2

Status of Human Development

Human development paradigm, based on Sen's capability approach, has been recognised as a necessary corrective to growth-centric approaches to development, in view of limited trickle-down powers of market forces to spread benefits of growth and alleviate poverty. The capability approach provides a conceptual foundation for privileging the domain of human development, defined as a process of enlarging people's choices and enhancing human capabilities and freedoms, enabling them to live a long and healthy life, have access to knowledge and a decent standard of living, and participate in community life and decisions that affect their lives. Therefore, development is about removing obstacles to attaining such freedoms, such as illiteracy, ill health, lack of access to resources, or lack of civil and political freedoms.

The State is responsible for ensuring that access to entitlements is equitable, sufficient and universal. The HDI (human development index) is a composite index encompassing three core dimensions of human development—health, education and income—and it is used for measuring achievements in these areas. Human development provides insights for prioritising investment of public resources for improvement of overall human well-being and enhancing people's capabilities and opportunities. An implication of this emphasis is that the State has to focus not merely on economic growth but assume responsibility for investments in education, health and social security, protecting citizens' rights and ensuring equality before law. Simultaneously, it also means paying attention to, and investing in basic amenities that help promote better livelihoods, enhance efficiency, and create more socially or public owned facilities to be accessed by all. It is assumed that once the core dimensions of human development and capabilities to attain them are achieved, peoples' economic opportunities will automatically get widened in the development process. Subsequently, United Nations Development Programme (UNDP) enlarged the understanding of human development by incorporating aspects, such as use of more comprehensive measures of poverty (MPI or Multi Poverty Index), gender inequality (GII or Gender Inequality Index), food security (FSI or Food Security Index) and child development (CDI or Child Development Index). Although the dimensions have remained the same, the measurement of human development is now broad based and considers several additional indicators.

In Tamil Nadu, seen from the above perspective of development, several social security programmes have been implemented under different sectors and for different marginalised population groups, which had and are expected to have far-reaching implications for human development. In order to understand the status and regional variations in human development and its related aspects across districts in the State, different indices such as HDI, GII, CDI, FSI and MPI have been computed and discussed in this chapter.[1]

Human Development Index

Following the UNDP methodology, the index captures achievements across the three basic capabilities of health, education and living standards. The indicators that are used for deriving HDI at the district level are as follows:

Figure 2.1

Human Development Index: Components
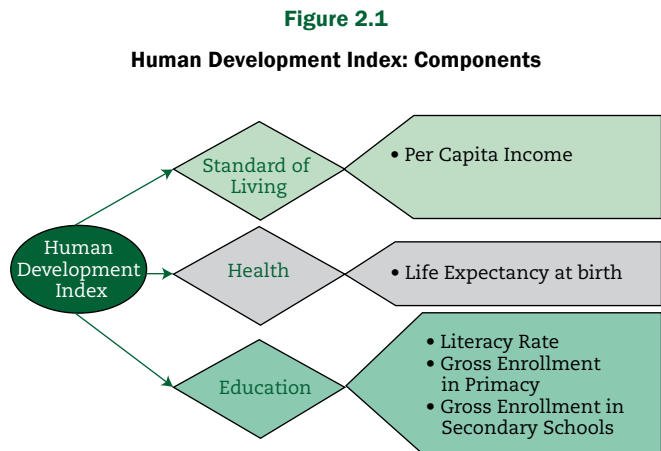
Human Development Index: Inter-district Variations

The HDI has been calculated for all the districts using PCI (per capita income) as a determinant of the standard of living. Health indicator is measured using the life expectancy at birth, and access to knowledge is assessed by considering the literacy rate and GER (gross enrolment ratios) at the primary and secondary levels. Table 2.1 provides a list of the five best and five worst performing districts across the various indicators mentioned above.

Table 2.1 indicates inter-district variations in the three basic indicators of human development. Kanyakumari district is in the top five districts with respect to PCI, life expectancy at birth and literacy rate. Kancheepuram, which also has a high PCI, does not fall in the top-five category in health and gross enrolment

---

1. Detailed discussion of the computation of all the indices and the values for all districts are provided in the annexures to this chapter.

Table 2.1

Top and Bottom Five Districts in Human Development Indicators

Table Indicators	Top 5	Bottom 5 (from lowest to higher)
Standard of living: Per Capita Income	Kanyakumari	Ariyalur
	Kancheepuram	Perambalur
	Tiruppur	Thiruvarur
	Virudhunagar	Villupuram
	Tiruvallur	Theni
Life Expectancy at Birth	Chennai	Tiruppur
	Kanyakumari	The Nilgiris
	Coimbatore	Theni
	Thoothukudi	Nagapattinam
	Krishnagiri	Madurai
Literacy Rate	Kanyakumari	Dharmapuri
	Chennai	Ariyalur
	Thoothukudi	Villupuram
	The Nilgiris	Erode
	Kancheepuram	Salem
GER- Primary	The Nilgiris	Tiruppur
	Ramanathapuram	Ariyalur
	Perambalur	Chennai
	Pudukottai	Tiruvanamalai
	Tiruvarur	Cuddalore
GER – Secondary	Dharmapuri	Erode
	Nagapattinam	Karur
	Perambalur	Villupuram
	Thanjavur	Chennai
	Krishnagiri	Tiruvanamalai

Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14.

indicators. Tiruppur district, despite ranking high in PCI, performs poorly in health and education. While such anomalies across these dimensions exist in some districts, there are districts, like Ariyalur, which ranks among the bottom five districts in most parameters, such as PCI, literacy rate and GER for primary school. Clearly, interventions in such districts need to be more broad-based, as opposed to designing sector-specific interventions in districts such as Tiruppur that have high living standards but without comparable attainments in health or education.

Computation of the district level human development indices reveal the following pattern of ranking presented in Table 2.2.

Kanyakumari is the district with the highest HDI and Ariyalur has the lowest HDI. Thoothukudi, with high life expectancy at birth and high literacy rate, finds itself in the top five districts. Ariyalur and Perambalur, due to its PCI being so low, are placed in the bottom five districts. Coimbatore, in spite of its high degree of industrialisation and PCI, does not figure in the top five districts with high HDI. It goes on to show that high PCI does not necessarily translate into high human development indices, unless accompanied by investments made in the education, health and other social sectors.

Table 2.2

HDI Index Top and Bottom Five Districts

District	Index	Rank
HDI Index		
Top 5 Districts		
Kanyakumari	0.944	1
Virudhunagar	0.855	2
Thoothukudi	0.852	3
Chennai	0.847	4
Kancheepuram	0.845	5
Bottom 5 Districts		
Thiruvarur	0.568	28
Villupuram	0.561	29
Theni	0.539	30
Perambalur	0.447	31
Ariyalur	0.282	32

Source: Calculated from data provided from the Departments, Government of Tamil Nadu, 2013-14.

Comparison with State Human Development Report-2003

The previous *Human Development Report (HDR)-2003* indicated that Chennai, Kancheepuram, Kanyakumari, Thoothukudi and Coimbatore were the top five districts. Though the two sets of indices are not strictly comparable given the bifurcation of some districts between the two time points, some comparative observations are made here. The latest HDR reveals that Kanyakumari has achieved the top position, while Coimbatore does not even figure in the top five. The new entrant in the top five district category is Virudhunagar in the latest HDR. Virudhunagar's rise to the top has been primarily due to its relatively higher per capita income which in turn can be attributed to the spread of small scale industries such as printing and fireworks, and also a vibrant agricultural marketing economy. The bottom five districts in the previous HDR are Perambalur, Villupuram, Dharmapuri, Tirunelveli and Pudukottai. Many of these districts have been bifurcated, but Perambalur and Villupuram continue to be at the bottom. Theni has newly entered into the bottom five. This indicates that investments made for improving livelihoods and also in education and health sectors must be increased in these districts so as to move them out of their low indices.

Figure 2.2

HDI Index
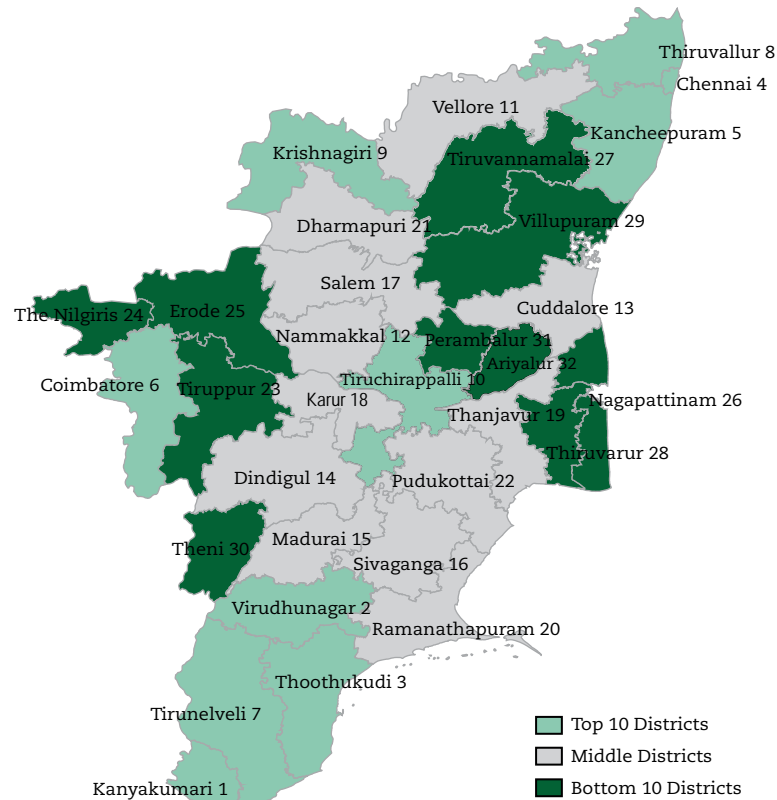
Source: Calculated from data provided from the Departments, Government of Tamil Nadu, 2013-14.

Gender Inequality Index

Disadvantages and discrimination faced by women and girls in the domains of access to health, education and the labour market foster gender inequalities in human development achievement. Equality between men and women exists, when both sexes have equal share in the distribution of power and influence; have equal possibilities for financial resources through businesses opportunities; enjoy equal access to education and the opportunity to develop personal ambitions, interests and talents; share responsibility for the home and children; and are completely free from coercion, intimidation and gender-based violence at work and at home (Engelman, 2009). Addressing the issue of gender inequality in the above-said domains therefore, is critical to accelerate human development.

Gender equality in health, education and labour market directly contributes towards increased access to employment and income earnings, and also a greater participation in decision-making process, thereby leading to human development. In turn, increased human development may also help in reducing gender inequality. Therefore, policies focusing on women's empowerment and aiming to bring them at par with men have become most prominent in the developing economies. This is diagrammatically represented in Figure 2.3.

Figure 2.3

Linkages between Gender Equality and Human Development
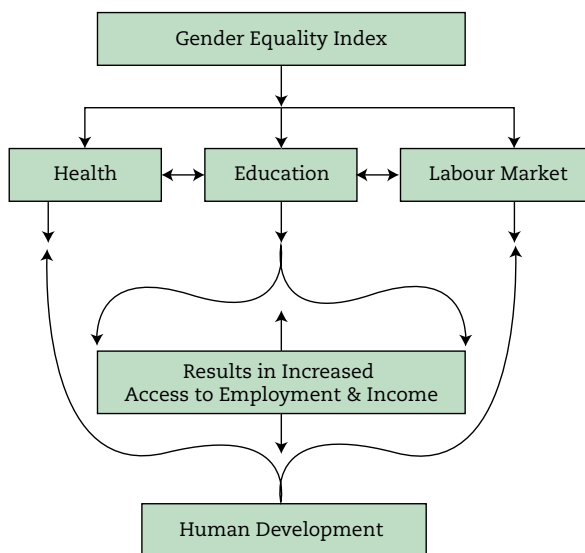
Source: *District Human Development Report, Haveri, 2015.*

GII measures the loss in potential of human development due to inequality between female and male achievements. As it reflects inequality, a value of zero represents no inequality and that of one represents the highest level of inequality in a society. The UNDP report of 2010 has brought out the GII index for all countries. For measuring GII, three dimensions are considered by the report. They are:

1. Reproductive health

2. Empowerment

3. Labour market

In the present exercise, the following indicators are used for computing gender inequality across districts in the State.

The health dimension is measured by three indicators: child sex ratio, MMR (maternal mortality ratio) and the percentage of institutional deliveries. The empowerment dimension is also measured by an indicator for political participation through differentials in the male-female share of elected representatives. In the domain of literacy, differentials in male-female literacy rates are used. The labour dimension is measured by male and female participation in the workforce and also the corresponding wage rates. The GII is designed to derive the extent to which achievements in these aspects of human development are eroded by gender inequality, and to provide empirical foundations for policy analysis and advocacy efforts. The following table identifies the top ranking and low ranking districts in terms of GII (Table 2.3). The spatial spread of these districts is depicted in Figure 2.5.

The GII of the State is the best in Nilgiris district where gender inequality is closest to zero (0.036), and inequality is the most in Ariyalur district which registers an index value of 0.118. In Ariyalur district, most of the gender-related indicators—female literacy rates and female agricultural wage rates—are low. A lower score in terms of indicators relating to capabilities, livelihood and empowerment has widened gender inequality in the district. Importantly, it should be noted that Ariyalur ranks low in overall human development indices as well, thus indicating an overlap of deprivations among women in the district. Kanyakumari has the highest health indicators in terms of low MMR and high institutional deliveries, but due to other factors, its position has moved to the middle level at rank 12. Kanyakumari's inequality is more in the livelihood indicator as one

Table 2.3

GII Index

District	Index	Rank	District	Index	Rank	District	Index	Rank
Top 5 Districts			*Middle 5 Districts*			*Bottom 5 Districts*		
The Nilgiris	0.036	1	Erode	0.065	11	Chennai	0.111	28
Virudhunagar	0.048	2	Kanyakumari	0.066	12	Madurai	0.112	29
Vellore	0.051	3	Karur	0.07	13	Villupuram	0.113	30
Nammakkal	0.054	4	Tiruppur	0.07	14	Sivaganga	0.114	31
Perambalur	0.057	5	Dharmapuri	0.074	15	Ariyalur	0.118	32

Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2014-15.

Figure 2.4

Components of Gender Inequality Index
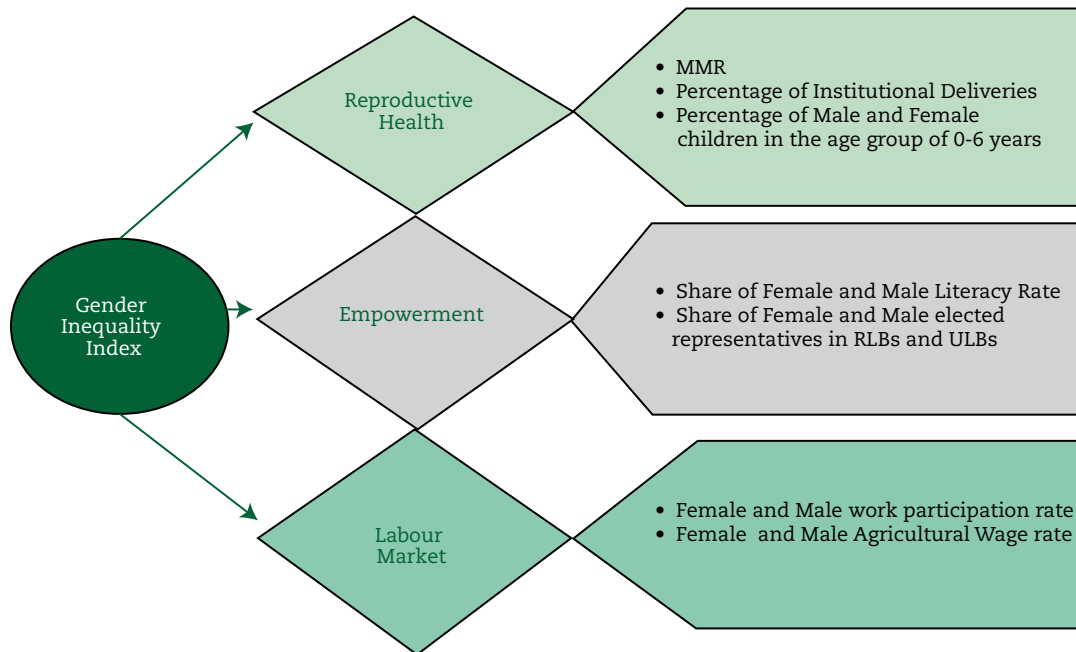
finds that female wage rate is only half of the male and their workforce participation rate is also much lower. Although participation rates may not actually indicate loss of economic power as revealed by micro-level studies (Jeyaranjan 2011), it is a conventionally used indicator. Madurai is one of the districts with high MMR and so it is placed within the bottom five districts in GII. Virudhunagar has the highest female political representation, while Nilgiris registers the lowest. Female agricultural wage was the highest in Salem (₹258.11) and lowest in Villupuram (₹74.88). The latter is a contributing factor for Villupuram district in order to be featured among districts with the highest levels of gender inequality. Female workforce participation rate is the highest in Perambalur and lowest in Kancheepuram (16.4).

**Comparison of HDI and GII**

This section attempts to compare the ranks of districts in terms of HDI and GII. It was found that in three districts—Virudhunagar, Pudukottai and Ariyalur—

Table 2.4

Comparison of HDI and GII

HDI Index			GII Index		
District	*Index*	*Rank*	*District*	*Index*	*Rank*
Top 10 Districts			*Top 10 Districts*		
Kanyakumari	0.944	1	The Nilgiris	0.036	1
Virudhunagar	0.855	2	Virudhunagar	0.048	2
Thoothukudi	0.852	3	Vellore	0.051	3
Chennai	0.847	4	Nammakkal	0.054	4
Kancheepuram	0.845	5	Perambalur	0.057	5
Coimbatore	0.844	6	Salem	0.058	6
Tirunelveli	0.802	7	Thanjavur	0.058	7
Thiruvallur	0.801	8	Dindigul	0.063	8
Krishnagiri	0.788	9	Thiruvallur	0.064	9
Trichy	0.774	10	Kancheepuram	0.064	10
Middle Districts			*Middle Districts*		
Vellore	0.742	11	Erode	0.065	11
Nammakkal	0.738	12	Kanyakumari	0.066	12
Cuddalore	0.719	13	Karur	0.07	13
Dindigul	0.691	14	Tiruppur	0.07	14
Madurai	0.689	15	Dharmapuri	0.074	15
Sivaganga	0.671	16	Ramanathapuram	0.075	16
Salem	0.669	17	Theni	0.075	17
Karur	0.668	18	Trichy	0.082	18
Thanjavur	0.655	19	Thoothukudi	0.083	19
Ramanathapuram	0.653	20	Cuddalore	0.083	20
Dharmapuri	0.644	21	Tirunelveli	0.084	21
Pudukottai	0.631	22	Pudukottai	0.085	22
Bottom 10 Districts			*Bottom 10 Districts*		
Tiruppur	0.627	23	Coimbatore	0.088	23
The Nilgiris	0.624	24	Krishnagiri	0.091	24
Erode	0.616	25	Thiruvarur	0.1	25
Nagapattiam	0.601	26	Tiruvannamalai	0.101	26
Tiruvannamalai	0.596	27	Nagapattiam	0.104	27
Thiruvarur	0.568	28	Chennai	0.111	28
Villupuram	0.561	29	Madurai	0.112	29
Theni	0.539	30	Villupuram	0.113	30
Perambalur	0.447	31	Sivaganga	0.114	31
Ariyalur	0.282	32	Ariyalur	0.118	32

Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14.

Figure 2.5

GII Index
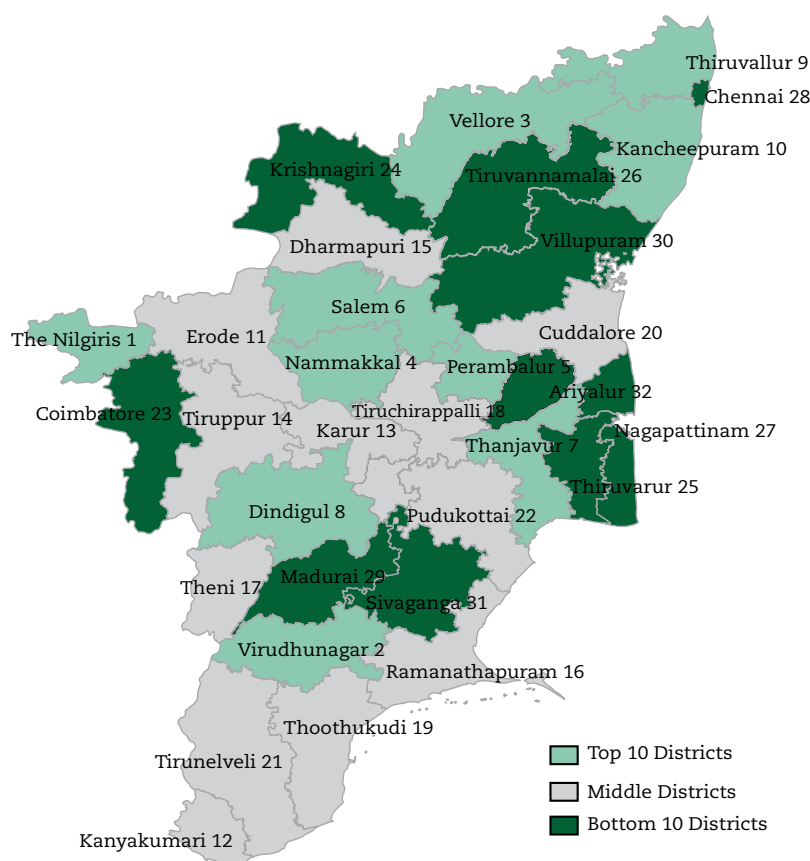
Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2014-15.

ranks were the same for both the indicators. Poor reproductive health services are a major contributor to differences noticed in gender inequality. Table 2.4 gives the top 10, middle 10 and bottom 10 districts for the two indices.

A closer look at both the indices reveals a few indices where HDI rank is greater than the GII, and some in which the scenario is vice-versa (see Table 2.5).

Sivaganga and Madurai have GII ranks close to the bottom, while their human development indices are on the higher side. In Perambalur, the Nilgiris, Erode, Theni and Thoothukudi, the GII is on lower side and the HDI also shows a corresponding low rank.

Child Development Index

Children are the potential assets of a nation. Integrated development is quite important during

Table 2.5

Rank Comparison of the Districts' HDI and GII

Parameters	Districts
Districts with HDI rank greater than the GII rank	Chennai
	Thoothukudi
	Krishnagiri
	Sivaganga
	Madurai
Districts with HDI rank lower than the GII rank	Perambalur
	The Nilgiris
	Erode
	Theni
Districts with HDI and GII of same rank	Virudhunagar
	Pudukottai
	Ariyalur

Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14

their childhood, the period during which most of their cognitive, emotional and social skills and physical development as individuals, takes place. Computation of CDI helps policy makers to promote and develop public policies dedicated towards development of children. The CDI was developed by the "Save the Children" campaign in the United Kingdom (UK), in 2008, with the contributions of Terry McKinley, Director of the Centre for Development Policy and Research at the School of Oriental and African Studies (SOAS), University of London, with support from Katerina Kyrili. The indicators of CDI conventionally used are related to health, nutrition and education. The selected indicators are chosen because they are easily available, commonly understood, and clearly indicative of children's well-being. At the international level, the three indicators used for measuring CDI are:

- *Health*: Under-five mortality rate (the probability of dying between birth and five years of age, expressed as a percentage on a scale of 0 to 340 deaths per 1,000 live births). This means that a zero score in this component equals an under-five mortality rate of 0 deaths per 1,000 live births, and a score of 100 implies upper bound of 340 deaths per 1,000 live births.

- *Nutrition*: The percentage of children below five years who are moderately or severely under-weight. The common definition of moderately or severely under-weight, which has been used, is being below two standard deviations of the median weight for age of the reference population.

- *Education*: The percentage of primary school-aged children who are not enrolled in school.

The set of indicators used for computing the CDI in Tamil Nadu are given in Figure 2.6. It may be observed that the indicators used for computing CDI across the districts are different from the ones suggested above for the reason that the State has taken significant steps in the education and health sectors over past few decades, and these need to be captured in the measurement of CDI.

The child development index indicated above is a variant of the Achievements of Babies and Children (ABC) index and is calculated in the same manner as the HDI index, using the following indicators: probability of surviving until age five; proportion of children malnourished in the age group of 12-23 months; enrolment in primary and secondary levels'; transition rates from primary to upper primary and upper primary to secondary;children never enrolled; and juvenile sex ratio. Each indicator captures an important aspect of the well-being of children: survival until age five, adequate nourishment, educational attainment, and sex ratio respectively. The last indicator focuses on girls specifically, to impart some gender sensitivity to the index.

Dreze and Khera point to Tamil Nadu's lead in the field of child development (2012). They highlight that while Kerala's achievements in this regard are well known, Tamil Nadu is not far behind, and the fact that all districts of Tamil Nadu are doing well in this respect is quite remarkable. They state that this

Figure 2.6

Parameters for CDI

- U5MR
- Percentage of Malnourished Children (0-6 years
- Juvenile Sex Ratio
- Gross Enrolment Ratio in Primary and Secondary Schools
- Percentage of Children never enrolled in School
- Transition Rate from Primary to Upper Primary
- Transition Rate from Upper Primary to Secondary

Child Development Index
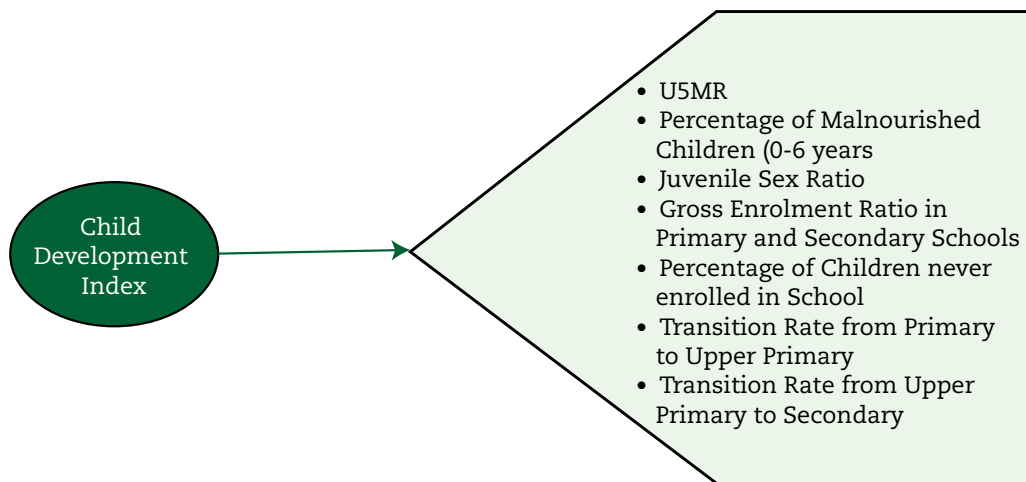
claim is consistent with recent evidence available on rapid improvements in child nutrition, healthcare and elementary education in Tamil Nadu, integrated with active social policies including free and universal provision of essential public services. Table 2.6 gives the five best and worst performing districts in the State in terms of CDI.

Table 2.6

CDI Index

District	Index	Rank
Top 5 Districts		
Kanyakumari	0.872	1
Coimbatore	0.745	2
Thoothukudi	0.712	3
Thanjavur	0.71	4
Sivaganga	0.706	5
Bottom 5 Districts		
Ramanathapuram	0.528	28
Vellore	0.523	29
Krishnagiri	0.474	30
Tiruvannamalai	0.426	31
Ariyalur	0.41	32

Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14.

Kanyakumari district (0.872) stands first with respect to CDI, while Ariyalur (0.41) has the worst CDI. Kanyakumari and Thoothukudi also have high HDI values. Tiruvanamalai, Krishnagiri, Vellore and Ramanathapuram fare poorly with regard to child development indicators. Ariyalur has poor HDI too. Besides that, Tiruvanamalai and Vellore have tribal belts where malnourishment and gross access ratios are relatively low. Coimbatore, Thuthukoodi, Thanjavur and Sivaganga have high child development indices. Children in these districts are better off, in terms of survival rates, nutrition and educational attainment. The relative performance and ranks of the districts are spatially captured in Figure 2.8.

Multidimensional Poverty Index

The MPI (multidimensional poverty index) measures indicate not only proportion of people deprived that is, the incidence of poverty,but also the degree or intensity of deprivation for each poor household, thus providing us with a better understanding of the dimensions

of deprivation. Both the incidence and intensity of these deprivations provide critical information for understanding and intervening in poverty alleviation. Economic growth that does not generate sufficient decent employment is unlikely to foster human development. In addition to money metric measures, efforts have been underway since 2010 so as to come up with additional measures for understanding ways in which the poor face overlapping deprivations across several dimensions, such as health, education and living standards. Such an understanding can help to better address poverty reduction and achievement of millennium development goals (MDGs).

Figure 2.7

Multidimensional Poverty Index
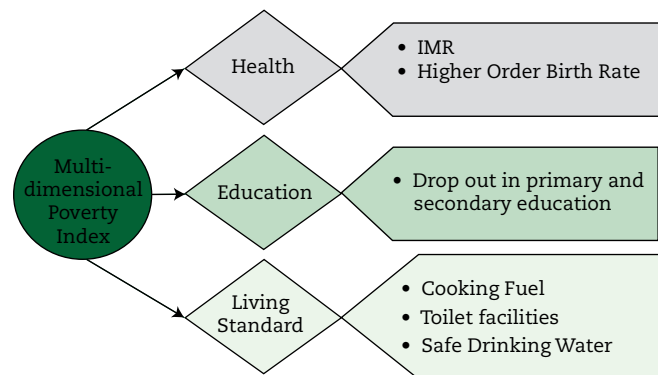
The MPI has seven indicators—two for health, two for education and three for standard of living. The three standard MDG indicators that are related to health and living standards, and which particularly affect women are access to clean drinking water, access to improved sanitation and use of clean cooking fuel. A person has access to clean drinking water, if the water source is any of the following types: piped water, public tap, borehole or pump, protected well, protected spring or rainwater. Also, the source must be within a distance of 30-minutes walk (round trip). A person is considered to have access to improved sanitation if the household has some type of flush toilet or latrine, or ventilated improved pit, or composting toilet, provided that they are not shared. If a household does not satisfy these conditions, then it is considered to be deprived in sanitation.

All standard of living indicators actually refer to the means to achieve better standards and are not direct measures of its functioning. Further, most indicators are related to MDGs, which provide stronger grounds for their inclusion. MPI can thus help in designing

Figure 2.8

CDI Index
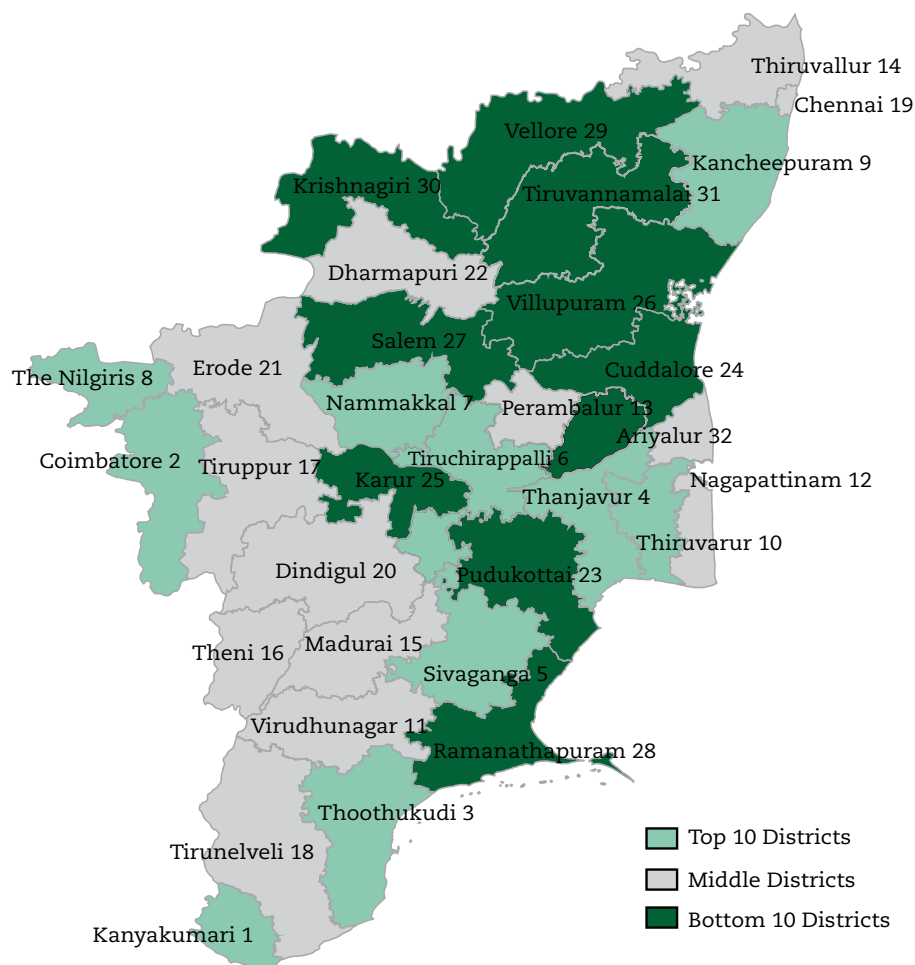
Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14.

and formulating policies that are more effective in addressing poverty by identifying interconnections, monitoring impacts and allocations of resources effectively. The performance of districts on these parameters is given in Table 2.7 and spatially illustrated in Figure 2.9.

It is evident from the above table that Dharmapuri has the highest multidimensional poverty index and Kancheepuram ranks the lowest. The table also indicates that Dharmapuri, Perambalur, Virudhunagar and Ariyalur are the districts with the largest proportion of population in severe poverty, requiring targeted interventions. Dharmapuri has poor health,

education and also standard of living indicators, high infant mortality rate (IMR) and low sanitation coverage. Perambalur, Virudhunagar and Ariyalur are also districts which have multiple deprivations in terms of health, education and standard of living. Kancheepuram and Chennai have the least level of deprivations, and both of them appear to be highly urbanised, well connected and have greater access to education and health facilities. The table on MPI values indicates that they are not highly divergent and many of the districts' values lie close together, indicating that even in the district with the lowest multidimensional poverty, there is scope for improving the values.

Table 2.7

MPI Index

District	Index	Rank
Top 5 Districts		
Kancheepuram	0.34	1
Chennai	0.34	2
Cuddalore	0.38	3
Coimbatore	0.41	4
Nagapattiam	0.41	5
Bottom 5 Districts		
Ariyalur	0.62	28
Virudhunagar	0.62	29
Ramanathapuram	0.63	30
Perambalur	0.63	31
Dharmapuri	0.7	32

Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14.

Figure 2.9

MPI Index
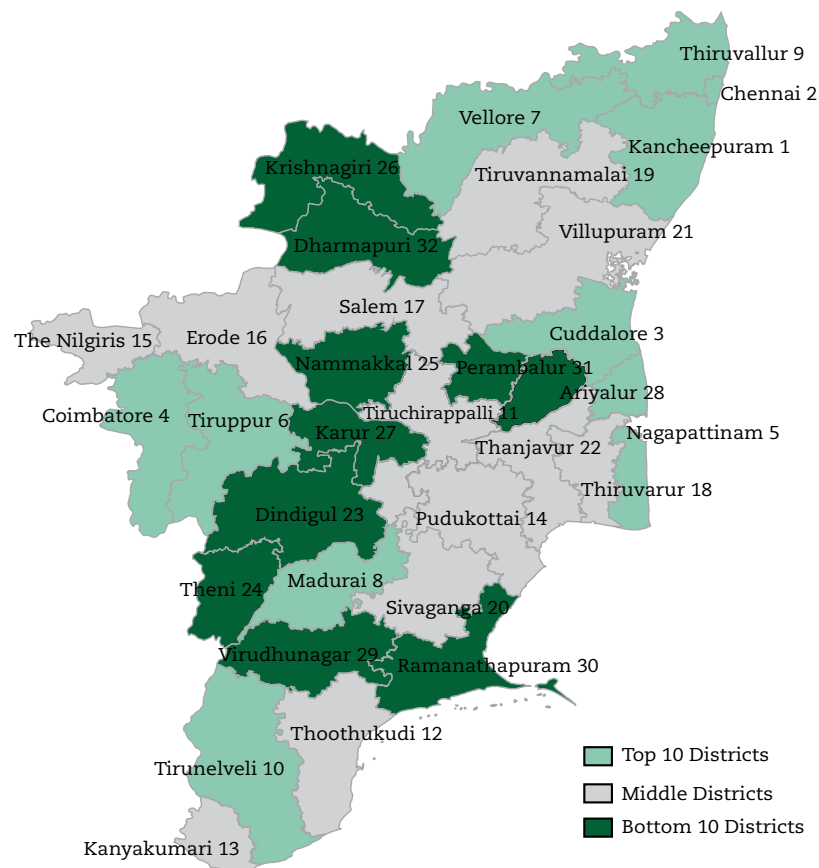
Source: Calculated from data provided by the Departments, Government of Tami Nadu, 2013-14.

Food Security Index

In India, the dimension of food security is important despite attaining self-sufficiency in food production. Though there has been a considerable improvement in productivity and production of rice and wheat, we have not been able to eliminate chronic hunger and poverty. Understanding of the different dimensions of food security, therefore, is of critical importance. The concept of food security in the Indian context has been increasingly refined during the last 50 years. After World War II, food security meant building emergency grain reserves and ensuring the physical availability of food in the market. After the onset of green revolution in the late 1960s, it became obvious that economic access to food is equally important to ensure food security at the household level. During the 1980s, the principle of social access was emphasised, with special reference to marginalised communities and gender discrimination. After the United Nations Conference on Environment and Development (UNCED) conference in Rio de Janeiro, there has been an increasing recognition of the role of environmental factors in food security. The ecological foundations essential for sustained agricultural progress are increasingly under stress due to human activities. One of the early initiatives in assessing the food security scenario in the country was the release of a series of Atlases by M.S. Swaminathan Research Foundation (MSSRF) that looked into the food security in rural and urban areas and also the Sustainability of Food Security atlas of India.

Ensuring food security is an overall objective of development programmes in most developing economies like India. Several problems, such as hunger, malnutrition, under-nutrition and poverty,

arise due to food insecurity. Food security and poverty are inextricably linked as Figure 2.10 indicates.

The data given in Figure 2.11 indicates that, at the global level, there has been a positive association between food security and human development. Countries with high status of food security, such as the USA, UK and China, have fared better in the attainment of human development as compared to those ones with low status of food security, such as India, Pakistan, Bangladesh and Nepal. This implies that food security plays an important role in achieving better human development outcomes.

Figure 2.10

Association between Food Insecurity and Poverty
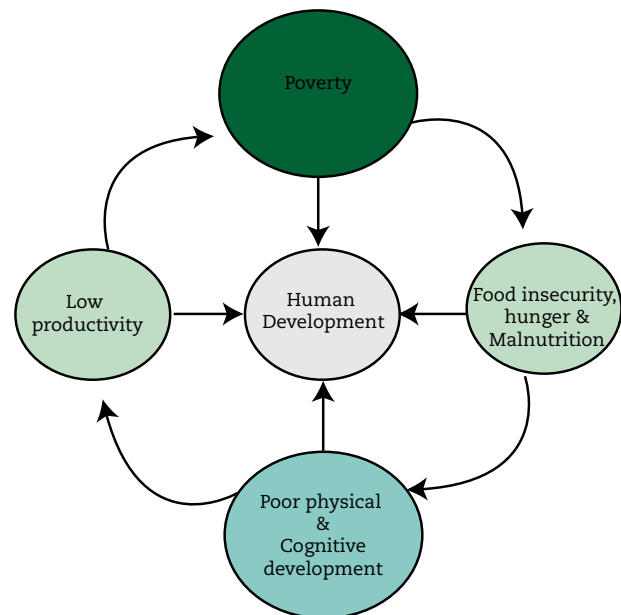
Figure 2.11

Association between Global Food Security Index and HDI of Selected Countries: 2013
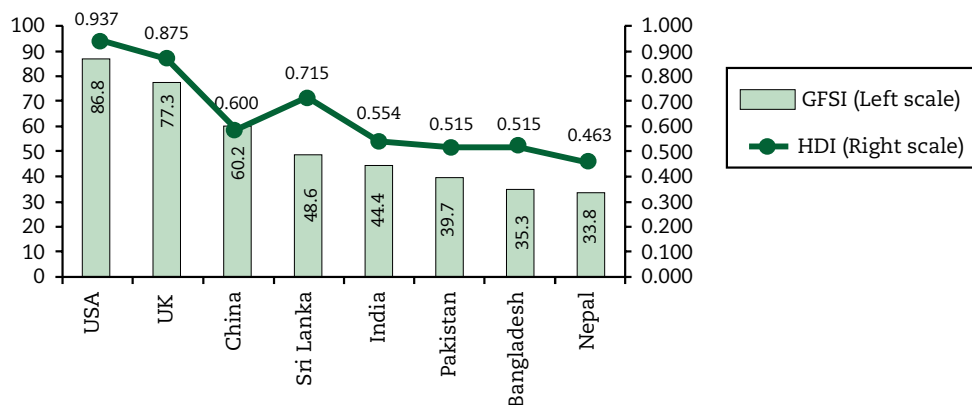
Source: UNDP *HDR 2013* and DuPont's *Global Food Security Index 2013*.

Figure 2.12

Indicators Used to Compute FSI
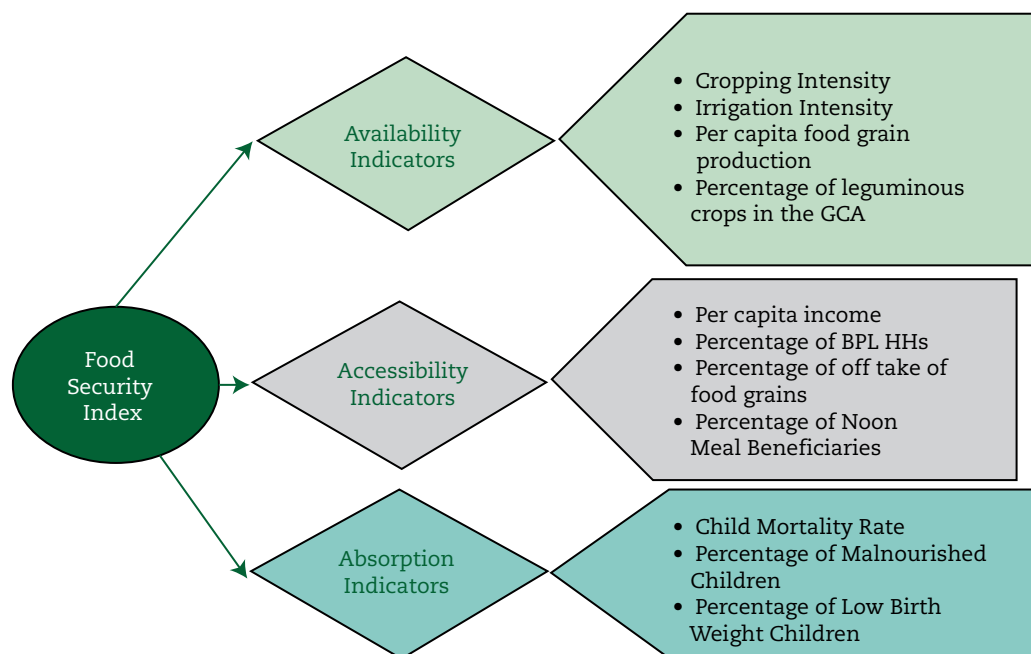
Despite a significant reduction in the incidence of poverty, chronic food insecurity persists in a significant proportion of the population. It has been possible to resolve the problem of food security by offering universal PDS and maintaining sufficient buffer stocks. Yet, there are areas that are food insecure and undernourished. The limitation is not food supply, but food distribution. Careful consideration of food security requires moving beyond food availability and recognising low incomes of the poor. It is also important to identify the choices that households and regions face, including exploitation of natural resources when incomes fall short. Substantial human resources are wasted due to malnutrition-related diseases.

The set of indicators (Figure 2.12) used for computing the FSI are as follows:

Food Security has three components—availability, accessibility and absorption. Availability of food indicates the physical presence of food or domestic production of Foodgrain from agriculture or allied sector in a particular region or place in certain duration and with given technology inventory levels. Accessibility of food refers to acquiring adequate amounts of food through production and stocks, in turn interlinking with the ability of people to obtain food, either through production, purchase or transfers. These components of food security are directly linked with economic ability of the population to afford the sufficient food for their survival. Last component of food security, absorption of food, is defined as a household's ability to absorb and metabolise the nutrients and appropriate nutritional content of the food consumed; and ability of the body to use it effectively. The average per capita availability of rice, from the State's own harvests in the 1980-81 to 1989-90 period, was 98.6 kg but has since then dropped to an average of 84.6 kg for the period 2000-01 to 2006-07.[2]

Looking at district-wise food security, there are clear differences in the levels of FSI across districts (Table 2.8).[3]

Table 2.8 on FSI indicates the presence of variations with reference to availability, access and absorption. The Delta districts and granaries of Tamil Nadu are

---

2. *http://infochangeindia.org/agriculture/analysis/the-hunger-index.html downloaded on june* 25, 2015.

3. This discussion on FSI does not take into account the district of Chennai, which is entirely an urban district.

Figure 2.13

FSI Index
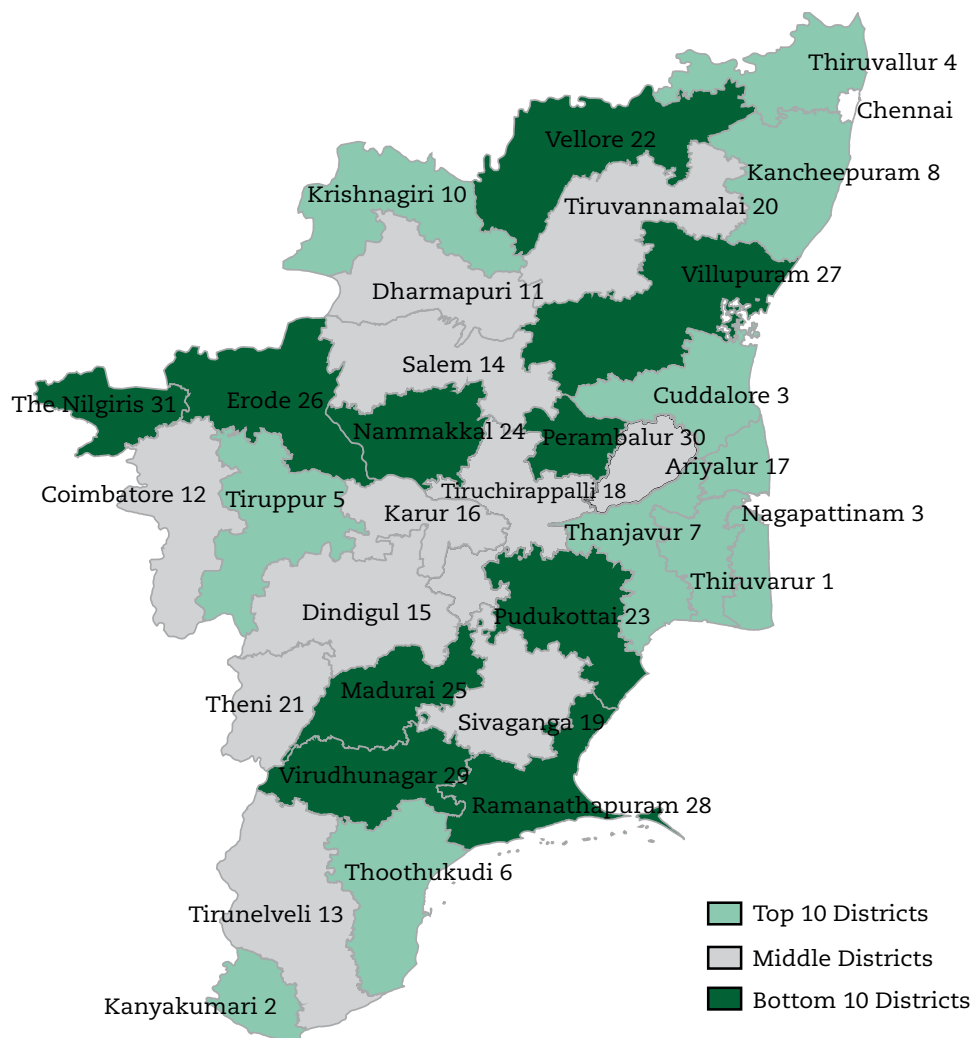
Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14.

high on the availability indicators, but rank low on access and absorption indicators (details in appendix). The variations in FSI are between 0.58 in Tiruvarur to 0.23 in the Nilgiris. Figure 2.13 highlights the inter-district variations spatially.

In terms of accessibility, Karur has the highest rank, with the lowest rank accorded to Perambalur. This is because Perambalur has poor purchasing power. Kanyakumari has the highest rank in absorption levels as the district has high health indicators, while Tiruvanamalai has the lowest rank given the high levels of malnourishment.

Tiruvarur, Kanyakumari, Nagapatinam, Tiruvallur and Tiruppur are districts with the top five ranks in FSI. Kanyakumari, despite low availability, has high degree of access and absorption levels. The district of Tiruvallur has more or less equal levels of availability, access and absorption. Tiruppur has high absorption levels, although access and availability remain low. The bottom five districts in FSI are: the Nilgiris, Perambalur, Virudhunagar, Ramanathapuram and Villupuram. These districts have problems with respect to availability, access and absorption. Except the Nilgiris, the other districts are mostly dry in nature

Table 2.8

FSI Index

District	Index	Rank
Top 5 Districts		
Thiruvarur	0.58	1
Kanyakumari	0.562	2
Nagapattiam	0.524	3
Thiruvallur	0.511	4
Tiruppur	0.487	5
Bottom 5 Districts		
Villupuram	0.333	27
Ramanathapuram	0.286	28
Virudhunagar	0.268	29
Perambalur	0.267	30
The Nilgiris	0.226	31

Source: Calculated from data provided by the Departments, Government of Tamil Nadu, 2013-14.

where cultivation is rainfed, and they face problems related to availability of Foodgrains, along with poor access and low consumption levels. The Nilgiris has low availability because it mostly falls in the hilly terrain and cultivation in the region is mostly plantation type and involves high value horticultural crops.

The Food Insecurity Atlas of urban India brought out by MSSRF in 2006 points out that the urban poor are not significantly better off than their rural counterparts. It also highlights that urban calorie intake tends to be lower than that in the rural zones, with absorption levels influenced by sanitation levels and other environmental factors.

Conclusion

Progress made in the State has been accompanied by demographic changes, along with improvements in literacy levels and reductions in total fertility rate. In addition to core human development parameters, this chapter has sought to highlight inter-district variations across other critical parameters for ensuring sustained improvements in overall well-being such as gender inequality, child development, multidimensional poverty and food security indices. Districts like Kanyakumari, Thoothukudi and Coimbatore seem to be faring well in many of the indices, while those like Ariyalur, Perambalur and Villupuram perform poorly. Although some marginal changes are observed over time with the inclusion of Virudhunagar district in the top five districts, regional variations have more or less persisted over the decade. Despite sustained overall improvements, the chapter observes sharp inter-district differences across various dimensions of human development. Some of the districts with low levels of human development also rank low across other indices. Gender inequalities in well-being persist in the State across all three dimensions. Despite being one of the better performing states in terms of human development, there are significant inter-district and intra-district disparities even in the high HDI districts. As regards to the inter-relationship of different components of the HDI, many districts had varying levels of correlation. Indicators of CDI show scope for improvement and this is particularly relevant as it will have an impact on the next generation of Tamil Nadu. The multidimensional poverty index highlights not only inter-district variations that partially overlap with those in levels of human development, but along with indicators of food absorption, it also puts the spotlight on the relatively lower levels of sanitation that the State must take into account to formulate appropriate policy intervention.

<div align="center">

Annexures

Methods for Computation of Indices: HDI

</div>

Method of Estimating HDI

For the estimation of HDI, the following steps have been followed:

- As a first step, a minimum and maximum value has to be set for each of the above indicators to transform them into indices lying between zero and one. For this purpose, the observed minimum and maximum figures for each of the indicators will be taken. Since the geometric mean has to be calculated, in the case of a positive indicator, the minimum value would be taken as 10 per cent less than the observed minimum value in the district. Similarly, in the case of a negative indicator, the maximum value would be taken as 10 per cent more than the observed maximum value.

- The index value (in the case of a positive indicator) is calculated using the formula:

  Index Value = (Actual Value – Min. Value) / (Max.Value – Min.Value)

  Example: Calculations will be based on highest values being assigned the highest ranks

- The index value (in the case of a negative indicator) is calculated by using the formula:

  Index Value = (Max. Value – Actual Value) / (Max.Value – Min.Value)

  However, for per capita income, first convert the actual per capita income, the minimum per capita income and maximum per capita income into natural log values, before converting into the index.

- For computing sectoral indices (health, education and standard of living), geometric mean is used and the method of calculation is as below. Thus, there will be three indices; one for standard of living, another for health and the last one for education.

  Sectoral Index = If I_1. I_2..... I_n are the n indices for a particular sector, then the geometric mean for the sector = $(I_1 \times I_2 \times ..... I_n)^{(1/n)}$.

- To compute HDI, aggregate the three sectoral indices using geometric mean with the following formula-

  HDI= $(SI_l \times SI_h \times SI_e)^{(1/3)}$; where SI_l is the sectoral index for living standard, SI_h is the sectoral index for health and SI_e is the sectoral index for education.

Method

GII calculation method has been presented below:

1. Aggregating across dimensions within each gender group using geometric mean.

2. Aggregating across gender group using a harmonic mean.

$$HARM(G_F, G_M) = \left[\frac{(G_F)^{-1} + (G_M)^{-1}}{2} \right]^{-1}$$

3. Calculating the geometric mean of the arithmetic means of the each indicator.

$$G_{\overline{F},\overline{M}} = \sqrt[3]{\overline{health}.\overline{empowerment}.\overline{LFPR}}$$

4. Calculating the GII by comparing the equally distributed gender index to the reference standard. The GII value ranges from zero (no gender inequality across dimensions) to one (total inequality across dimensions).

$$GII = 1 - \frac{HARM(G_F, G_M)}{G_{\overline{F},\overline{M}}}$$

Computation of Child Development Index

- The set of indicators used are both positive and negative in nature.

- The index value (in the case of a positive indicator) is calculated using the formula:

  Index Value = (Actual Value – Min. Value) / (Max.Value – Min.Value)

- The index values for negative indicators is calculated using the following formula:

  Index Value = (Max. Value – Actual Value) / (Max.Value – Min.Value)

- The index values for each of the indicators would range between 0 and 1—0 indicating the lowest ranking for the district and 1 indicating the highest.

In the context of CDI, higher value indicates better child development.

Computation of Food Security Index

- The indicators are broadly categorised under the three parameters: availability, accessibility and absorption.

- The data collected for the above indicators are used for calculating the index values. This helps in making the values unit-less and would allow summation of the index values of all indicators.

- The index values are calculated for each of the indicators, after identifying whether they are positive or negative. This is done to make the index values unidirectional.

- The index value (in the case of a positive indicator) is calculated using the formula:

Index Value = (Actual Value – Min. Value) / (Max.Value – Min.Value)

Example: calculations are based on highest values being assigned the highest ranks.

- The index value (in the case of a negative indicator) is calculated by using the formula:

Index Value = (Max. Value – Actual Value) / (Max.Value – Min.Value)

- The index value for each of the indicators ranges between 0 and 1—0 indicating the lowest and 1 implying the highest ranking of the district.

- The consolidated index for each of the parameters/sectors/dimensions is the average index value of all the indicators.

- The composite index is average of the indicators of all three parameters—availability, accessibility and absorption. This is used to assign ranks for the districts.

Indicators	MMR	Institutional Deliveries	Male Literacy	Female Literacy	Male Worker Participation Rate	Female Worker Participation Rate	Male Agri. Wage Rate	Female Agri. Wage Rate	Male Elected Representatives	Female Elected Body Representative	% of Male 0-6 Age Group	% of Female 0-6 Age Group
Source	Health Dept.	Health Dept.	Census	Census	Census	Census	SEA report of Agri Dept.	SEA report of Agri Dept	RD&PR Dept.	RD&PR Dept.	Census	Census
Unit	Rate	%	%	%	%	%	₹	₹	%	%	%	%
Year	2013-14	2013-14	2011	2011	2011	2011	2011-12	2011-12	2011	2011	2011	2011
Ariyalur	61	100	81.2	61.7	56.7	38.7	328.68	90.76	77	33	52.7	47.3
Chennai	33	100	93.7	86.6	58.6	19.4			64.81	35.19	51.3	48.7
Coimbatore	58	99.6	89.1	78.9	62.6	28	324.24	116.86	64.95	35.05	51.1	48.9
Cuddalore	89	100	85.9	70.1	57.1	32.5	238.93	105.26	61.55	38.45	52.7	47.3
Dharmapuri	65	99.8	76.9	59.8	57.6	41.7	244.58	96.17	66.7	33.3	52.3	47.7
Dindigul	81	100	84.2	68.3	61.6	40.8	204.97	115.17	63	37	51.7	48.3
Erode	64	100	80.4	64.7	64.8	41.3	283.65	124.24	63.33	36.67	51.2	48.8
Kancheepuram	79	100	89.9	79	58.7	16.4	188.54	87.80	41.45	58.55	51.1	48.9
Kanyakumari	30	100	93.6	89.9	56.6	16.42	562.96	215.17	63.79	36.21	50.9	49.1
Karur	98	99.9	84.5	66.9	62.3	40	199.94	115.62	58.93	41.07	51.6	48.4
Krishnagiri	76	99.3	78.7	63.9	58.5	34.38	280.61	103.71	63	37	51.9	48.1
Madurai	120	100	89.7	77.2	59.1	29.9	247.33	103.41	65.22	34.78	51.8	48.2
Nagapattiam	88	100	89.8	77.6	57.8	25.8	262.08	101.66	63.69	36.31	51	49
Nammakkal	63	100	82.6	66.6	61.1	42.8	245.18	124.34	62	38	52.3	47.7
Perambalur	73	100	82.9	65.9	57.6	48.4	263.49	155.94	61	39	52.3	47.7
Pudukottai	82	100	85.6	69	58.7	35.6	315.57	130.14	64.06	35.94	51.51	49
Ramanathapuram	100	99.6	87.8	73.5	57.5	31.3	198.71	140.92	63.82	36.18	51	49
Salem	67	99.9	80.2	65.2	60.8	35.9	305.05	258.11	68.3	31.7	52.2	47.8
Sivaganga	80	100	87.9	71.9	58.5	34.14	464.86	122.11	58.51	41.49	51	49
Thanjavur	49	100	89	76.5	57.6	24	251.79	114.85	63	37	51.1	48.9
The Nilgiris	39	99.9	91.7	79	58.9	36.7	197.75	93.26	70	30	50.4	49.6
Theni	78	99.8	85	69.5	59	35.91	307.44	132.43	59.17	40.83	51.7	48.3
Thiruvallur	80	100	89.7	78.3	58.8	23.5	189.13	93.75	62	38	51.4	48.6
Thiruvarur	110	99.8	89.1	76.7	59.9	26.7	260.94	117.42	60	40	51.1	48.9
Tiruvannamalai	60	99.5	83.1	65.3	59.8	40.6	267.85	85.12	66.5	33.5	51.8	48.2
Thoothukudi	100	99.9	91.1	81.3	58.2	27.6	248.36	134.90	65	35	50.9	49.1
Tirunelveli	91	100	89.2	76	57.6	36	340.06	149.47	63.1	36.9	51	49
Tiruppur	73	99.9	85.5	71.8	65.8	36.2	248.36	114.02	63.12	36.88	51.2	48.8
Trichy	89	99.9	89.7	76.9	58.4	31	247.36	113.81	63	37	51.4	48.6
Vellore	66	99.8	86.5	74.9	57.3	28.6	187.90	95.16	61.21	38.79	51.4	48.6
Villupuram	56	100	80.5	63.2	58.4	39.9	230.07	74.88	63	37	51.5	48.5
Virudhunagar	63	99.9	87.7	72.7	59.8	38.1	244.23	106.46	34	66	51.1	48.9

Annexure Table A-2.2

a. HDI Index: Data

Indicators	Per Capita Income	Life Expectancy at Birth	Literacy Rate	Gross Enrolment in Primary	Gross Enrolment in Secondary
Source	DOES	SPC	Census	Education Department	Education Department
Unit	Rs.	Age	%	Rate	Rate
Year	2011-12	2011	2011	2013-14	2013-14
Ariyalur	19467	72.6	71.3	99.14	95.64
Chennai	66240	78.6	90.2	101.35	88.39
Coimbatore	77975	76.6	84	102.45	92.44
Cuddalore	56315	74	78	102.04	98.76
Dharmapuri	56262	72.6	68.5	102.09	107.7
Dindigul	56376	73.6	76.3	102.5	92.52
Erode	75670	73.7	72.6	102.37	70.08
Kancheepuram	92713	75.2	84.5	102.58	90.63
Kanyakumari	96070	77.7	91.7	102.52	95.53
Karur	71795	71.7	75.6	102.32	84.9
Krishnagiri	69318	76.5	74.5	102.26	99.56
Madurai	67258	70.12	83.5	102.57	97.22
Nagapattiam	41208	70	83.6	102.54	103.52
Nammakkal	68213	74.2	74.6	102.6	95.92
Perambalur	24256	72.6	74.3	102.9	102.52
Pudukottai	43890	72.5	77.2	102.84	95.75
Ramanathapuram	44707	72.7	80.7	102.93	95.54
Salem	58623	73.3	72.9	102.29	91.45
Sivaganga	50466	72.3	79.9	102.44	97.73
Thanjavur	48284	71.2	82.6	102.69	99.91
The Nilgiris	51738	68.95	85.2	103.13	99.47
Theni	39856	69	77.3	102.16	98.38
Thiruvallur	83594	74.1	84	102.66	89.83
Thiruvarur	34727	71	82.9	102.79	97.86
Tiruvannamalai	41569	73.3	74.2	101.72	88.78
Thoothukudi	74933	76.6	86.2	102.58	94.35
Tirunelveli	61899	76.2	82.5	102.55	98.39
Tiruppur	88549	68.1	78.8	98.79	95.31
Trichy	75393	72.7	83.2	102.44	99.01
Vellore	63185	74.8	79.2	102.51	89.95
Villupuram	35295	74.5	71.9	102.27	87.88
Virudhunagar	87361	76	80.2	102.53	98.92

Annexure Table A-2.2

b. HDI Index: Rank

District	HDI Index				Rank
	Living Standard Index	Health Index	Education Index	Overall Index	
Ariyalur	0.062	0.653	0.552	0.282	32
Chennai	0.782	1.000	0.778	0.847	4
Coimbatore	0.877	0.884	0.775	0.844	6
Cuddalore	0.686	0.734	0.738	0.719	13
Dharmapuri	0.686	0.653	0.596	0.644	21
Dindigul	0.687	0.711	0.675	0.691	14
Erode	0.860	0.717	0.378	0.616	25
Kancheepuram	0.979	0.804	0.767	0.845	5
Kanyakumari	1.000	0.948	0.886	0.944	1
Karur	0.829	0.601	0.598	0.668	18
Krishnagiri	0.808	0.879	0.690	0.788	9
Madurai	0.790	0.510	0.812	0.689	15
Nagapattiam	0.503	0.503	0.859	0.601	26
Nammakkal	0.799	0.746	0.673	0.738	12
Perambalur	0.191	0.653	0.715	0.447	31
Pudukottai	0.540	0.648	0.719	0.631	22
Ramanathapuram	0.550	0.659	0.769	0.653	20
Salem	0.710	0.694	0.607	0.669	17
Sivaganga	0.622	0.636	0.766	0.671	16
Thanjavur	0.596	0.573	0.823	0.655	19
The Nilgiris	0.636	0.443	0.861	0.624	24
Theni	0.483	0.445	0.727	0.539	30
Thiruvallur	0.918	0.740	0.755	0.801	8
Thiruvarur	0.402	0.561	0.813	0.568	28
Tiruvannamalai	0.508	0.694	0.601	0.596	27
Thoothukudi	0.854	0.884	0.820	0.852	3
Tirunelveli	0.742	0.861	0.808	0.802	7
Tiruppur	0.952	0.393	0.659	0.627	23
Trichy	0.858	0.659	0.819	0.774	10
Vellore	0.754	0.780	0.695	0.742	11
Villupuram	0.412	0.763	0.563	0.561	29
Virudhunagar	0.944	0.850	0.780	0.855	2

Annexure Table A-2.3

a. Gender Inequality Index: Data

Indicators	MMR	Institu-tional Deliveries	Male Literacy	Female Literacy	Male Worker Partici-pation Rate	Female Worker Partici-pation Rate	Male Agricul-ture Wage Rate	Female Agricul-ture Wage Rate	Male Elected Represen-tatives	Female Elected Body Represen-tative	% of Male 0-6 Age Group	% of Female 0-6 Age Group
Source	Health Dept	Health Dept	Census	Census	Census	Census	SEA report of Agricul-ture Dept	SEA report of Agricul-ture Dept	RD&PR Dept	RD&PR Dept	Census	Census
Unit	Rate	%	%	%	%	%	Rs	Rs	%	%	%	%
Year	2013-14	2013-14	2011	2011	2011	2011	2011-12	2011-12	2011	2011	2011	2011
Ariyalur	61	100	81.2	61.7	56.7	38.7	328.68	90.76	77	33	52.7	47.3
Chennai	33	100	93.7	86.6	58.6	19.4			64.81	35.19	51.3	48.7
Coimbatore	58	99.6	89.1	78.9	62.6	28	324.24	116.86	64.95	35.05	51.1	48.9
Cuddalore	89	100	85.9	70.1	57.1	32.5	238.93	105.26	61.55	38.45	52.7	47.3
Dharmapuri	65	99.8	76.9	59.8	57.6	41.7	244.58	96.17	66.7	33.3	52.3	47.7
Dindigul	81	100	84.2	68.3	61.6	40.8	204.97	115.17	63	37	51.7	48.3
Erode	64	100	80.4	64.7	64.8	41.3	283.65	124.24	63.33	36.67	51.2	48.8
Kancheepuram	79	100	89.9	79	58.7	16.4	188.54	87.80	41.45	58.55	51.1	48.9
Kanyakumari	30	100	93.6	89.9	56.6	16.42	562.96	215.17	63.79	36.21	50.9	49.1
Karur	98	99.9	84.5	66.9	62.3	40	199.94	115.62	58.93	41.07	51.6	48.4
Krishnagiri	76	99.3	78.7	63.9	58.5	34.38	280.61	103.71	63	37	51.9	48.1
Madurai	120	100	89.7	77.2	59.1	29.9	247.33	103.41	65.22	34.78	51.8	48.2
Nagapattiam	88	100	89.8	77.6	57.8	25.8	262.08	101.66	63.69	36.31	51	49
Nammakkal	63	100	82.6	66.6	61.1	42.8	245.18	124.34	62	38	52.3	47.7
Perambalur	73	100	82.9	65.9	57.6	48.4	263.49	155.94	61	39	52.3	47.7
Pudukottai	82	100	85.6	69	58.7	35.6	315.57	130.14	64.06	35.94	51.51	49
Ramanathapuram	100	99.6	87.8	73.5	57.5	31.3	198.71	140.92	63.82	36.18	51	49
Salem	67	99.9	80.2	65.2	60.8	35.9	305.05	258.11	68.3	31.7	52.2	47.8
Sivaganga	80	100	87.9	71.9	58.5	34.14	464.86	122.11	58.51	41.49	51	49
Thanjavur	49	100	89	76.5	57.6	24	251.79	114.85	63	37	51.1	48.9
The Nilgiris	39	99.9	91.7	79	58.9	36.7	197.75	93.26	70	30	50.4	49.6
Theni	78	99.8	85	69.5	59	35.91	307.44	132.43	59.17	40.83	51.7	48.3
Thiruvallur	80	100	89.7	78.3	58.8	23.5	189.13	93.75	62	38	51.4	48.6
Thiruvarur	110	99.8	89.1	76.7	59.9	26.7	260.94	117.42	60	40	51.1	48.9
Tiruvannamalai	60	99.5	83.1	65.3	59.8	40.6	267.85	85.12	66.5	33.5	51.8	48.2
Thoothukudi	100	99.9	91.1	81.3	58.2	27.6	248.36	134.90	65	35	50.9	49.1
Tirunelveli	91	100	89.2	76	57.6	36	340.06	149.47	63.1	36.9	51	49
Tiruppur	73	99.9	85.5	71.8	65.8	36.2	248.36	114.02	63.12	36.88	51.2	48.8
Trichy	89	99.9	89.7	76.9	58.4	31	247.36	113.81	63	37	51.4	48.6
Vellore	66	99.8	86.5	74.9	57.3	28.6	187.90	95.16	61.21	38.79	51.4	48.6
Villupuram	56	100	80.5	63.2	58.4	39.9	230.07	74.88	63	37	51.5	48.5
Virudhunagar	63	99.9	87.7	72.7	59.8	38.1	244.23	106.46	34	66	51.1	48.9

Annexure Table A-2.3

b. Gender Inequality Index: Rank

District	Fhlt_ ind	Mhlt_ ind	Femp_ ind	Memp_ ind	Flf_ ind	Mlf_ ind	GF	GM	GFM	Health Bar	Emp Bar	LF BAR	GFM Bar
Ariyalur	0.405	1	0.458	0.691	0.218	0.479	0.343	0.692	0.459	0.702	0.6	0.349	0.520
Chennai	0.550	1	0.529	0.678	0.194	0.586	0.384	0.735	0.504	0.775	0.6	0.390	0.567
Coimbatore	0.414	1	0.513	0.666	0.269	0.497	0.386	0.692	0.495	0.707	0.6	0.383	0.543
Cuddalore	0.335	1	0.503	0.653	0.254	0.318	0.350	0.592	0.440	0.668	0.6	0.286	0.480
Dharmapuri	0.392	1	0.456	0.645	0.251	0.332	0.355	0.598	0.446	0.696	0.6	0.292	0.482
Dindigul	0.351	1	0.496	0.650	0.320	0.237	0.382	0.536	0.446	0.676	0.6	0.278	0.476
Erode	0.395	1	0.487	0.639	0.351	0.434	0.407	0.652	0.501	0.698	0.6	0.392	0.536
Kancheepuram	0.356	1	0.609	0.575	0.132	0.170	0.306	0.461	0.368	0.678	0.6	0.151	0.393
Kanyakumari	0.577	1	0.543	0.672	0.357	0.752	0.482	0.797	0.600	0.789	0.6	0.555	0.643
Karur	0.319	1	0.510	0.636	0.318	0.221	0.373	0.520	0.434	0.660	0.6	0.269	0.467
Krishnagiri	0.361	1	0.484	0.636	0.256	0.407	0.355	0.637	0.456	0.681	0.6	0.331	0.502
Madurai	0.289	1	0.506	0.672	0.238	0.343	0.326	0.613	0.426	0.644	0.6	0.290	0.479
Nagapattiam	0.337	1	0.517	0.663	0.215	0.369	0.335	0.626	0.436	0.669	0.6	0.292	0.487
Nammakkal	0.398	1	0.494	0.645	0.357	0.344	0.413	0.605	0.491	0.699	0.6	0.351	0.519
Perambalur	0.370	1	0.497	0.642	0.474	0.372	0.443	0.620	0.517	0.685	0.6	0.423	0.548
Pudukottai	0.349	1	0.495	0.656	0.342	0.467	0.390	0.674	0.494	0.675	0.6	0.405	0.540
Ramanathapuram	0.316	1	0.507	0.659	0.347	0.208	0.382	0.515	0.439	0.658	0.6	0.278	0.474
Salem	0.386	1	0.462	0.659	0.599	0.458	0.475	0.671	0.556	0.693	0.6	0.529	0.590
Sivaganga	0.354	1	0.527	0.640	0.313	0.663	0.388	0.751	0.512	0.677	0.6	0.488	0.578
Thanjavur	0.452	1	0.517	0.659	0.244	0.348	0.385	0.612	0.473	0.726	0.6	0.296	0.502
The Nilgiris	0.506	1	0.490	0.686	0.223	0.207	0.381	0.522	0.440	0.753	0.6	0.215	0.457
Theni	0.358	1	0.516	0.638	0.350	0.455	0.401	0.662	0.500	0.679	0.6	0.403	0.540
Thiruvallur	0.354	1	0.525	0.659	0.180	0.173	0.322	0.485	0.387	0.677	0.6	0.177	0.414
Thiruvarur	0.301	1	0.531	0.649	0.265	0.374	0.349	0.624	0.447	0.651	0.6	0.319	0.497
Tiruvannamalai	0.407	1	0.472	0.659	0.194	0.387	0.334	0.634	0.438	0.704	0.6	0.291	0.487
Thoothukudi	0.316	1	0.519	0.670	0.313	0.342	0.371	0.612	0.462	0.658	0.6	0.327	0.504
Tirunelveli	0.331	1	0.516	0.660	0.394	0.500	0.407	0.691	0.512	0.666	0.6	0.447	0.559
Tiruppur	0.370	1	0.506	0.651	0.297	0.364	0.382	0.619	0.472	0.685	0.6	0.331	0.508
Trichy	0.335	1	0.517	0.662	0.275	0.341	0.362	0.609	0.454	0.668	0.6	0.308	0.495
Vellore	0.389	1	0.521	0.648	0.204	0.165	0.346	0.475	0.400	0.694	0.6	0.185	0.422
Villupuram	0.423	1	0.484	0.639	0.125	0.301	0.295	0.577	0.390	0.711	0.6	0.213	0.440
Virudhunagar	0.398	1	0.617	0.534	0.279	0.338	0.409	0.565	0.475	0.699	0.6	0.309	0.499

Annexure Table A-2.4

a. CDI Index: Data

Indicators	Under 5MR	Malnourish-ment	Enrolment in Primary	Enrolment in Secondary	Juvenile Sex Ratio	Percentage of Children Never Enrolled in Schools	Transition Rate from Primary to Upper Primary	Transition Rate from Upper Primary to Secondary
	Negative	Negative	Positive	Positive	Positive	Negative	Positive	Positive
Source	Health Dept	CDPO	Education Dept	Education Dept	Census	Education Dept	Education Dept	Education Dept
Unit	Rate	Rate	No.	No.	No.	%	Rate	Rate
Year	2012	2013	2013-14	2013-14	2011	2013-14	2013-14	2013-14
Ariyalur	24.28	18.91	99.14	95.64	897	0	97.82	98.44
Chennai	16.1	11.64	101.35	88.39	950	0	99.85	88.14
Coimbatore	17.6	11.48	102.45	92.44	956	0.04	99.83	97.3
Cuddalore	22.8	27.06	102.04	98.76	896	0.01	99.83	95.72
Dharmapuri	26.8	25.04	102.09	107.7	913	0.08	99.83	95.99
Dindigul	22.6	19.54	102.5	92.52	934	0.02	99.85	90.07
Erode	19.5	17.48	102.37	70.08	953	0.01	99.85	94.33
Kancheepuram	20.8	10.93	102.58	90.63	959	0.4	99.8	99.67
Kanyakumari	7	1.95	102.52	95.53	964	0	99.8	99.87
Karur	25.9	17.78	102.32	84.9	939	0.47	99.8	98.31
Krishnagiri	27.5	23.13	102.26	99.56	926	0.8	99.85	91.21
Madurai	28.3	15.89	102.57	97.22	932	0	99.83	94.29
Nagapattiam	27	25.24	102.54	103.52	959	0	99.78	91.46
Nammakkal	24.5	10.99	102.6	95.92	914	0.04	99.78	101.17
Perambalur	26.1	20.87	102.9	102.52	913	0	99.73	97.06
Pudukottai	23.3	26.31	102.84	95.75	960	0.3	99.78	92.8
Ramanathapuram	24	32.08	102.93	95.54	961	0.52	99.8	88.45
Salem	29.5	22.03	102.29	91.45	916	0.09	99.78	91.54
Sivaganga	26.9	10.68	102.44	97.73	960	0	99.83	92.31
Thanjavur	21.5	21.58	102.69	99.91	957	0	99.83	94.87
The Nilgiris	18.1	23.08	103.13	99.47	985	0.51	99.8	96.39
Theni	31.1	10.89	102.16	98.38	934	0	99.8	93.52
Thiruvallur	20.9	12.5	102.66	89.83	946	0.36	99.85	96.46
Thiruvarur	21.7	21.48	102.79	97.86	958	0.1	99.8	92.41
Tiruvannamalai	29.4	29.58	101.72	88.78	930	0.7	99.83	93.86
Thoothukudi	21.5	13.75	102.58	94.35	963	0.01	99.78	93
Tirunelveli	26.1	19.21	102.55	98.39	960	0.01	99.78	87.96
Tiruppur	0	10.44	98.79	95.31	952	0.2	99.48	94.15
Trichy	26.2	21.01	102.44	99.01	947	0	99.8	100.27
Vellore	30.8	23.11	102.51	89.95	944	0.01	99.78	82.77
Villupuram	26.7	31.04	102.27	87.88	941	0.008	99.75	92.49
Virudhunagar	26.7	29.1	102.53	98.92	955	0	99.85	98.27

b. CDI Indices

Districts	CDI Indices							
	Under 5MR	*Malnourish-ment*	*Enrolment in Primary*	*Enrolment in Secondary*	*Juvenile Sex Ratio*	*Percentage of Children Never Enrolled in Schools*	*Transition Rate from Primary to Upper Primacy*	*Transition Rate from Upper Primary to Secondary*
Ariyalur	0.219	0.437	0.081	0.679	0.011	1.000	0.000	0.852
Chennai	0.482	0.678	0.590	0.487	0.607	1.000	1.000	0.292
Coimbatore	0.434	0.684	0.843	0.594	0.674	0.950	0.990	0.790
Cuddalore	0.267	0.167	0.749	0.762	0.000	0.988	0.990	0.704
Dharmapuri	0.138	0.234	0.760	1.000	0.191	0.900	0.990	0.718
Dindigul	0.273	0.416	0.855	0.596	0.427	0.975	1.000	0.397
Erode	0.373	0.485	0.825	0.000	0.640	0.988	1.000	0.628
Kancheepuram	0.331	0.702	0.873	0.546	0.708	0.500	0.975	0.918
Kanyakumari	0.775	1.000	0.859	0.677	0.764	1.000	0.975	0.929
Karur	0.167	0.475	0.813	0.394	0.483	0.413	0.975	0.845
Krishnagiri	0.116	0.297	0.800	0.784	0.337	0.000	1.000	0.459
Madurai	0.090	0.537	0.871	0.721	0.404	1.000	0.990	0.626
Nagapattiam	0.132	0.227	0.864	0.889	0.708	1.000	0.966	0.472
Nammakkal	0.212	0.700	0.878	0.687	0.202	0.950	0.966	1.000
Perambalur	0.161	0.372	0.947	0.862	0.191	1.000	0.941	0.777
Pudukottai	0.251	0.192	0.933	0.682	0.719	0.625	0.966	0.545
Ramanathapuram	0.228	0.000	0.954	0.677	0.730	0.350	0.975	0.309
Salem	0.051	0.334	0.806	0.568	0.225	0.888	0.966	0.477
Sivaganga	0.135	0.710	0.841	0.735	0.719	1.000	0.990	0.518
Thanjavur	0.309	0.348	0.899	0.793	0.685	1.000	0.990	0.658
The Nilgiris	0.418	0.299	1.000	0.781	1.000	0.363	0.975	0.740
Theni	0.000	0.703	0.776	0.752	0.427	1.000	0.975	0.584
Thiruvallur	0.328	0.650	0.892	0.525	0.562	0.550	1.000	0.744
Thiruvarur	0.302	0.352	0.922	0.738	0.697	0.875	0.975	0.524
Tiruvannamalai	0.055	0.083	0.675	0.497	0.382	0.125	0.990	0.603
Thoothukudi	0.309	0.608	0.873	0.645	0.753	0.988	0.966	0.556
Tirunelveli	0.161	0.427	0.866	0.753	0.719	0.988	0.966	0.282
Tiruppur	1.000	0.718	0.000	0.671	0.629	0.750	0.818	0.618
Trichy	0.158	0.367	0.841	0.769	0.573	1.000	0.975	0.951
Vellore	0.010	0.298	0.857	0.528	0.539	0.988	0.966	0.000
Villupuram	0.141	0.035	0.802	0.473	0.506	0.990	0.951	0.528
Virudhunagar	0.141	0.099	0.862	0.767	0.663	1.000	1.000	0.842

Annexure Table A-2.4

c. CDI Values and Ranks District-Wise

District	CDI Value	CDI Rank
Kanyakumari	0.872	1
Coimbatore	0.745	2
Thoothukudi	0.712	3
Thanjavur	0.71	4
Sivaganga	0.706	5
Trichy	0.704	6
Nammakkal	0.699	7
The Nilgiris	0.697	8
Kancheepuram	0.694	9
Thiruvarur	0.673	10
Virudhunagar	0.672	11
Nagapattiam	0.657	12
Perambalur	0.656	13
Thiruvallur	0.656	14
Madurai	0.655	15
Theni	0.652	16
Tiruppur	0.651	17
Tirunelveli	0.645	18
Chennai	0.642	19
Dindigul	0.617	20
Erode	0.617	21
Dharmapuri	0.616	22
Pudukottai	0.614	23
Cuddalore	0.578	24
Karur	0.571	25
Villupuram	0.553	26
Salem	0.539	27
Ramanathapuram	0.528	28
Vellore	0.523	29
Krishnagiri	0.474	30
Tiruvannamalai	0.426	31
Ariyalur	0.41	32

Annexure Table A-2.5

a. MPI Index and Rank: District-wise

District	MPI Index	MPI Rank
Kancheepuram	0.34	1
Chennai	0.34	2
Cuddalore	0.38	3
Coimbatore	0.41	4
Nagapattiam	0.41	5
Tiruppur	0.42	6
Vellore	0.43	7
Madurai	0.45	8
Thiruvallur	0.46	9
Tirunelveli	0.46	10
Trichy	0.47	11
Thoothukudi	0.49	12
Kanyakumari	0.5	13
Pudukottai	0.51	14
The Nilgiris	0.52	15
Erode	0.52	16
Salem	0.53	17
Thiruvarur	0.53	18
Tiruvannamalai	0.53	19
Sivaganga	0.55	20
Villupuram	0.58	21
Thanjavur	0.59	22
Dindigul	0.59	23
Theni	0.6	24
Nammakkal	0.6	25
Krishnagiri	0.6	26
Karur	0.61	27
Ariyalur	0.62	28
Virudhunagar	0.62	29
Ramanathapuram	0.63	30
Perambalur	0.63	31
Dharmapuri	0.7	32

Annexure Table A-2.5

b. MPI Index: Data

Indicators	IMR	Higher Order Birth Rate	Dropout in Primary	Dropout in Secondary	Cooking Fuel (LPG, Kerosene, Electric and Biogas)	Access to Safe Drinking Water within Premises	Access to Toilet within Premises
	Negative	Positive	Negative	Negative	Positive	Positive	Positive
Source	Health Dept	Health Dept	Education Dept	Education Dept	Census of India	Census of India	Census of India
Unit	%		Rate	Rate	%	%	%
Year	2013-14	2013-14	2013-14	2013-14	2011	2011	2011
Ariyalur	9	13.40	1.07	8.33	20.80	66.43	18.10
Chennai	7	2.60	1.02	8.53	96.60	97.57	95.60
Coimbatore	6	3.20	1.22	8.22	81.00	95.67	66.70
Cuddalore	12	10.60	0.40	6.75	41.00	81.07	36.10
Dharmapuri	20	13.40	1.86	7.65	30.90	76.69	19.00
Dindigul	13	8.60	1.28	7.92	43.10	80.22	33.30
Erode	7	3.70	1.18	8.51	66.30	88.21	49.00
Kancheepuram	10	6.20	0.43	7.48	72.50	86.22	65.50
Kanyakumari	9	3.40	0.44	8.74	43.40	77.32	87.50
Karur	18	9.00	1.23	8.14	54.80	79.64	41.20
Krishnagiri	17	12.00	1.45	7.93	38.00	83.97	33.00
Madurai	12	7.20	0.73	8.40	63.70	91.21	59.20
Nagapattiam	14	11.30	0.43	7.10	36.90	84.34	39.50
Nammakkal	14	7.70	1.54	8.41	63.30	84.63	40.70
Perambalur	15	12.80	1.23	7.69	35.90	61.44	22.20
Pudukottai	12	12.40	0.70	7.64	23.60	77.48	28.00
Ramanathapuram	13	10.30	0.90	8.14	34.70	59.08	36.60
Salem	12	10.40	1.55	7.94	56.60	89.09	35.00
Sivaganga	13	9.00	0.48	8.39	37.40	76.74	40.70
Thanjavur	10	9.90	1.03	7.92	40.10	55.36	45.10
The Nilgiris	11	5.90	1.05	8.02	52.50	84.94	51.90
Theni	17	6.80	1.15	8.09	53.50	87.27	39.30
Thiruvallur	12	6.50	1.21	7.82	75.90	81.97	67.90
Thiruvarur	11	8.20	0.50	7.42	34.80	62.89	39.70
Tiruvannamalai	15	14.50	0.98	7.09	33.00	66.88	22.80
Thoothukudi	11	10.30	0.93	8.60	49.90	88.75	50.00
Tirunelveli	14	9.40	0.35	8.36	51.80	88.84	47.60
Tiruppur	7	3.70	0.82	8.30	77.60	93.09	57.20
Trichy	12	9.60	0.55	8.56	55.70	87.34	48.50
Vellore	11	13.40	0.89	7.42	48.90	75.84	41.10
Villupuram	17	13.50	0.98	7.34	31.30	69.97	21.10
Virudhunagar	12	6.70	0.94	8.62	53.50	74.49	30.90

Annexure Table A-2.5

c. MPI Indices

Districts	IMR	Higher Order Birth Rate	Dropout in Primary	Dropout in Secondary	Cooking Fuel (LPG, Kerosene, Electric and Biogas)	Access to Safe Drinking Water	Access to Toilet within Premises
Ariyalur	0.786	0.908	0.523	0.206	0.000	0.262	0.000
Chennai	0.929	0.000	0.556	0.106	1.000	1.000	1.000
Coimbatore	1.000	0.050	0.424	0.261	0.794	0.955	0.627
Cuddalore	0.571	0.672	0.967	1.000	0.266	0.609	0.232
Dharmapuri	0.000	0.908	0.000	0.548	0.133	0.505	0.012
Dindigul	0.500	0.504	0.384	0.412	0.294	0.589	0.196
Erode	0.929	0.092	0.450	0.116	0.600	0.778	0.399
Kancheepuram	0.714	0.303	0.947	0.633	0.682	0.731	0.612
Kanyakumari	0.786	0.067	0.940	0.000	0.298	0.520	0.895
Karur	0.143	0.538	0.417	0.302	0.449	0.575	0.298
Krishnagiri	0.214	0.790	0.272	0.407	0.227	0.678	0.192
Madurai	0.571	0.387	0.748	0.171	0.566	0.849	0.530
Nagapattiam	0.429	0.731	0.947	0.824	0.212	0.687	0.276
Nammakkal	0.429	0.429	0.212	0.166	0.561	0.693	0.292
Perambalur	0.357	0.857	0.417	0.528	0.199	0.144	0.053
Pudukottai	0.571	0.824	0.768	0.553	0.037	0.524	0.128
Ramanathapuram	0.500	0.647	0.636	0.302	0.183	0.088	0.239
Salem	0.571	0.655	0.205	0.402	0.472	0.799	0.218
Sivaganga	0.500	0.538	0.914	0.176	0.219	0.506	0.292
Thanjavur	0.714	0.613	0.550	0.412	0.255	0.000	0.348
The Nilgiris	0.643	0.277	0.536	0.362	0.418	0.701	0.436
Theni	0.214	0.353	0.470	0.327	0.431	0.756	0.274
Thiruvallur	0.571	0.328	0.430	0.462	0.727	0.630	0.643
Thiruvarur	0.643	0.471	0.901	0.663	0.185	0.179	0.279
Tiruvannamalai	0.357	1.000	0.583	0.829	0.161	0.273	0.061
Thoothukudi	0.643	0.647	0.616	0.070	0.384	0.791	0.412
Tirunelveli	0.429	0.571	1.000	0.191	0.409	0.793	0.381
Tiruppur	0.929	0.092	0.689	0.221	0.749	0.894	0.505
Trichy	0.571	0.588	0.868	0.090	0.460	0.758	0.392
Vellore	0.643	0.908	0.642	0.663	0.371	0.485	0.297
Villupuram	0.214	0.916	0.583	0.704	0.139	0.346	0.039
Virudhunagar	0.571	0.345	0.609	0.060	0.431	0.453	0.165

Annexure Table A-2.6

a. Food Security Index: Data

Indicators	Per Capita Foodgrain Production	Leguminous Crop (Pulses) in GCA	Cropping Intensity	Irrigation Intensity	Percentage of BPL Families	U5MR	Malnourishment	Per Capita Income	% Noon-meal Beneficiaries	Offtake of Foodgrains in Districts	Percentage of Low Birth Weight (Less than 2.5 kg)	Foodgrains Allotment to Districts	Percentage of Offtake of Foodgrains to Total Allotment
Source	Agri. Dept	Agri Dept	Dept of Eco. and Statistics	Dept of Eco. and Statistics	RD&PR Dept	Health Dept	CDPO	DOES	SW Dept	TNCS	Health Dept	TNCS	TNCS
Unit	MT	% Area			%	Rate	%	₹	%	MT	%	MT	MT
Year	2011-12	2011-12	2011-12	2011-12	2003	2012	2013	2011-12	2013-14	2013	2013-14	2013	2013
Ariyalur	0.22	3.61	1.04	1.05	37	24.28	18.91	19467	80	55265	6.7	58049	95.20
Coimbatore	0.02	22.53	1.38	1.14	39.31	17.6	11.48	77975	61	165181	7.1	238130	69.37
Cuddalore	0.12	28.47	1.38	1.14	30.97	22.8	27.06	56315	78	152042	9.8	173751	87.51
Dharmapuri	0.17	26.68	1.27	1.11	44.5	26.8	25.04	56262	90	92318	13.2	103621	89.09
Dindigul	0.20	20.01	1.02	1.22	37.15	22.6	19.54	56376	71	120991	6.2	149615	80.87
Erode	0.10	11.06	1.08	1.11	30.97	19.5	17.48	75670	70	102280	13.2	155613	65.73
Kancheepuram	0.10	1.1	1.14	1	43.05	20.8	10.93	92713	75	138956	8.1	156104	89.02
Kanyakumari	0.05	3.86	1.12	1.25	28.84	7	1.95	96070	69	133088	6.8	138078	96.39
Karur	0.09	14.98	1.08	1.19	38	25.9	17.78	71795	79	55785	9.3	70289	79.37
Krishnagiri	0.13	27.77	1.14	1.07	39	27.5	23.13	69318	90	114500	15.5	122254	93.66
Madurai	0.12	8.97	1.06	1.17	33	28.3	15.89	67258	69	150613	9.8	196202	76.76
Nagapattiam	0.37	34.98	1.81	1.34	27.08	27	25.24	41208	81	108619	11	115071	94.39
Nammakkal	0.05	14.85	1.21	1.14	44	24.5	10.99	68213	74	78078	12.3	114767	68.03
Perambalur	0.52	1.11	1.04	0	39	26.1	20.87	24256	60	38615	13.4	42265	91.36
Pudukottai	0.23	2.63	1.04	1	45.54	23.3	26.31	43890	83	94090	9.1	104469	90.06
Ramanathapuram	0.33	2.95	1	0	43.82	24	32.08	44707	78	87360	10.4	95974	91.02
Salem	0.11	24.75	1.44	1.01	22	29.5	22.03	58623	76	165069	10	219372	75.25
Sivaganga	0.23	1.23	1.01	0	30	26.9	10.68	50466	75	88969	9.9	96422	92.27
Thanjavur	0.31	15.77	1.43	1.31	35	21.5	21.58	48284	78	155551	10.3	164114	94.78
The Nilgiris	0.00	0.47	1	0	34.79	18.1	23.08	51738	72	57993	25	66020	87.84
Theni	0.16	16.52	1.12	1	29.68	31.1	10.89	39856	71	86119	14.4	96503	89.24

Indicators	Per Capita Foodgrain Production	Leguminous Crop (Pulses) in GCA	Cropping Intensity	Irrigation Intensity	Percentage of BPL Families	U5MR	Malnourishment	Per Capita Income	% Noon-meal Beneficiaries	Offtake of Foodgrains in Districts	Percentage of Low Birth Weight (Less than 2.5 kg)	Foodgrains Allotment to Districts	Percentage of Offtake of Foodgrains to Total Allotment
Source	Agri. Dept	Agri. Dept	Dept of Eco. and Statistics	Dept of Eco. and Statistics	RD&PR Dept	Health Dept	CDPO	DOES	SW Dept	TNCS	Health Dept	TNCS	TNCS
Unit	MT	% Area			%	Rate	%	₹	%	MT	%	MT	MT
Year	2011-12	2011-12	2011-12	2011-12	2003	2012	2013	2011-12	2013-14	2013	2013-14	2013	2013
Thiruvallur	0.09	8.26	1.25	2.36	27.02	20.9	12.5	83594	76	116556	11.1	129942	89.70
Thiruvarur	0.65	33	1.82	1.31	35	21.7	21.48	34727	78	84435	6.3	89448	94.40
Tiruvannamalai	0.16	8.3	1.25	1.03	32.67	29.4	29.58	41569	85	155196	11.6	166643	93.13
Thoothukudi	0.16	54.95	1.02	1.27	23.41	21.5	13.75	74933	65	91531	8	116173	78.79
Tirunelveli	0.18	15.99	1.16	1.57	28.6	26.1	19.21	61899	66	176401	10.5	203764	86.57
Tiruppur	0.12	26.85	1.02	1.02	35.66	0	10.44	88549	72	113292	9.5	161903	69.98
Trichy	0.13	8.97	1.08	1.17	35	26.2	21.01	75393	80	147807	10.4	182899	80.81
Vellore	0.05	22.63	1.12	1	42	30.8	23.11	63185	80	232183	14.7	245699	94.50
Villupuram	0.16	11.53	1.07	1	42	26.7	31.04	35295	86	216968	10.6	233417	92.95
Virudhunagar	0.13	20.63	1.03	0	45	26.7	29.1	87361	68	103711	12.4	130183	79.67

Annexure Table A-2.6

b. FSI Index: Rank

District	Availability Index	Rank	Accessibility Index	Rank	Absorption Index	Rank	FSI	Rank
Ariyalur	0.222	23	0.454	18	0.454	11	0.377	17
Coimbatore	0.346	10	0.263	30	0.597	3	0.402	12
Cuddalore	0.411	5	0.528	12	0.344	20	0.428	9
Dharmapuri	0.386	8	0.566	7	0.277	24	0.409	11
Dindigul	0.302	12	0.382	27	0.472	7	0.385	15
Erode	0.229	21	0.347	28	0.433	12	0.336	26
Kancheepuram	0.190	27	0.568	6	0.555	4	0.438	8
Kanyakumari	0.204	26	0.667	2	0.814	1	0.562	2
Karur	0.252	18	0.482	15	0.414	13	0.382	16
Krishnagiri	0.331	11	0.676	1	0.258	26	0.422	10
Madurai	0.227	22	0.390	26	0.401	15	0.339	25
Nagapattiam	0.690	2	0.581	4	0.302	23	0.524	3
Nammakkal	0.270	16	0.303	29	0.459	10	0.344	24
Perambalur	0.215	25	0.261	31	0.325	21	0.267	30
Pudukottai	0.217	24	0.470	16	0.356	19	0.347	23
Ramanathapuram	0.138	29	0.448	21	0.271	25	0.286	28
Salem	0.395	7	0.468	17	0.322	22	0.395	14
Sivaganga	0.095	30	0.528	11	0.469	8	0.364	19
Thanjavur	0.459	3	0.539	9	0.408	14	0.469	7
The Nilgiris	0.000	31	0.445	22	0.233	30	0.226	31
Theni	0.278	15	0.437	23	0.362	18	0.359	21
Thiruvallur	0.397	6	0.640	3	0.498	6	0.511	4
Thiruvarur	0.788	1	0.491	14	0.460	9	0.580	1
Tiruvannamalai	0.283	13	0.575	5	0.223	31	0.360	20
Thoothukudi	0.452	4	0.451	20	0.520	5	0.474	6
Tirunelveli	0.356	9	0.451	19	0.381	16	0.396	13
Tiruppur	0.281	14	0.414	24	0.765	2	0.487	5
Trichy	0.237	20	0.530	10	0.362	17	0.377	18
Vellore	0.263	17	0.563	8	0.234	29	0.354	22
Villupuram	0.240	19	0.510	13	0.250	27	0.333	27
Virudhunagar	0.152	28	0.405	25	0.246	28	0.268	29

References

Drèze, Jean and Reetika Khera (2012). "Regional Patterns of Human and Child Deprivation in India", *Economic and Political Weekly* 47(39): 42-49.

Engelman, R. (2009). *The State of World Population 2009—Facing a Changing World: Women, Population and Climate*. UNFPA.

Jeyaranjan, J. (2011). "Women and Pro-poor Policies in Rural Tamil Nadu: An Examination of Practices and Responses", *Economic and Political Weekly* 46(43): 64-74.