiruvarur and Nagapattinam.
[7]Figure relating to composite district Madurai,Theni, Dindigul and Virudhunagar
[8]Figure relating to composite district Madurai and Theni
[9]Figure relating to composite district Ramnad and Sivagangai
[10]Figure relating to composite district Tirunelveli and Thoothukudi.
Source: Socio-cultural Tables, Census, 1981, 1991.

A11 Ageing Profile 1991

A11.1—ELDERLY POPULATION IN THOUSAND AND AS PERCENTAGE OF TOTAL POPULATION AND ELDERLY SEX RATIO

S.no.	Districts	Elderly Popn.(60+) (in '000)			Elderly Sex ratio No. of females per 1000 males			% of elderly population to the total population		
		Male	Female	Total	Rural	Urban	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11
1.	Chennai	129	128	257	–	1001	1001	3.35	3.32	6.67
2.	Kancheepuram[1]	157	152	309	963	985	973	3.36	3.23	6.59
3.	Thiruvallur	NA	NA	NA	NA	NA	NA	NA	NA	NA
4.	Cuddalore[2]	184	144	328	758	934	782	3.77	2.94	6.71
5.	Villupuram	NA	NA	NA	NA	NA	NA	NA	NA	NA
6.	Vellore	110	112	222	977	1102	1010	3.65	3.69	7.34
7.	Tiruvannamalai	84	73	157	849	1009	864	4.15	3.56	7.71
8.	Salem[3]	170	150	320	863	934	880	4.38	3.86	8.24
9.	Namakkal	NA	NA	NA	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	92	76	168	821	987	834	3.81	3.17	6.98
11.	Erode	115	102	217	867	950	882	4.96	4.38	9.34
12.	Coimbatore	149	134	283	884	912	896	4.25	3.83	8.08
13.	Nilgiris	20	18	38	880	1025	947	2.75	2.59	5.34
14.	Trichy[4]	165	152	317	889	1014	918	3.99	3.68	7.67
15.	Karur	NA	NA	NA	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur[5]	177	157	334	863	988	891	3.90	3.47	7.37
19.	Tiruvarur	NA	NA	NA	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	48	46	94	938	1024	950	3.63	3.50	7.13
22.	Madurai[6]	124	122	246	984	975	980	3.61	3.54	7.15
23.	Theni	NA	NA	NA	NA	NA	NA	NA	NA	NA
24.	Dindigul	70	60	130	859	886	864	3.95	3.41	7.36
25.	Ramnad	41	39	80	936	1004	949	3.64	3.46	7.10
26.	Virudhunagar	57	56	113	1037	928	996	3.66	3.61	7.27
27.	Sivagangai	44	44	88	987	1137	1022	4.03	4.11	8.14
28.	Tirunelveli	101	106	207	1039	1052	1043	4.06	4.27	8.33
29.	Thoothukudi	60	62	122	1020	1018	1019	4.15	4.21	8.36
30.	Kanniyakumari	67	65	132	948	1061	967	4.20	3.99	8.19
	STATE	2164	1998	4162	896	986	923	3.87	3.58	7.45

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Nagapattinam and Tiruvarur.
[6]Fi gure relating to composite district Madurai and Theni.
Sources: Census of India, 1991; 'Tamil Nadu State District Profile, 1991', December 1998.

A11.2—Proportion of Elderly by Residence and Sex

S.no.	Districts	Total			Rural			Urban		
		Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
1	2	3	4	5	6	7	8	9	10	11
1.	Chennai	6.7	6.5	7.0	–	–	–	6.7	6.5	7.0
2.	Kancheepuram[1]	6.6	6.6	6.7	7.0	7.0	6.9	6.2	6.1	6.4
3.	Thiruvallur	NA	NA	NA	NA	NA	NA	NA	NA	NA
4.	Cuddalore[2]	6.7	7.4	6.0	6.8	7.6	5.9	6.2	6.3	6.2
5.	Villupuram	NA	NA	NA	NA	NA	NA	NA	NA	NA
6.	Vellore	7.3	7.2	7.5	7.7	7.7	7.7	6.6	6.1	6.9
7.	Tiruvannamalai	7.7	8.2	7.2	7.8	8.4	7.2	6.8	6.7	6.9
8.	Salem[3]	8.2	8.4	8.0	8.7	9.1	8.4	6.9	7.0	6.8
9.	Namakkal	NA	NA	NA	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	6.9	7.3	6.5	7.1	7.5	6.5	6.0	5.8	6.1
11.	Erode	9.4	9.7	9.0	10.0	10.6	9.6	7.0	7.1	7.0
12.	Coimbatore	8.1	8.3	7.8	9.3	9.8	9.0	6.9	7.0	6.8
13.	Nilgiris	5.3	5.5	5.2	5.5	5.9	5.3	5.2	5.0	5.3
14.	Trichy[4]	7.7	7.9	7.4	7.9	8.3	7.4	6.9	6.8	7.1
15.	Karur	NA	NA	NA	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur[5]	7.4	7.7	7.0	7.3	7.8	6.8	7.6	7.6	7.5
19.	Tiruvarur	NA	NA	NA	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	7.1	7.3	6.9	7.1	7.3	6.8	7.2	7.1	7.3
22.	Madurai[6]	7.1	7.1	7.2	7.2	7.1	7.2	7.0	7.0	7.2
23.	Theni	NA	NA	NA	NA	NA	NA	NA	NA	NA
24.	Dindigul	7.4	7.8	6.9	7.5	8.0	7.1	6.7	7.0	6.4
25.	Ramnad	7.1	7.2	6.8	7.2	7.6	6.9	6.3	6.3	6.4
26.	Virudhunagar	7.3	7.2	7.3	7.4	7.3	7.5	6.9	7.2	6.8
27.	Sivagangai	8.2	8.2	8.1	8.5	8.7	8.2	7.3	6.8	7.8
28.	Tirunelveli	8.3	8.2	8.3	8.4	8.4	8.4	8.1	7.9	8.1
29.	Thoothukudi	8.4	8.5	8.2	9.3	9.5	9.0	7.1	7.2	7.2
30.	Kanniyakumari	8.2	8.4	8.1	8.2	8.4	8.1	8.2	8.1	8.5
	STATE	7.5	7.6	7.3	7.8	8.2	7.4	6.9	6.7	6.9

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Nagapattinam and Tiruvarur.
[6]Fi gure relating to composite district Madurai and Theni.
Sources: Census of India, 1991; 'Tamil Nadu State District Profile, 1991', December 1998.

A11.3—Dependency Ratio and Aged Work Participation Rate

S.no.	Districts	Dependency Ratio			Aged Work Participation Rate		
		Young	Old	Total	Total	Male	Female
1	2	3	4	5	6	7	8
1.	Chennai	491	103	539	16.81	30.19	3.45
2.	Kancheepuram[1]	528	109	637	32.21	49.31	14.62
3.	Thiruvallur	NA	NA	NA	NA	NA	NA
4.	Cuddalore[2]	570	113	684	44.28	62.60	20.85
5.	Villupuram	NA	NA	NA	NA	NA	NA
6.	Vellore	560	124	684	36.82	56.28	17.55
7.	Tiruvannamalai	603	134	737	45.55	63.31	25.01
8.	Salem[3]	450	131	580	45.14	60.95	27.17
9.	Namakkal	NA	NA	NA	NA	NA	NA
10.	Dharmapuri	606	120	726	45.10	61.77	25.09
11.	Erode	394	144	538	46.59	64.03	26.83
12.	Coimbatore	391	122	503	34.74	50.46	17.19
13.	Nilgiris	450	82	532	23.79	34.82	12.13
14.	Trichy[4]	477	123	600	44.07	60.36	26.32
15.	Karur	NA	NA	NA	NA	NA	NA
16.	Perambalur	NA	NA	NA	NA	NA	NA
17.	Ariyalur	NA	NA	NA	NA	NA	NA
18.	Thanjavur[5]	495	119	614	43.22	65.08	18.69
19.	Tiruvarur	NA	NA	NA	NA	NA	NA
20.	Nagapattinam	NA	NA	NA	NA	NA	NA
21.	Pudukkotai	548	118	666	41.53	60.73	21.31
22.	Madurai[6]	509	116	625	39.35	54.82	23.56
23.	Theni	NA	NA	NA	NA	NA	NA
24.	Dindigul	476	118	594	46.13	60.81	29.13
25.	Ramnad	576	120	696	46.43	62.8	29.19
26.	Virudhunagar	520	119	639	48.56	61.4	35.67
27.	Sivagangai	524	135	656	46.60	64.40	29.18
28.	Tirunelveli	530	139	669	42.41	58.18	27.29
29.	Thoothukudi	537	141	678	41.84	58.63	25.38
30.	Kanniyakumari	491	134	625	29.34	50.82	7.11
	STATE	501	121	623	39.89	57.05	21.31

Notes: NA: Figure not available.
[1]Figure relating to composite district Kancheepuram and Thiruvallur.
[2]Figure relating to composite district Cuddalore and Villupuram.
[3]Figure relating to composite district Salem and Namakkal.
[4]Figure relating to composite district Trichy, Karur, Perambalur and Ariyalur.
[5]Figure relating to composite district Thanjavur, Nagapattinam and Tiruvarur.
[6]Figure relating to composite district Madurai and Theni.
Sources: Census of India, 1991; 'Tamil Nadu State District Profile, 1991', December 1998.

A11.4—Old Age Pension Schemes in Tamil Nadu, OAP, DALP, DPHP, DWP and DDWP
(No. of 60+ Elderly OAP Beneficiaries in Tamil Nadu)

(1999–2000)

S.no.	Districts	OAP* (Normal)			DALP*			DPHP*		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11
1.	Chennai	12,467	30,763	43,230	5	4	9	78	47	125
2.	Kancheepuram	8085	10,533	18,618	1636	1832	3468	234	145	379
3.	Thiruvallore	4895	10,151	15,046	1225	1377	2602	158	125	283
4.	Cuddalore	5638	7675	13,313	1296	1828	3124	118	114	232
5.	Villupuram	9662	6044	15,706	2885	2023	4908	0	0	0
6.	Vellore	8960	14,999	23,959	3742	6882	10624	116	71	187
7.	Tiruvannamalai	9118	13,494	22,612	2987	4319	7306	54	75	129
8.	Salem	8684	15,669	24,353	1418	2009	3427	228	132	360
9.	Namakkal	2817	8442	11,259	557	1098	1655	0	0	0
10.	Dharmapuri	9093	9188	18,281	3664	3482	7146	74	88	162
11.	Erode	4124	6771	10,895	855	1331	2186	92	98	190
12.	Coimbatore	4633	8490	13,123	731	1118	1849	81	73	154
13.	Nilgiris	912	1116	2028	242	474	716	28	31	59
14.	Trichy	4899	7182	12,081	2272	3570	5842	21	6	27
15.	Karur	2937	2405	5342	1201	982	2183	26	22	48
16.	Perambalur[1]	3157	6516	9673	1268	2237	3505	50	47	97
17.	Ariyalur	NA	NA	NA	NA	NA	NA	NA	NA	NA
18.	Thanjavur	9389	8876	18,265	920	575	1495	52	67	119
19.	Tiruvarur	4326	4225	8551	712	633	1345	20	12	32
20.	Nagapattinam	5056	2723	7779	957	262	1219	0	0	0
21.	Pudukkotai	3843	6032	9875	548	1067	1615	15	26	41
22.	Madurai	5162	17,839	23,001	632	1787	2419	48	36	84
23.	Theni	1766	3835	5601	190	383	573	4	6	10
24.	Dindigul	2215	7368	9583	423	1194	1617	28	20	48
25.	Ramanathapuram	2715	4812	7527	752	1108	1860	30	30	60
26.	Virudhunagar	3382	5833	9215	735	1579	2314	30	8	38
27.	Sivagangai	2859	5796	8655	561	526	1087	44	87	131
28.	Tirunelveli	4994	9406	14,400	716	644	1360	240	155	395
29.	Toothukudi	2871	6320	9191	459	2080	2539	0	0	0
30.	Kanniyakumari	1729	2801	4530	241	497	738	33	39	72
	STATE	150,388	245,304	395,692	33,830	46,901	80,731	1902	1560	3462

(Contd...)

(Table A11.4 Contd.)

(1999–2000)

S.no.	*Districts*	*DWP**	*DDWP**	*Total Elderly Beneficiaries*		
				Male	*Female*	*Total*
1	*2*	*12*	*13*	*14*	*15*	*16*
1.	Chennai	1301	23	12,550	32,138	44,688
2.	Kancheepuram	159	0	9955	12,669	22,624
3.	Thiruvallore	467	106	6278	12,226	18,504
4.	Cuddalore	754	19	7052	10,390	17,442
5.	Villupuram	0	0	12,547	8067	20,614
6.	Vellore	3599	96	12,818	25,647	38,465
7.	Tiruvannamalai	683	1856	12,159	20,427	32,586
8.	Salem	1598	255	10,330	19,663	29,993
9.	Namakkal	27	0	3374	9567	12,941
10.	Dharmapuri	425	318	12,831	13,501	26,332
11.	Erode	784	571	5071	9555	14,626
12.	Coimbatore	616	203	5445	10,500	15,945
13.	Nilgiris	118	54	1182	1793	2975
14.	Trichy	511	23	7192	11,292	18,484
15.	Karur	559	170	4164	4138	8302
16.	Perambalur[1]	352	56	4475	9208	13,683
17.	Ariyalur	NA	NA	NA	NA	NA
18.	Thanjavur	841	93	10,361	10,452	20,813
19.	Tiruvarur	487	18	5058	5375	10,433
20.	Nagapattinam	0	0	6013	2985	8998
21.	Pudukkotai	0	19	4406	7144	11,550
22.	Madurai	6103	350	5842	26,115	31,957
23.	Theni	157	547	1960	4928	6888
24.	Dindigul	481	0	2666	9063	11,729
25.	Ramanathapuram	470	63	3497	6483	9980
26.	Virudhunagar	134	53	4147	7607	11,754
27.	Sivagangai	203	0	3464	6612	10,076
28.	Tirunelveli	506	175	5950	10,886	16,836
29.	Toothukudi	0	0	3330	8400	11,730
30.	Kanniyakumari	511	66	2003	3914	5917
	STATE	21846	5134	186,120	320,745	506,865

Notes: NA: Figure not available.
*OAP—Old Age Pensioners.
DALP—Destitute Agricultural Labourer Pensioners.
DPHP—Destitute Physically Handicapped Pensioners.
DWP—Destitute Widows Pensioners.
DDWP—Destitute Deserted Wives Pensioners.
[1]Figure relating to composite district Perambalur and Ariyalur.
Source: District Collectors of Tamil Nadu.

Technical Notes

A. Computing Human Development Index

The methodology followed by the State for computing the Human Development Index for the districts is broadly the same as the one adopted by UNDP. The HDI is a composite index, covering the following three dimensions of living standards:

Dimensions	*Variables*
1. Attainment in longevity	Life expectancy at birth
2. Educational attainment	a) Adult literacy rate
	b) Combined enrolment ratio (primary, secondary and tertiary)
3. Command over resources	Real per capita income

Longevity as an indicator of human development captures several aspects of welfare, because of its close correlation with nutrition, health and other biological and social achievements. Educational attainment is measured by a combination of adult literacy rate with two-thirds weight and combined primary, secondary and tertiary enrolment ratio with one-third weight. The standard of living is measured by real GDP per capita expressed in purchasing power parity dollars (PPP$). The minimum and maximum values fixed for the construction of the index by UNDP are as follows:

		Minimum	*Maximum*
• Life expectancy at birth	:	25 years	85 years
• Adult literacy rate	:	0 per cent	100 per cent
• Combined gross enrolment ratio	:	0 per cent	100 per cent
• Real GDP per capita (PPP$)	:	$ 100	$ 40,000

In this paper, we attempt to construct the HDI for the districts in Tamil Nadu to evaluate the outcome of the development process. The sources of data at the district level for computing the values of index are given below.

Data Sources

(i) The Life expectancy at birth for the year 1997 for all the 29 Districts was based on the Vital Events Survey conducted by DANIDA—Health Project.

(ii) Combined gross enrolment ratio for primary, middle, high and higher secondary schools as adjusted by

the school age population has been worked out by the Department of Economics and Statistics using the data furnished by Education Department.

Literacy rate according to the 1991 Census is adopted for calculating educational attainment.

The Educational attainment is measured by a combination of literacy (2001 Census) (two-thirds weight) and combined GER for primary, middle, high and higher secondary levels adjusted to the school age population (one-third weight) (1998–9).

(iii) The district-wise income estimates (new series at 1993–4 prices) for the year 1998–9, estimated by the Department of Economics and Statistics have been used for computing income index.

Methodology

The methodology for computing the HDI is as follows.

For constructing the index, minimum and maximum values have been fixed for each of the indicators as discussed below.

The index for each component of the HDI, is defined as:

$$\text{Index} = \frac{\text{Actual } X_i \text{ value} - \text{minimum } X_i \text{value}}{\text{Maximum } X_i \text{value} - \text{minimum } X_i \text{value}}$$

The HDR value of the jth district (I_j) for the ith variable is defined as the average of these variables.

The HDR assigns equal weight to each of the three dimensions included in the development index, as each component is equally important for a meaningful evaluation of an individual's well-being.

$I_j = \hat{A}I_{ij}/3$ $\quad$ i = 1, 2, 3

j = 1 to 29 districts

Minimum and Maximum Values

To construct the HDI for the districts in Tamil Nadu, we have established the following minimum and maximum values for each of these indicators.

- Life Expectancy at Birth : 25 years and 85 years
- Literacy rate : 0 per cent and 100 per cent
- Combined gross enrolment ratio : 0 per cent and 100 per cent

$$\text{Life Expectancy Index} = \frac{\text{Actual value} - 25}{85 - 25}$$

Education Index = (2 ¥ literacy rate index + 1 ¥ combined enrolment ratio index)/3

Determination of Income Band

The construction of the income index is a little more complex. Over the years, the HDR has used a particular formula, known as Atkin's formula. The basic approach in the treatment of income has been driven by the fact that achieving a respectable level of human development does not require unlimited income. To reflect this, income has been discounted in calculating the HDI by using the formula:

$$W(y) = y^* + 2(y^{*1/2}) + 3(y^{*1/3}) + 4(y^{*1/4}) + 5(y^{*1/5}) + 6(y^{*1/6}) + 7[(40{,}000 - 6y^*)^{1/7}]$$

The main problem with this formula is that it discounts the income above the threshold level very heavily, penalizing countries in which income exceeds the threshold level. In many cases, income loses its relevance as a proxy for all dimensions of human development other than a long and healthy life and knowledge. In HDR 1999, a thorough review of the treatment of income in the HDI was done, based on the work of Anand and Sen. This refinement in the treatment of income attempts to rectify this problem by putting the methodology on a more solid analytical foundation. The income is treated by using the following formula.

$$W(y) = \frac{\log y - \log y_{min}}{\log y_{min} - \log y_{max}}$$

The advantages of using the formula are: (i) it does not discount income as severely as the formula used earlier; (ii) it discounts all income, not just the income above a certain level (threshold level); and (iii) Middle income countries are not penalized unduly as income rises further in these countries and they will continue to receive recognition for their increasing income as a potential means for further development.

For the computation of the income index for the districts, per capita district GDP has been converted to its PPP$ equivalent by taking the ratio of per capita district GDP to that of the country in rupees and multiplying this by the per capita GDP for the country in PPP$ ($ 1670 for 1997).

Per capita GDP for Tamil Nadu (1996–7) constant prices = Rs 11,320
(Directorate of Economics and Statistics)
Per capita GDP for India (1996–7) at constant prices = Rs 9376.90 (GOI)
Per capita GDP for India (1997) in PPP$ = $ 1670 (HDR 1999)

$$\text{Real District GDP per capita in PPP\$} = \frac{\text{District PC GDP in Rs}}{\text{PC GDP of India in RS}} \times \text{Per capita GDP for India in PPP\$}$$

$$\text{Then Income Index will be} = \frac{\text{Log (Real District GDP)} - \text{Log 100}}{\text{Log 40,000} - \text{Log 100}}$$

Illustration of the HDI Methodology:

We choose Tamil Nadu to illustrate the steps for calculating the HDI:

Life expectancy index

$$\frac{66.74 - 25}{85 - 25} = 0.696$$

Literacy index

$$\frac{73.47 - 0}{100 - 0} = 0.735$$

Combined gross enrolment ratio

$$\frac{83.15 - 0}{100 - 0} = 0.832$$

Education index

= 2/3 (literacy index) + 1/3 (combined gross enrolment ratio)
= 2/3 (0.735) + 1/3 (0.832) = 0.767

Adjusted real GDP Per capita (PPP$) index

$$\frac{\text{Log 2097.09} - \text{Log 100}}{\text{Log 40,000} - \text{Log 100}} = 0.508$$

Human Development Index for Tamil Nadu = (0.696 + 0.767 + 0.508)/3
= 1.971/3 = 0.657

B. Computing Gender–Related Development Index

The GDI uses the same variables as the HDI but adjusts the average achievement of each district in life expectancy, educational attainment and income in accordance with disparities in the achievement between women and men. In other words, GDI is simply HDI discounted or adjusted downwards for gender inequality. The discounting is

done with respect to aversion to gender inequality. Moderate gender aversion is represented in the index by the epsilon (e) which takes the value of 2 in the construction of the GDI. The epsilon is the harmonic mean of male and female values.

Computation of the GDI is based on computation of the equally distributed index of life expectancy at birth, the equally distributed index of educational attainment and the equally distributed index of income. The GDI is the average of these three equally distributed indices and takes a value between 0 and 1.

The UNDP has selected maximum and minimum values for life expectancy, taking into account the fact that women tend to live longer than men. For women, the maximum value is taken as 87.5 years and the minimum value 27.5 years, for men the corresponding values are 82.5 years and 22.5 years. The same maximum and minimum values are used in computing the GDI at the district level.

Variables for the educational attainment index include the combined literacy rate with two-thirds weight and the combined enrolment ratio (primary, middle, high and higher secondary) with one-third weight as in the case of the HDI. Each of these indices has a maximum value of 100 and a minimum value of 0.

Calculating the index for income is fairly complex. For computing the income index, female and male shares in earned income are arrived at from data about the ratio of the average female wage to the average male wage and the female and male percentages of economically active population above the age of 15. Before the income index is calculated, the average adjusted real GDP percapita of a district is discounted on the basis of disparities in female and male shares of earned income in proportion to female and male shares of the population.

In this paper, we attempt to construct the GDI for the districts in Tamil Nadu to evaluate the average achievement of each district in accordance with disparities in achievement between women and men. The sources of data at the district level for computing the values of index are the same as those used in computing HDI.

Illustration of the GDI Methodology

Computation of the GDI for Tamil Nadu is shown below. The value of inequality aversion e is taken as 2.

Percentage share of total population

	Female 49.263	Male 50.737	*Source*: Census, 1991

Life expectancy at birth (years)

	Female 70.54	Male 66.38	*Source*: Danida (1997)

Combined literacy rate (%)

	Female 51.3	Male 73.8	*Source*: Census, 1991

Combined gross enrolment ratio

	Female 80.60	Male 85.61	*Source*: Education Department, 1998–9

Share in economically active population

	Female 39.2	Male 60.8	*Source*: NSSO (50th round)

Agricultural wage rates

	Female Rs 33.55	Male Rs 57.22	*Source*: DES (1998–9)

STEP ONE

Computing the equally distributed life expectancy index

Female (70.54–27.50)/(87.50–27.50) = 0.717

Male (66.38–22.50)/(82.50–22.50) = 0.731

The equally distributed life expectancy index:

[(Female population share) x (Female life expectancy index)$^{1-e}$ +
(Male population share) x (Male life expectancy index) $^{1-e}$]$^{1-e}$
= [0.4926 $(0.717)^{-1}$ + 0.5074 $(0.731)^{-1}$]$^{-1}$
= **0.724**

STEP TWO

Computing the equally distributed educational attainment index

Combined literacy index

Female $\frac{(64.55-0)}{(100-0)} = 0.646$

Male $\frac{82.33-0}{100-0} = 0.823$

Combined gross enrolment ratio

Female $\frac{80.60-0}{100-0} = 0.806$

Male $\frac{85.61-0}{100-0} = 0.856$

Educational attainment index

= 2/3 (Combined literacy index) + 1/3 (Combined enrolment index)
Female = 2/3 (0.646) + 1/3 (0.806) = 0.699
Male = 2/3 (0.823) + 1/3 (0.856) = 0.834

The equally distributed educational attainment index

= [(female population share) x (female educational attainment index)$^{1-e}$ +
(male population share) x (male educational attainment index)$^{1-e}$]$^{1-e}$
= [0.4926 $(0.699)^{-1}$ + 0.5074 $(0.834)^{-1}$]$^{-1}$
= **0.762**

STEP THREE

Computing the equally distributed income index:

Calculating the index for income is fairly complex. Values of per capita GDP (PPP$) for women and men are calculated from the female share (s_f) and male share (s_m) of earned income. These shares, in turn, are estimated from the ratio of the female wage (w_f) to the male wage (w_m) and the percentage shares of women (ea_f) and men (ea_m) in the economically active population. When the data on the wage ratio are not available, a value of 75 per cent is used. The estimates of female and male per capita income (PPP$) are treated in the same way as income is treated in the HDI and then used to compute the equally distributed income index.

Percentage shares of economically active population:

Female 39.2 Male 60.8

United Nations Development Programme adopts the ratio of female non-agricultural wage to male non-agricultural wage. As Tamil Nadu is an agrarian State with two-thirds of the population depending on the agricultural sector, here we use the ratio of female agricultural wage to male agricultural wage.

Female agricultural wage = Rs 33.55
Male agricultural wage = Rs 57.22

Ratio of female agricultural wage to male agricultural wage = w_f/w_m = 0.586
Percentage share of women in economically active population (ea_f) = 39.2
Percentage share of men in economically active population (ea_m) = 60.8

a. Computing proportional income share

$$\text{Female share of wage bill } (s_f) = \frac{(W_f/W_m) ¥ ea_f}{[W_f/W_m) ¥ ea_f] + ea_m}$$
$$= \frac{0.586 ¥ 39.2}{(0.586 ¥ 39.2) + 60.8}$$
$$= 22.971/83.771 = 0.274$$

Total GDP (PPP$) of a district/State (y) has to be decided between women and men according to s_f, total GDP (PPP$) share of income to women is given by (s_f x y) and the total GDP (PPP$) to men by [y–($s_f$ x y)].

Per capita GDP (PPP$) of women is $y_f = s_f$ x Y/N_f, where N_f is the total female population.
y_f = (0.274 x 1302526.67)/308.42 = 356892.31/308.42 = 1157.16
Per capita GDP (PPP$) of men is $y_m = [Y–(s_f \text{ x } Y)]/N_m$, where N_m is the total male population.
y_m = (1302526.67–356892.31)/312.69 = 945634.36/312.69 = 3024.19

Treating income the same way as in the construction of HDI, the adjusted income for women W (y_f) is given by:

$$W(y_f) = \frac{\log \gamma_f - \log \gamma_{min}}{\log \gamma_{min} - \log \gamma_{max}}$$
$$= \frac{\text{Log } 1157.16 - \text{Log } 100}{\text{Log } 40,000 - \text{Log } 100}$$
$$= (3.063–2)/(4.602–2) = 1.063/2.602$$
$$= 0.409$$

The adjusted income for men W (y_m) is given by:

$$W(y_m) = \frac{\log \gamma_m - \log \gamma_{min}}{\log \gamma_{min} - \log \gamma_{max}}$$
$$= \frac{\log 3024.19 - \log 100}{\log 40,000 - \log 100}$$
$$= (3.481–2)/(4.602–2) = 1.481/2.602$$
$$= 0.569$$

b. *Computing the equally distributed income index:*

For computing the equally distributed income index, the weighing parameter ($e = 2$) is applied.

[(Female population share) x (Adjusted Female per capita GDP in PPP$) $^{1-e}$ +
(Male population share) x (Adjusted Male per capita GDP in PPP$)$^{1-e}]^{1/1-e}$
$= [0.493 \text{ x } (0.409)^{-1} + 0.507 \text{ x } (0.569)^{-1}]^{-1}$
$= [(0.493 \text{ x } 2.445) + (0.507 \text{ x } 1.757)]^{-1}$
$= (1.205 + 0.891)^{-1} = (2.096)^{-1} =$ **0.477**

STEP FOUR

The GDI

= 1/3 (Equally distributed LEB + Equally distributed educational attainment index + Equally distributed income index)
= 1/3 (0.724 + 0.762 + 0.477)
= **0.654**

C. Estimates of State/District Domestic Product—Methodology

After the publication of the National Income Committee reports in the early 1950s, State income estimation received greater attention. In l957, the Central Statistical Organization (CSO) set up a working group of State income to undertake technical examination of the estimates of State income prepared by State Statistical Agencies from time to time, to make recommendations on the data gaps which could be filled to improve those estimates and to generally provide a standard set of concepts, definitions and methodology for the estimation of SDP. The development of State income statistics has been guided mainly by the deliberations of this group. The group examined the estimates prepared by most of the States and made detailed suggestions for improving the estimates and achieving inter-state comparability. The group laid down standard methodology for estimation of income in different sectors.

The third important development in the estimation of national/state income was the appointment of a Committee of Regional Accounts (RAC) by the Government of India in l972. This committee was expected to suggest the levels at which accounts should be prepared—State, district or other regions—and to suggest measures for building up of such accounts for the region based on data availability. In the final report submitted by the committee in September such as l976, the RAC felt that while an accounting framework can be recommended for the State, there was little point in recommending it for regions smaller than States such as districts. Only the disaggregation of domestic product for the commodity producing sectors was suggested for areas smaller than States: otherwise for the purpose of recommended accounts, the region has been considered co-terminus with the geographical boundary of a State. The RAC's recommendations giving broad guidelines for preparation of SDP at current and constant prices received greater attention as they were considered detailed and sufficient. However, action on estimating district domestic product was not pursued in a sustained manner by the States.

What is Domestic Product?

Domestic Product is an unduplicated total monetary values of products generated in various kinds of economic activities during a given period, that is, it is the gross value of output minus intermediate inputs. It is a comprehensive concept in that it covers all goods and services produced by the residents, irrespective of whether they are marketed or not, that is, exchanged for money or bartered or produced for own use. Imputed values of own-use products and services such as rentals of owner occupied buildings are included. Gross domestic product is thus essentially a product concept to measure the production of goods and services, but in common parlance it is also accepted as an income concept because it is equivalent to value added, which is the summation of incomes of factors of production, land, labour, capital and entrepreneurship, that help to produce output.

Current and Constant Prices

With inflation as a common feature in the modern economy, the increase in value of any product or income measure can be to that extent a money illusion. In order to determine the real worth of the purchasing power of income, any income (or product) measure has to be based on unchanged prices of commodities and services from a base period and thus arrive at the measure in real terms. There are norms for the choice of the base period such as that it be a normal year and that it should not be a remote year which fails to capture the structural changes occurring in the economy.

Gross domestic product is measured by economic activity or by sectors at current and constant prices. The estimates of value added are arrived at separately for commodity producing sectors and other sub sectors and sectors, at the prices prevailing in the year of estimation as well as those prevailing in the base year.

Estimation Procedure

Gross domestic product is estimated by economic activity by sectors as per International Standard Industrial Classification (ISIC). A complex set of methods is employed by the CSO to measure GDP generated in each sector.

Both production and income approaches are adopted, the criteria being essentially the nature of data availablity. In certain cases like labour intensive kutcha construction, the expenditure method is adopted. The sectors which have been amenable to the production approach are Agriculture and Allied activities, Forestry and Logging, Fishing, Mining and Quarrying and Registered Manufacturing. Income method or some variant of it is adopted in respect of the following sectors: unregistered manufacturing; electricity, gas and water supply; transport, storage and communication; trade, hotels and restaurants; real estates, dwelling and other business services; public administration; and defence and other services. The procedure for estimation of domestic product for different sectors is briefly explained below:

[CFC—Consumption of Fixed Capital
FISIM—Financial Intermediator Services Indirectly Measured
GVA—Gross value Added
GVO—Gross Value of Output
ASI—Annual Survey of Industries]

1. Agriculture and Allied Activities:

District-wise production and prices are available for major commodities. For some of the commodities CFC, FISIM and inputs for which State level estimates alone are available, the value is allocated to districts on the basis of suitable indicators, viz., area, irrigated area and GVO of the district.

2. Forestry and Logging:

State estimates are allocated to districts on the basis of district-wise area under forests. Regarding fuelwood, district-wise rural and urban population is used for estimation.

3. Fishing:

District-wise production and prices of marine and inland fish are used in the estimates. Inputs, FISIM and CFC at State level is allocated to the district on the basis of GVO.

4. Mining and Quarrying:

District-wise mineral production and value are used in the district income estimates of this Sector. Input rates available at State level are used at District level also. FISIM, CFC at State level is distributed among the districts on the basis of district-wise GVA.

5. Manufacturing Registered:

District-wise GVA available for the district (ASI), FISIM and CFC are distributed among the districts on the basis of GVA of the districts.

6. Manufacturing Unregistered:

State income is allocated to the districts on the basis of workforce. FISIM and CFC at State level are distributed among the districts on the basis of district GVA.

7. Electricity, Gas and Water Supply:

The estimated income of the State is apportioned to districts on the basis of workforce. State level FISIM and CFC are apportioned to districts on the basis of GVA.

8. Construction:

State income estimates are allocated to the districts with reference to the workforce. FISIM and CFC of the State are allocated on the basis of GVA of the district.

9. Trade, Hotels and Restaurants:

Income at State level is allocated to the districts on the basis of workforce and gross trading income. FISIM and CFC relating to the State is allocated to districts on the basis of district-wise GVA.

10. Transport by Other Means:

State level estimates are allocated to districts on the basis of district-wise workforce, district-wise number of vehicles and Gross Trading Income (GTI). FISIM and CFC are allocated to districts on the basis of GVA (districts).

11. Storage:

State GVA is allocated to the districts on the basis of district workforce. FISIM and CFC are distributed to districts on the basis of district-wise GVA.

12. Real Estate, Ownership of Dwellings and Business Services.:

Estimated income from real estate and business service are allocated to the districts on the basis of district-wise workforce. Estimated income from dwellings is allocated to districts on the basis of district-wise number of residential buildings. FISIM and CFC are apportioned to the districts with reference to district-wise GVA.

13. Railways, Communication and Banking and Insurance:

State income is allocated to the districts on the basis of district-wise workforce.

14. Public Administration:

State level estimates are alocated to the districts on the basis of workforce.

15. Other Services:

State level estimates are allocated to the districts with reference to workforce. FISIM and CFC are apportioned to districts on the basis of district GVA.

Limitations

The District income estimates are mostly derived from the State income estimates for different sectors. In disaggregating and allocating the sectoral income of the State to different districts, basic district level data and norms in the case of yield of crops and prices have been adopted where such data are available. In the case of agricultural sector for certain crops, district-wise yield and prices are not available. In such cases district-wise value of output of these crops are worked by allocating the State level value of output on the basis of district-wise area under the crop.

In the case of manufacturing sector (registered) the district-wise income is estimated on the basis of ASI and the income originating method is adopted. Therefore, wherever there is concentration of manufacturing activity as in the case of Thoothukudi and Hosur in Dharmapuri district, the entire value added by manufacture will be allocated to those districts. In the same way, in the primary sector mining activities in Neyveli, the entire income will be allocated to Cuddalore district. The entire marine fish activities will be allocated to the coastal districts on the basis of fish landing/the length of coastline of the district. In the tertiary sector, where the income approach is adopted, the State income estimates are allocated to the district with reference to the workforce in each district. The average earning of workforce in some industry is likely to vary from district to district, as in the case of trade, hotel and transport. The basic data on workforce and average earnings, on the basis of several surveys, were adopted in estimating the income of these sectors.

In the case of supra regional sectors like railways, banking services, etc., the State income estimates themselves incorporate the allocation made by the CSO and these estimates are in turn allocated to different districts based on indicators such as workforce.

The district income estimates for l7 sectors and sub-sectors are built through an elaborate process, adopting norms such as yield area, prices, average earnings per worker in different sectors and workforce in different sectors. The deficiencies in such indicators will get reflected on the estimates of the district income also.

In building up district income, the inflows into the district and outflows from the districts are not accounted. Substantial quantity of products of a district, in the case of number of sectors, goes out, for example paddy from

delta districts, manufactured goods from Chennai, Kancheepuram and Tuticorin. Similarly, inflow into the districts of both commodities and remittances is also not accounted for. For example, in a district where there is considerable amount of remittances from persons working in other parts of India and abroad may not be reflected in the district income. It is often said that if the remittances of NRIs are taken into account, the per capita income of Kerala will be substantially higher than the State income estimates of the Statistics Department.

Sources: 1. Department of Economics and Statistics, Government of Tamil Nadu.

2. National Account Statistics of India, 1950–1 to 1996–7.

3. Economic and Political Weekly, Research Foundation, 1998.

D. Estimation of Housing Shortages in Tamil Nadu—2001 and 2011

The housing shortages for Tamil Nadu in 2001 and 2011 are estimated taking into account two major components under the housing sector viz. (i) minimum housing need and (ii) replacement demand.

2. The minimum housing need is arrived at by estimating the total number of households and total number of housing units in the year 2001 and 2011. The number of households, both rural and urban, are estimated separately based on the population projected for 2001 and 2011, by the Registrar General of India—Expert Group. The household size norms used for estimating the households in 2001 is presumed size of 4.2 for rural and 4.4 for urban and for the year 2011 the presumed size of 4.0 for rural and 4.2 for urban. The household size norm was presumed keeping in view the declining trend found between 1981 (Rural 4.61; Urban 4.92) and 1991 (Rural 4.36; Urban 4.64) Census household size norms. The district-wise households for 2001 and 2011 are estimated from the district-wise projected population arrived at by using the percentage of population in each district in 1991 Census data and the above said household size norms for both rural and urban areas. Similarly, the housing units for the year 2001 and 2011 are estimated by the Regression method using the population and housing unit census figures available from 1961 to 1991. The district-wise housing units for 2001 and 2011 are estimated by de-segregation, using the percentage of housing units in each district in the 1991 Census data for both rural and urban respectively.

3. To arrive at the replacement demand, it is assumed that all the houses of kutcha type in bad condition, in both rural and urban areas, are obsolete and need to be replaced. Housing units estimated for 2001 and 2011 by the above said regression method are subsequently apportioned to each district based on the percentage of housing units in each district by 1991 Census data, for both rural and urban respectively. After the estimation of district-wise houses, the number of kutcha houses and number of kutcha houses in bad condition that is those which are to be replaced, for both rural and urban are estimated using housing types norms and the proportion (percentage) of bad condition houses under each type of structure found in the NSS 49th Round Report (see table below).

Typology	*% of households by type of structure*		*Proportion (%) of Structure in bad condition*	
1	*2*	*3*	*4*	*5*
	Rural	*Urban*	*Rural*	*Urban*
Pucca	35.16	69.25	3.18	2.22
Semi-pucca	23.50	17.22	12.95	12.39
Kutcha	41.33	13.53	29.94	43.20
All			16.54	9.51

Source: NSS, 49th Round, 1993.

The number of houses in bad condition estimated following the above procedure is taken for replacement demand.

4. The minimum housing demand and replacement demand, estimated as above are added together to estimate the housing shortage in Tamil Nadu as a whole as well as separately for districts.

TABLE AH1—HOUSING SHORTAGE IN TAMIL NADU FOR THE YEARS 2001 AND 2011
(District-wise Estimates)

(in thousands)

S. No.	Districts	2001			2011		
		Minimum housing need estimated	*Replacement demand estimated*	*Housing shortage estimated (3+4)*	*Minimum housing need estimated*	*Replacement demand estimated*	*Housing shortage estimated (6+7)*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1	Chennai						
	Total	96	56	152	138	68	206
	Rural	0	0	0	0	0	0
	Urban	96	56	152	138	68	206
2	Kancheepuram						
	Total	120	104	224	176	113	289
	Rural	68	73	141	101	76	177
	Urban	52	31	83	75	37	112
3	Cuddalore						
	Total	147	126	273	211	133	344
	Rural	119	115	234	173	120	293
	Urban	28	11	39	38	13	51
4	Vellore						
	Total	137	68	205	184	73	257
	Rural	70	56	126	98	59	157
	Urban	67	12	79	86	14	100
5	Tiruvannamalai						
	Total	66	53	119	94	56	150
	Rural	51	50	101	75	52	127
	Urban	15	3	18	19	4	23
6	Salem						
	Total	–67	113	46	–32	121	89
	Rural	–56	94	38	–25	98	73
	Urban	–11	19	8	–7	23	16
7	Dharmapuri						
	Total	76	64	140	108	67	175
	Rural	73	60	133	103	63	166
	Urban	3	4	7	5	4	9
8	Erode						
	Total	–78	73	–5	–61	77	16
	Rural	–61	63	2	–43	65	22
	Urban	–17	10	–7	–18	12	–6
9	Coimbatore						
	Total	–22	85	63	7	93	100
	Rural	–20	55	35	–1	57	56
	Urban	–2	30	28	8	36	44

(Contd...)

(Table AH1 Contd.)

S. No.	Districts	2001			2011		
		Minimum housing need estimated	Replacement demand estimated	Housing shortage estimated (3+4)	Minimum housing need estimated	Replacement demand estimated	Housing shortage estimated (6+7)
1	2	3	4	5	6	7	8
10	Nilgiris						
	Total	7	17	24	14	18	32
	Rural	5	11	16	10	11	21
	Urban	2	6	8	4	7	11
11	Trichy						
	Total	19	112	131	64	120	184
	Rural	7	95	102	44	99	143
	Urban	12	17	29	20	21	41
12	Thanjavur						
	Total	94	118	212	150	125	275
	Rural	59	103	162	103	107	210
	Urban	35	15	50	47	18	65
13	Pudukottai						
	Total	50	33	83	67	35	102
	Rural	44	30	74	59	32	91
	Urban	6	3	9	8	3	11
14	Madurai						
	Total	57	81	138	99	88	187
	Rural	10	59	69	33	61	94
	Urban	47	22	69	66	27	93
15	Dindigul						
	Total	1	50	51	21	53	74
	Rural	–2	44	42	15	46	61
	Urban	3	6	9	6	7	13
16	Ramanathapuram						
	Total	31	29	60	47	31	78
	Rural	19	26	45	31	27	58
	Urban	12	3	15	16	4	20
17	Virdhunagar						
	Total	–14	41	27	–1	45	44
	Rural	–3	31	28	9	33	42
	Urban	–11	10	–1	–10	12	2
18	Sivagangai						
	Total	11	28	39	24	30	54
	Rural	8	24	32	18	25	43
	Urban	3	4	7	6	5	11
19	Tirunelveli						
	Total	0	67	67	26	71	97
	Rural	–1	54	53	20	56	76
	Urban	1	13	14	6	15	21
20	Thoothukudi						
	Total	–5	37	32	8	40	48
	Rural	0	27	27	10	28	38
	Urban	–5	10	5	–2	12	10

(Contd...)

(Table AH1 Contd.)

S. No.	Districts	2001			2011		
		Minimum housing need estimated	*Replacement demand estimated*	*Housing shortage estimated (3+4)*	*Minimum housing need estimated*	*Replacement demand estimated*	*Housing shortage estimated (6+7)*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
21	Kanyakumari						
	Total	65	38	103	86	41	127
	Rural	58	34	92	76	36	112
	Urban	7	4	11	10	5	15
	Tamil Nadu						
	Total	793	1391	2184	1428	1495	2923
	Rural	450	1103	1553	908	1149	2057
	Urban	343	288	631	520	346	866

Sources: Population: 1981 and 1991 Census data and RGI Expert Group Projected population for 2001 and 2011.
Households: For 2001 presumed household size of 4.2 for rural and 4.4 for urban and for the year 2011, 4.0 for rural and 4.2 for urban.
Housing units: For 2001 and 2011 projected by regression method using 1981, 1991 Census data.
Replacement demand: Used NSS 49th Round, 1993 Results on percentage of Housing.
Type—Structure and Percentage of bad condition Kutcha houses (Please see Technical Notes).
Notes: The districts shown are composite districts as per the 1991 Census. These districts have since been bifurcated (S.no. 2, 3, 6 and14)/trifurcated (S.no. 11 and 12).

E. Calculation of the Index of Deprivation (IOD)

The index of deprivation for each component is calculated by the following formula:

$$\text{Index of Deprivation (i)} = \frac{\text{Target Xi} - \text{Actual value Xi}}{\text{Target Xi} - \text{min Xi}}$$

The Index of Deprivation values for the j^{th} district with respect to the i^{th} variable (I j) is defined as the average of these variables;

$$Ij = I\ ij/3;\ i = 1, 2, 3$$

Equal weights are assigned to each of the three dimensions, as each component is equally important and the shortfall in any is indicative of the deprivation of the people in a particular district. The target values and the minimum values taken for each of the dimensions are as follows:

Safe Drinking Water

Target – 100 per cent
Minimum – 32.10 per cent (minimum value of a district)

Sanitation

Target – 90 per cent
Minimum – 8.63 per cent (minimum value of a district)

Electricity

Target – 100 per cent
Minimum – 39.1 per cent (minimum value of a district)

Statistical Gaps

This being the first Human Development Report for Tamil Nadu, it was decided that it would be broadbased and all relevant sectors would be covered.

Data Sources

We have relied extensively on the Census 1991 data and data from different rounds of the National Sample Survey. This report was ready for publication at the time when the first results of population, literacy and sex ratio of the 2001 Census were just released. These have also been incorporated wherever possible in the report. In the absence of socio-economic tables that could be available from mid-2002, detailed analysis of the preliminary Census 2001 results could not be made. Data on several indicators had to be collected from a large number of central and State government agencies.

The availability of district-wise basic data required for estimation of income at the district level is essential for the computation of reliable estimates. The data in respect of commodity producing sectors, viz. primary sectors and manufacturing (registered) sector, are fairly available but in respect of remaining sectors, are very scanty. As such, wherever district-wise basic data are available, the same have been utilized to compute the district income estimates following the State level methodology.

In case of non-commodity producing sectors, where district-wise basic data are not available, the State level estimates have been allocated to the districts on the basis of suitable district-wise indicators. Further, in some of the commodity producing sectors, though data on district-wise production are available, the corresponding prices are not available. In such cases district income estimates are compiled using district production and State prices. Similarly, wherever certain ratios/norms, yield rates, etc. are used for State estimates and which are normally not available at the district level, the State level ratios or yield rates, etc. have been utilized for district income estimates also.

Regarding tertiary sectors, the income method is adopted in the State estimates. The per head earnings based on survey results are used in the estimates along with the workforce. As the per head earnings are not available at the district level, State per head earnings with the district workforce are used to arrive at the estimates of income at district level. Broadly, the methodology of computation of sectoral estimates is the same as that adopted for estimating SDP.

The sources of data at the district level for computing the HDI are given below:

(i) The Life expectancy at birth for the year 1997 for all the 29 Districts was based on Vital Events Survey conducted by DANIDA.

(ii) The literacy rate by district for 23 districts was based on pooled samples (NSS 52 sch 1.0 (July 1995 to June 1996) census. As the new districts were formed either by bifurcating, trifurcating or reorganizing the districts in the recent years, the literacy rates for such new districts are assumed at the same levels.

(iii) Gross enrolment ratio for primary and secondary (middle, higher) schools was furnished by the Department of School Education.

(iv) Details on adult literacy by district were not available. Instead, combined literacy was adopted for calculating educational attainment. It is measured by a combination of total literacy (1991 census) (two-thirds weight) and combined primary and secondary level gross enrolment ratio (1998–9) (one-third weight).

(v) The Department of Economics and Statistics estimated district-wise income for the revised series with 1993–4 as base for the years from 1993–4 to 1997–8. The District Domestic Product (DDP) per capita was available for all the 29 districts for the year 1996–7.

(vi) Combined gross primary, middle, high and higher secondary schools enrolment ratio adjusted by the school age population has been worked out by the Department of Economics and Statistics using the data furnished by the Education Department. It refers to the number of students, regardless of age, at all these levels as a percentage of official school age population for these levels.

(vii) On income and poverty, the Gini coefficient of inequality was worked out with pooled data of consumption expenditure. The district-wise rural and urban inequality ratios have been calculated.

(viii) The HDI and GDI have been computed for all the 29 districts. Wherever the data are not available for bifurcated/trifurcated districts, the value for the composite district has been used for the bifurcated and trifurcated districts, for example the composite Trichy district literacy rate is used for Perambalur and Karur.

Education:

(i) School age population based on 1991 Census data was used and for the sake of consistency, projections of school going population in primary, middle, high and higher secondary schools were made on the basis of 1991 Census data. As regards middle school, the School Education Department figures were adopted.

(ii) As regards enrolment, only the School Education Department figures have been adopted.

(iii) As regards the projection of population, the School Education Department figures for 1998–9 could be adopted after implementing the correction for half year. As regards the drop out rates, it was decided to adopt the School Education Department figures. However, the DPEP drop out data based on cohort study and which show a higher drop out rate in DPEP districts should be discussed for such necessary corrective action by the Department, as a similar trend in drop out rates in non-DPEP districts is likely.

(iv) As the details on adult literacy by districts are not available, literacy rate according to 1991 Census is adopted.

As regards demography, census data were used for inter-district comparison as CSO publications dwelt only on annual State-wise comparison.

Issues

Difficulties that were faced during the preparation of some sectoral chapters.

1) There had been some initial problems in the compilation of data as district level data were not readily available in the administrative departments. Data on critical indicators such as LEB were available only at the State level.

2) The bifurcation of districts inevitably forced certain reworking of data in respect of other indicators.
3) In the case of enrolment in schools, the compilation of data for the newly formed districts and by gender and by rural/urban as well as by various types of schools by management (government, aided, unaided and local bodies) took some time.
4) On social security, the data on old age pension were not forthcoming and data gaps were present. Also, available data were inconsistent.
5) Worker Participation Rate was not available across sectors and major States. As the labour force participation rates are available, the relevant comparisons with major States and SAARC countries was made.
6) The district-wise, class-wise enrolment figures are not available prior to 1993–4. Hence the drop out rate for 1993–4 has not been calculated from the Sixth Education Survey. As an alternative, it was decided that the drop out rate would be calculated by comparing Class I and Class V ratios, using Class I figures as proxy.
7) Life expectancy at birth is a crucial indicator for computing the HDI. As the number of deaths, particularly in the age group 5–9, 10–14 etc., was very small, there was a need to moderate the LEB by undertaking some corrections in the form of regrouping of data, so as to ensure that the figures did not show large variations from SRS data.
8) On nutrition, reconciliation of data taken from different sources had to be undertaken as different sources were based on different norms. Contradictions within programme data and between programme and non-programme data were found to be present.
9) On education, the age-wise school going population ($5^1/_2$ to $10^1/_2$) has been calculated by the following methodology: the single age group population has been projected using the exponential growth rate method and then grouped and adjusted to the projected State population. The Registrar General of India (RGI) deals only with group population. A component cohort trend trained method (which makes use of birth rate, death rate and migration rate) is used by RGI to calculate the projections. After discussion, it was decided that the birth rate decline between 1981 and 1991 could be adopted by applying the correction factor to 1991 Census data. After checking for their validity, the school age population was firmed up.
10) As regards representation in the panchayats, though the numbers were available, information on the background of members with respect to caste, sex, occupation, education and ownership of assets was lacking.

Building Information Base

To tackle data gaps, it is suggested that one agency could be declared as the custodian of statistics, as has been done by the Government of India. It is also felt that gender disaggregated data need to be institutionalized for the future.

The exercise on evolving a methodology to estimate SDP and determining district level prices could be taken up as an ongoing exercise by the Department of Economics and Statistics.

Abbreviations

ACR	Actual Completion Rate
ADC	All Developing Countries
AIDS	Acquired Immuno-deficiency Syndrome
ARS	Accident Relief Scheme
ASFR	Age Specific Fertility Rate
CBO	Community Based Organizations
CBR	Crude Birth Rate
CC	Conventional Contraceptives
CDR	Crude Death Rate
CFC	Consumption of Fixed Capital
CMIE	Centre for Monitoring Indian Economy
CMWSB	Chennai Metropolitan Water and Sewerage Board
CrPC	Criminal Proceeding Code
DALP	Destitute Agricultural Labourers' Pension
DANIDA	Danish International Development Assistance
DDWP	Destitute Deserted Wives Pension
DPEP	District Primary Education Programme
DPH	Destitute Physically Handicapped Pension
DRDA	Department of Rural Development
DWP	Destitute Widows Pension
ESI	Employees State Insurance
EWS	Economically Weaker Section
FDI	Foreign Direct Investment
FDRS	Family Distress Relief Scheme
FI	Female Infanticide
FRU	First Referral Unit
FSI	Floor Space Index
GDI	Gender Development Index
GDP	Gross Domestic Product

GER	Gross Enrolment Ratio
GFCF	Gross Fixed Capital Formation
GOI	Government of India
GSDP	Gross State Domestic Product
HDFC	Housing Development Finance Corporation
HDI	Human Development Index
HDR	Human Development Report
HFI	Housing Finance Institutions
HIG	High Income Group
HIV	Human Immuno-deficiency Virus
HSC	Health Sub-centres
HUD	Health Unit Districts
HUDCO	Housing and Urban Development Corporation
IAP	Indian Academy of Paediatrics
ICDS	Integrated Child Development Services Scheme
IEC	Information, Education and Communication
IFAD	International Fund for Agricultural Development
IMR	Infant Mortality Rate
IOD	Index of Deprivation
IPC	Indian Penal Code
IRDP	Integrated Rural Development Programme
ISM	Indian Systems of Medicine
KMC	Kilpauk Medical College
LBW	Low Birth Weight
LCA	Land Ceiling Act
LEB	Life Expectancy at Birth
LFPR	Labour Force Participation Rate
LIG	Low Income Group
LPG	Liquified Petroleum Gas
MHD	Medium Human Development
MIG	Middle Income Group
MMDA	Madras Metropolitan Development Authority
MMR	Maternal Mortality Ratio
MTP	Medical Termination of Pregnancy
NAD	Clinically Normal Children
NBO	National Buildings Organization
NCAER	National Council for Applied Economics and Research
NCERT	National Council for Education Research and Training
NFHS-2	National Family Health Survey-2
NGO	Non-governmental Organization
NHB	National Housing Bank
NHP	National Housing Policy, 1998
NLEP	National Leprosy Eradication Programme
NMCP	National Malaria Control Programme

NMEP	National Malaria Eradication Programme
NMP	Noon Meal Programme
NNMB	National Nutrition Monitoring Bureau
NSDP	Net State Domestic Product
NSSO	National Sample Survey Organization
OAP	Old Age Pension
ORT	Oral Rehydration Therapy
PEM	Protein Energy Malnutrition
PHC	Primary Health Centre
PHP	Physically Handicapped Person
PNMR	Prenatal Mortality Rate
PPP$	Purchasing Power Parity Dollars
RCH	Reproductive and Child Health
RHC	Rural Housing Corporation
SBR	Still Birth Rate
SDS	Society for Development Studies
SHG	Self Help Group
SIRD	State Institute of Rural Development
SRS	Sample Registration System
STD	Sexually Transmitted Diseases
TFR	Total Fertility Rate
TINP	Tamil Nadu Integrated Nutrition Project
TN	Tamil Nadu
TNAHCP	Tamil Nadu Area Health Care Project
TNCDW	Tamil Nadu Corporation for Development of Women
TNCHF	Tamil Nadu Co-operative Housing Federation
TNEB	Tamil Nadu Electricity Board
TNMSC	Tamil Nadu Medical Services Corporation
TNSCB	Tamil Nadu Slum Clearance Board
UNCHS	The United Nations Centre for Human Settlements
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Education Fund
USAID	United States Agency for International Development
VES	Vital Events Survey
VHN	Village Health Nurse
VHS	Voluntary Health Services
VLCC	Village Level Coordination Committee
WHH	Women-headed Household
WPR	Work Participation Rate

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This is Tamil Nadu's first Human Development Report. Tamil Nadu has fared very well in human development among the States in India. It needs to be noted, however, that there are vast variations in the indicators of human development within the State itself.

Factors contributing to human development are disaggregated in this Report, and analysed at the district level. This will enable readers to understand the regional disparities in Tamil Nadu and the reasons behind them. The Report not only puts within one cover all the various aspects of human development in Tamil Nadu but also seeks to explain why the State has fared well in certain areas and not in others. It also highlights the policy interventions that will be required to correct the imbalances.

Tamil Nadu Human Development Report is a balanced and objective account of the State's performance and as such will be of immense value to those planning for growth, social justice and equity in the State, as well as researchers and students of social sciences in university departments and other institutions.

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