CHAPTER IV

DEMOGRAPHY

HEALTH AND NUTRITION

CHAPTER

4

DEMOGRAPHY, HEALTH AND NUTRITION

Introduction

Public Investment in social sector, i.e., health and education could mainly enhance everyone's potential and might attenuate the effects of rising inequality. It would be possible to achieve substantial health gains particularly among people at the lowest rung of the society if the rising revenue was invested prudently for universalizing a core package of health care service for all that addresses the major causes of morbidity and mortality. Planners and Policy makers in developing countries like India have to take into account the ongoing demographic changes (number and age structure of the population) so that available human resources could optimally be utilized as agents of change and development to achieve improvement in quality of life.

Demography, health and nutrition are one among the important aspects of human development in any area, state or country. The main objective of development is to mend the quality of life of the society. Yet an analysis of the development process over the last four decades shows that one of the major causes for slow economic and social development in developing economies has been due to unplanned population growth. Population - its growth, composition, size, and quality play an important role in the process of development in any area. The hyper growth of population, in a poor economy, with limited resources and embryonic technology can be a liability. Whereas, when population is efficiently engaged, it will result as an asset and a resource to the State and Nation.

Good health is the basic objective of any development effort. The concept of human development as defined by UNDP rests on three pillars: knowledge, health and livelihood. Health of the people has been recognized as a valuable national resource and the government's endeavor has been to improve the same and enable them to contribute to the enhancement of the Nation's productivity.

Health was defined by World Health Organization (WHO) as a state of complete physical, mental and social well-being and not just avoidance of disease. Physical health implied the perfect functioning of the body (WHO 1948). It conceptualized health as a state in which every cell or organ is functioning at optimum capacity and is in perfect harmony with the rest of the body. Mental health implies not merely the absence of illness but the state of balance between the individuals (Sartorious, 1983). Social well-being implies the quality and quantity of interpersonal ties and the extent of involvement within the individual, between each individual and other members of the society. Thus, health is a multi-dimensional and a holistic concept involving the well-being of the whole community.

In this chapter we will analyze the changes in demography, health and nutritional pattern in the district and ways to improve the health status of the people.

Demographic Trends and Health Indicators

Population and Demographic Transition

Recently a growing literature has evolved, which contradicts the commonly accepted view regarding population that higher population growth is hindrance to development. There are positive as well as negative impacts of population growth on human development. There are many known arguments regarding the negative impact of population growth, which are known very well. One of the arguments of large population is that it increases the rate of technological progress. But, this could be only possible with proper schooling and health facilities available and made accessible to all. Anyhow the demographic dividend has a bearing on the economy and the society.

The population of Pudukkottai district was just 2.34 per cent of the total population of the State during 2001 and it decreased to 2.24 in 2011. In Pudukkottai district, Pudukkottai block had the highest population in the years 2001 and 2011. Likewise, Aranthangi, Thiruvarankulam, Annavasal and Viralimalai retained their top ranking both in 2001 and 2011 Census. Pudukkottai block registered a slight increase in the population growth rate by 0.48 per cent. Gandarvakottai block improved its ranking from 13 in 2001 to 9 in 2011, whereas Thirumayam block slided to the last rank in the district in terms of population in 2011. Rapid decline in fertility has brought the birth rate

in Tamil Nadu to a low level and now, the rural - urban differences in the birth and the death rates have also been declining. This also has been a reality in Pudukkottai district.

The density of population is a measure of the intensity of land use, expressed as the number of people per square kilometer. Pudukkottai district had a population density of 314 in 2001 and it increased to 348 in 2011, but was much lower than the level of State, which was 480 in 2001 and 555 in 2011. Table 4.1 provides the population details of Pudukkottai district for the years 2001 and 2011.

Table 4.1 Demographic Profiles

Sl.No	Blocks/ District/State	Population (no.)		Density (per sq km)		SC Pop per cent		ST Pop per cent	
		2001	2011	2001	2011	2001	2011	2001	2011
1	Pudukkottai	2,01,448	2,31,074	683	784	11.49	23.74	0.08	0.17
2	Annavasal	1,30,164	1,44,991	296	344	16.30	16.72	0.00	0.04
3	Arimalam	78,492	86,112	232	255	14.11	14.00	0.00	0.02
4	Thirumayam	79,040	82,816	276	291	15.99	16.09	0.01	0.00
5	Gandharvakkottai	76,930	86,720	240	271	20.00	16.00	0.00	0.08
6	Viralimalai	1,13,516	1,40,227	226	266	20.49	22.01	0.03	0.10
7	Ponnamaravathi	97,028	1,08,479	337	332	16.97	17.80	0.04	0.11
8	Thiruvarankulam	1,56,918	1,70,419	409	380	9.60	9.60	0.10	0.24
9	Kunnandarkovil	92,524	97,267	243	255	18.30	19.31	0.06	0.05
10	Aranthangi	1,70,030	1,87,390	417	460	28.25	28.14	0.03	0.01
11	Avudaiyarkovil	80,280	85,574	202	215	26.77	26.36	0.01	0.01
12	Manamelkudi	82,326	86,672	332	349	13.00	13.71	0.10	0.03
13	Karambakkudi	1,00,905	1,10,604	375	411	14.10	14.30	0.01	0.01
	District	14,59,601	16,18,345	314	348	17.09	17.60	0.05	0.08
	State	6,24,05,679	7,21,47,030	480	555	19.00	20.01	1.04	1.10

Source: Census 2001 and 2011

Pudukkottai block had the highest population density of 683 and 784 during 2001 and 2011 respectively, which is greater than that of the district and State levels because the block was the main centre of trade for the whole district and was more congested. Slowdown of agriculture and the engagement of people in business activities had pushed up the density over the decade in all the other blocks of Pudukkottai district except Ponnamaravathi and Thiruvarankulam. Avudaiyarkovil block had the lowest density in both 2001 and 2011 and was much lower than that of the district.

SC population of Pudukkottai district increased from 17.09 to 17.60 per cent between the years 2001 and 2011, while state's SC population increased from 19 to 20.01 during the same decade. Among the blocks, Pudukkottai block registered an increase in SC population from 11.49 per cent to 23.74 per cent during 2001-11 which was much higher than that of the district and the State. The highest decline was observed in Gandharvakkottai block as it decreased from 20 to 16 per cent during the decade. Among the blocks of the district, four blocks registered decline in the population of SCs and the rest showed an increase in the population during 2001-11.

ST population of Pudukkottai district increased from 0.05 per cent to 0.08 per cent between the years 2001 and 2011, which is lower than the State in both the years. Among blocks Viramilalai block registered an increase from 0.03 per cent to 0.1 per cent between 2001 and 2011. The highest increase among the blocks in the district was found in Thiruvarankulam. Four blocks in the district registered a decline in the ST population between 2001 and 2011. But, in two blocks, viz., Karambakkudi and Avudaiyarkovil, the population of STs remained constant during 2001 and 2011.

Crude Birth Rate and Crude Death Rate

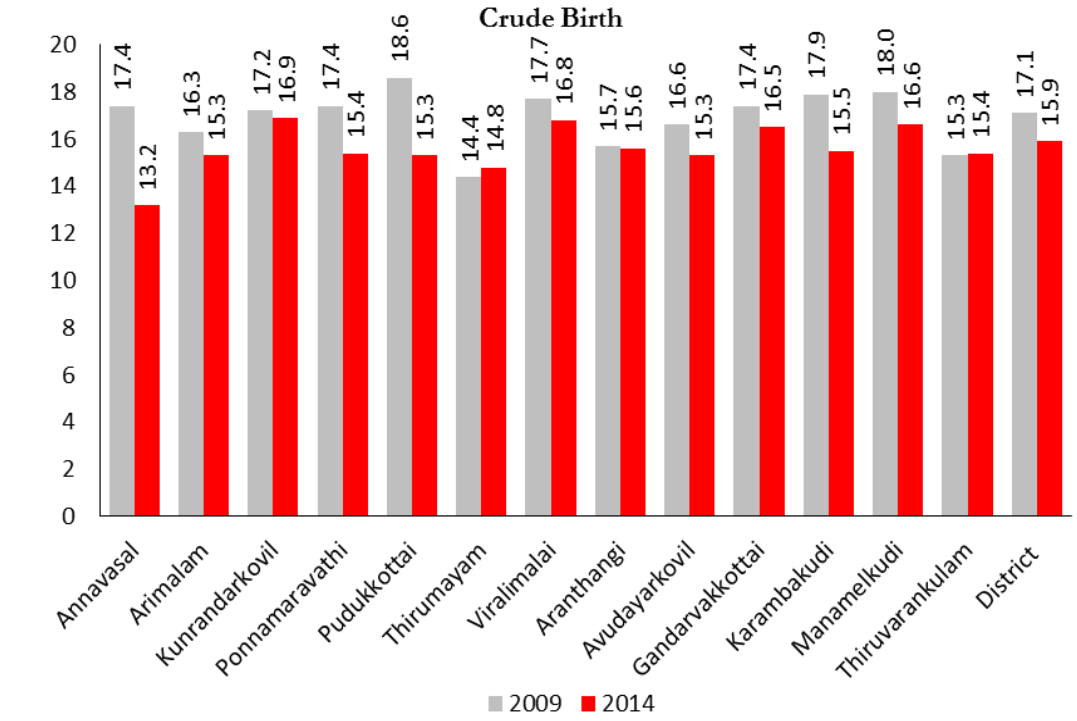
Achievements and gaps can be assessed by observing the trends for various health indicators like life expectancy at birth, infant mortality rate, crude birth rate, crude death rate, total fertility rate, maternal mortality rate, and morbidity patterns in any block, district, state or country.

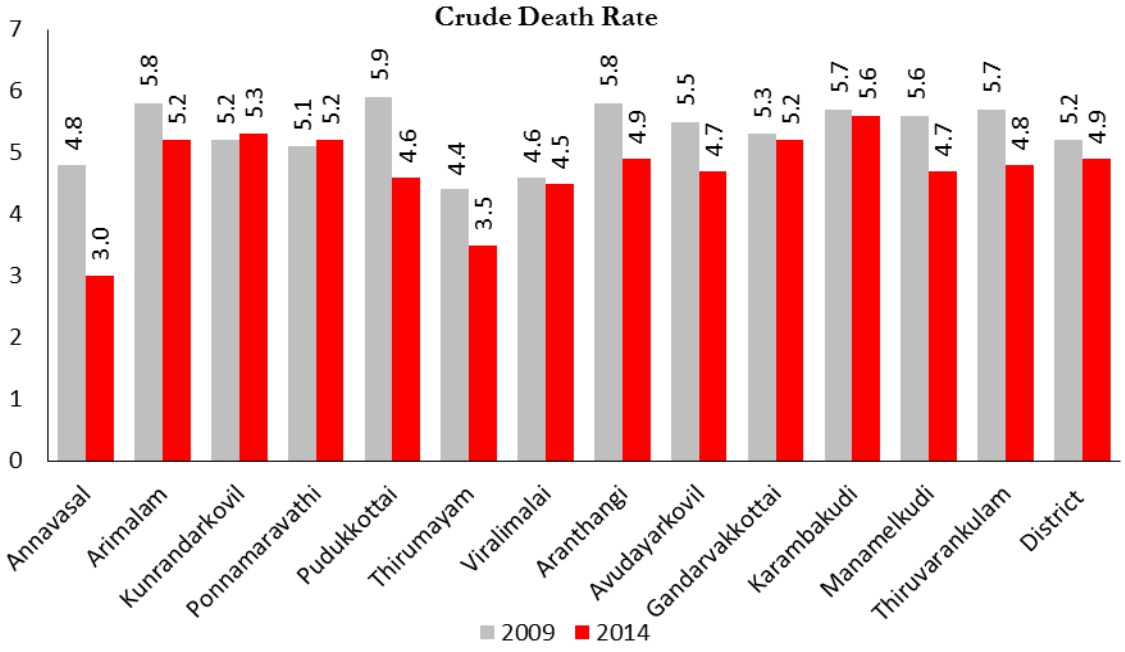
Crude Birth Rate (CBR) is the number of live births occurring among the population of a given geographical area during a specified period of time usually one year; it is often expressed as the number of live births per 1,000 of the population per year. This is a common measure of fertility for a given population. Crude death rate (CDR) is the simplest method of measuring death rate in any area. Crude death rate is the ratio of total deaths to total population in a specified community or area over a specified period of time. The death rate is often expressed as the number of deaths per 1,000 of the population per year. It is also called the fatality rate.

It can be observed that the CBR and CDR in the district have been declining over the years. But, comparing the district and State levels of CBR and CDR, it can be observed that these two rates were higher in the district in the year 2009. From the figure, it can be seen that CBR in the district has decreased from 17.1 in 2009 to 15.9 in 2014 (see Appendix Table 4.1). The CBR declined in 11 blocks of Pudukkottai district

between 2009 and 2014. Among the blocks, Annavasal block showed a sharp decline from 17.4 in the year 2009 to 13.2 in the year 2014. In contrast, Thirumayam block witnessed an increase in the CBR from 14.4 in 2009 to 14.8 in 2014.

Figure 4.1 Trends in CBR and CDR





Source: Health Department, Pudukkottai

Synchronizing with the CDR of Tamil Nadu, CDR in Pudukkottai district has also declined since 2009 to 2014 (see Appendix Table 4.1). The CDR for Pudukkottai district was 5.2 in 2009 and it declined to 4.9 in 2014. CDR was within a range of 3.0 to 5.6 among the blocks of the district during the period 2013. The CDR declined in 11blocks of Pudukkottai district between 2009 and 2014. Among the blocks, Annavasal block showed a sharp decline from 4.8 in 2009 to 3.0 in 2014, while there is a marginal increase in the CDR in Kunrandarkovil and Ponnamaravathi during the same period.

Sex Ratio

Sex ratio is an important component of demography. It has major implications for the marriage and labour markets in an economy. Skewed sex ratio in favour of male can affect their behavior in terms of income, expenditure, saving and investment pattern. It can also affect psychomotor behavior of a particular sex, which may have societal consequences. So, it is important to analyze the sex ratio of the population.

Table 4.2 Sex Ratio

Sl.No	Blocks/ District/ State	General		Increase or Decrease	SC		Increase or Decrease
		2001	2011		2001	2011	
1	Annavasal	1,023	1,007	-16	1,007	1,005	-2
2	Arimalam	1,060	1,016	-44	1,028	999	-29
3	Kunrandarkovil	991	996	+5	984	999	+15
4	Ponnamaravathi	1,060	1,017	-43	1,052	995	-57
5	Pudukkottai	1,005	1,003	-2	910	999	+89
6	Thirumayam	1,033	1,003	-31	1,032	1,012	-20
7	Viralimalai	1,001	1,006	+5	1,017	1,018	+1
8	Aranthangi	1,040	1,056	+16	1,028	1,037	+9
9	Avudayarkovil	1,031	999	-32	1,038	1,019	-19
10	Gandarvakkottai	999	993	-6	1,011	997	-14
11	Karambakkudi	1,005	1,022	+17	1,007	1,026	+19
12	Manamelkudi	1,010	1,018	+8	1,025	1,056	+31
13	Thiruvarankulam	990	1,028	+38	995	1,040	+45
	District	1,015	1,015	0	1,017	1,014	-3
	State*	987	996	+9	999	1,004	+5

Source: Census 2001 and 2011

The sex composition of the population has been an important indicator of social development. It is a great source to find the equality of males and females in a society at a given period of time. In India, the sex-ratio has been defined as the number of females per 1,000 males. It was observed that there was a declining trend in sex ratio consistently in many states since last six decades and in some states it continued to be a demographic enigma. It has been reflected in the sex ratios of the districts also.

Table 4.2 gives the sex ratio of Pudukkottai district, block-wise. The overall sex ratio in Pudukkottai was 1015 during Census 2001 and 2011, but higher than the State level of 987 and 996 during the same period. Arimalam and Ponnamaravathi blocks had the highest sex ratio of 1060 in 2001, which reduced to 1016and 1017 respectively in 2011. Highest sex ratio among the general category was in Aranthangi (1056) followed by Thiruvarankulam (1028) in the year 2011, which were higher than the district and State levels, whereas Gandarvakkottai block's sex ratio declined during the decade and was below the 1,000 mark. The sex ratio of the six blocks was higher than the district sex ratio.

In Pudukkottai district, SC sex ratio was 1014 in 2011, which was higher than the SC sex ratio of the State (1004) in the same year. Most of the blocks in Pudukkottai district had satisfactory sex ratio among SCs during the decade 2001 to 2011. Highest SC sex ratio was recorded in Manamelkudi block as it increased from 1025 to 1056 between the years 2001 and 2011. Highest increase of 9.8 per cent in SC sex ratio was registered in block Pukukkottai as it increased from 910 to 999 during 2001 to 2011. Lowest SC sex ratio was recorded as 995 in Ponnamaravathi block during 2011. There was 5.4 per cent decrease in SC sex ratio in block Ponnamaravathi from 1052 to 995 during 2001 to 2011.The ST sex ratio of the district was 983 during 2011, but was higher than the State level figures of ST sex ratio. The district ST sex ratio registered a decline from 990 in 2001 to 983 in 2011.

Child Sex Ratio

The child sex ratio is a very important component of the demographic data. It has a bearing on the future characteristics of the population of an economy. A skewed child sex ratio also implies social evils prevailing in the society like sex selection and female feticide. Hence, it is important that the child sex ratio of the district as well as the block, be discussed.

In India, the child sex ratio has been the number of female children per 1,000 of male children in the population within the age group of 0-6 years. Changes in child sex ratio reflected the underlying socio-economic and cultural patterns of the society, especially its attitude towards the girl child which drew the society towards the early scanning of fetus through scientific techniques like ultra-sonography, etc. The child sex ratio also has a bearing on the future demography of a country.

Table 4.3 Child Sex Ratio

Sl. No	Blocks/ District/ State	Population in the Age Group of 0-6 (2011)		Child Sex Ratio
		Male	Female	
1	Pudukkottai	12,326	11,797	957
2	Thiruvarankulam	9,323	8,996	965
3	Thirumayam	4,340	4,226	974
4	Gandharvakkottai	5,000	4,891	978
5	Ponnamaravathi	5,883	5,561	945
6	Arimalam	4,583	4,457	973
7	Kunnandarkoil	5,859	5,602	956
8	Aranthangi	10,545	10,047	953
9	Avudaiyarkovil	4,645	4,508	971
10	Manamelkudi	4,890	4,874	997
11	Karambakkudi	6,957	6,447	927
12	Annavasal	8,754	8,327	951
13	Viralimalai	8,591	8,259	961
	District	91,696	87,992	960
	State*	38,20,276	36,03,556	943

Source: Intgrated Child Development Scheme, Pudukkottai

Table 4.3 gives the child sex ratio of the various blocks of Pudukkottai district. Tamil Nadu had a child sex ratio of 943 as per census 2011of India estimates, while the district had a child sex ratio of 960, which was higher than the State level. Among blocks, Manamelkudi block had the highest child sex ratio of 997 in the district. The child sex ratio was 927 for Karambakkudi block, which was the lowest among all the blocks of the district. The child sex ratio in Pudukkottai block was 957 in 2011, which was less than

the sex ratio in the district. Among the 13 blocks, 7 blocks registered a higher sex ratio than the district level. The lower level of child sex ratio in certain blocks might reflect lesser girl children in the blocks and increased level of private medical practices where the chances of female feticide exist, could not be disputed. Also the natural decline in the birth of female children could be responsible for the decline in child sex ratio because no valid proofs of female infanticide were available. The child sex ratio in the district has decreased and needs to be paid attention.

Life Expectancy at Birth

Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout his/her life. It is one of the most preferred indicators in demographic and health analysis. Life expectancy measures quantity rather than quality of life. It is a proxy measure for several dimensions like adequate nutrition, good health, education and other valued achievements.

Table 4.4 Life Expectancy at Birth (in years)

Sl. No	District/ State	2001-02		2013-14#		Rise or Fall in LEB	
		Male	Female	Male	Female	Male	Female
1	District	67.6*	70.6*	68.8	72.5	1.2	1.9
2	State	64.8^	67.1^	71.8	75.8	7.0	8.7

Source: Health Department, *Pudukkottai&#Tamil Nadu^Statistical Handbook of TN 2013

The Table 4.4 provides the life expectancy at birth at the district level in 2001-02 and 2013-14. The life expectancies at birth in Pudukkottai district for both male and female have increased by 1.2 and 1.9 years respectively during the reference years and stood at 68.8 and 72.5 years respectively in the year 2013-14. The same for the State were lower than that at the district level in the year 2001-02, but have improved tremendously in the year 2013-14. The State level rates of life expectancy at birth for male and female were 71.8 and 75.8 respectively, and were higher than the Pudukkottai district level.

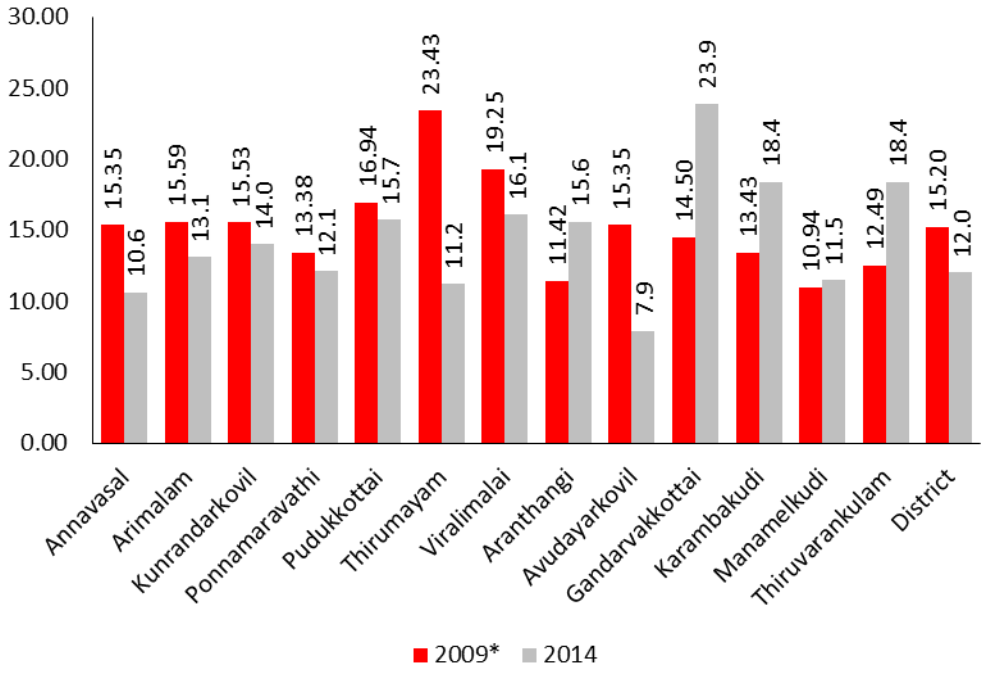
Coronary heart disease, lung disease, diarrhoea, influenza, pneumonia, tuberculosis, hypertension, diabetics, liver disease, kidney, suicide, road accidents,

HIV/AIDS, birth trauma, peptic ulcer, breast cancer and oral cancer were the top 10 cases for increasing deaths in general.

Infant Mortality Rate

There are various indicators of the overall state of health status of a country, region and community. Some indicators are widely accepted while others are not as widely accepted. Infant Mortality Rate (IMR) is one such indicator of health and it is widely accepted as a good indicator of health by Governments as well as International Health Organizations such as World Health Organization (WHO). IMR is the number of infants dying before reaching one year of age. It is calculated per 1,000 live births in a given year. It is most widely accepted as one of the most sensitive indicator of health status due to several reasons. The IMR always reflects the overall health scenario of a region. The rate is low in developed regions and high to very high in developing or underdeveloped regions. If health infrastructure (preventive and curative infrastructures) of a region of a country is very good, the IMR is always under control.

Figure 4.2 Infant Mortality Rate



Source: Health Department, Pudukkottai; *VES 2009

Figure 4.2 gives the IMR of Pudukkottai district and its blocks for the period 2009 and 20143. The district level has decreased from 15.2 in the year 2009 to 12.0 in the year 2014. The IMR of Pudukkottai district compares equally with the State IMR for the same year. Among the blocks, seven blocks have higher IMR than the district level in the year 2009, whereas it is eight blocks in 2014. In the year 2009 Manamelkudi registered a lower IMR of 10.9 followed by Aranthangi (11.4). In the same year, Thirumayam block registered the highest IMR of 23.4 followed by Viralimalai with 19.3, both the blocks reduced their IMR rates to 11.2 and 16.1 respectively in the year 2014. The lowest IMR was recorded by Avudaiyarkovil with 7.9 followed by Annavasal (10.6) in 2014. The highest IMR was recorded by Gandharvakottai block (23.9) in the year 2014 followed by Karambakkudi (18.4).

As the number of physicians increased in the State by four fold recently, the percolating benefits have been reaped by all districts and blocks in terms of improvement in health indicators. Women employment, education for women and high female worker participation in the economic growth were the reasons for the decrease in IMR. Increasing number of skilled professionals was negatively correlated with maternal, infant and childhood mortality.

The prevailing rate of infant mortality was a symptom of the inadequate care given to the child during pregnancy and after childbirth. The quality of antenatal and post-natal care influenced the survival of infants. This was reflected in the high incidence of pre-mature births as being the significant cause of infant mortality. Low birth weight including premature birth was one of the major causes for infant mortality as this increased their receptiveness towards infection. Respiratory infections, water-borne diseases, poor immunity of neonates and infants, unclassified conditions peculiar to infancy, anaemia and unspecified fever were the major causes of infant mortality, reflecting poor nutritional and hygiene standards. Other causes providing stimulus to infant deaths are cord infection, congenital malformation and birth injuries. Thus, a combination of poor nutrition, and inadequately treated infections caused preventable mortality during early childhood in certain blocks of the district.

Case Study: Infant Mortality

Infant mortality is used as one of the key indicators of community health. It has been considered as a crucial test for health services despite social progress of a country and the improvement in hospitals, survival of infants continues to be a challenge in the area. So its decline is one of the prerequisite for acceptance of a small family norm and improvement in the hygiene of the mother and the baby. High infant mortality is considered as social and demographic enigma in the modern society which results as disorder in the demographic structure of the area. It also has its effects on the health of the mother due to immediate conceiving of the next baby. So, it is important to examine the causes of infant mortality.

In Pudukkottai district, Viralimalai block had the highest number of infant mortality cases registered during 2013-14. So, Viralimalai block was chosen for the case study. There were five PHCs in the block and infant mortality cases were high under the Viralimalai PHC. In Viralimalai block 33 cases of infant mortality were registered during the period March 2013 to April 2014 and 10 cases were registered under Viralimalai PHC which was the highest among all the other PHCs in the block. From the field visits of the villages under the Viralimalai PHC, the reason for infant deaths was identified as pre-mature delivery and low birth weight. Apart from this, it was observed that there was no gap between the first and second child. Next, the respondents had studied up to class eight and their husbands were illiterate. The economic status of the respondents was very low and sometimes weaning food provided by ICDS was shared among the family members. Out of all ten cases, four were registered as premature delivery, two as conjunctive heart disease, one as Jaundice, two with aspiration lung disease, and one with several other diseases.

Less or no gap between the first and next delivery, lack of health education among the parents, improper care for the newly born baby, squalid and unhygienic housing, the lack of most basic facilities like clean water, latrines, and transportation, prevalence of poverty with all its vices, all combine to cause high rates of disease and death among infants in the area. Evidence suggests that the survival of infants after the age of one month is mainly influenced by the external environment in which the infant lives, and this is poor in the study area.

Maternal Mortality Ratio

Maternal Mortality Ratio (MMR) is the number of women who die during pregnancy and childbirth, per 1,00,000 live births. Maternal death refers to the death of a woman while pregnancy or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. The MMR represents the risk of hypertension and anaemia during pregnancy, i.e., the obstetric risk. Complications during pregnancy and childbirth are a leading cause of death and disability among women of reproductive age in developing countries. Life Saving Anesthetic skills (LSAS) training for medicos in Tamil Nadu State were provided to facilitate the mitigation of maternal deaths in circumstances in which, cause of death were to be unavoidable.

But, more than the medical issues behind maternal mortality, therelies a myriad of socio-economic issues occurring at different levels in the society. One instance can be the education of reproductive health among the youth, which is suppressed due to social stigma. The fact is however that it should be a major concern for the youth; being the segment of the population that is most sexually active, but has limited information and knowledge about sexual and reproductive health. Without having the right information, access to services and health systems adequately meeting service needs, young people in their families (especially young women) will not only face the mortality risks when they are adults, but they are also at risk now. Without the pre-requisites mentioned above, the ability to make positive, sound and sustainable health decisions, especially those effecting maternal health will be significantly low. Therefore, it is emphasized that young people should get information and seek sexual and reproductive health services that would enable them to make the right health decisions.

Table 4.5 Maternal Mortality Ratio

Sl. No	Blocks/ District/ State	2009*	2014
1	Annavasal	242.3	0.0
2	Arimalam	212.6	140.0
3	Kunrandarkovil	0.0	160.0
4	Ponnamaravathi	0.0	120.0
5	Pudukkottai	70.6	0.0
6	Thirumayam	0.0	90.0
7	Viralimalai	0.0	80.0
8	Aranthangi	42.3	30.0
9	Avudayarkovil	133.5	20.0
10	Gandarvakkottai	72.5	30.0
11	Karambakkudi	49.7	40.0
12	Manamelkudi	57.6	40.0
13	Thiruvarankulam	113.5	130.0
	District#	82.0	82.0
	State#	85.0	68.0

Source: Health Department,Pudukkottai

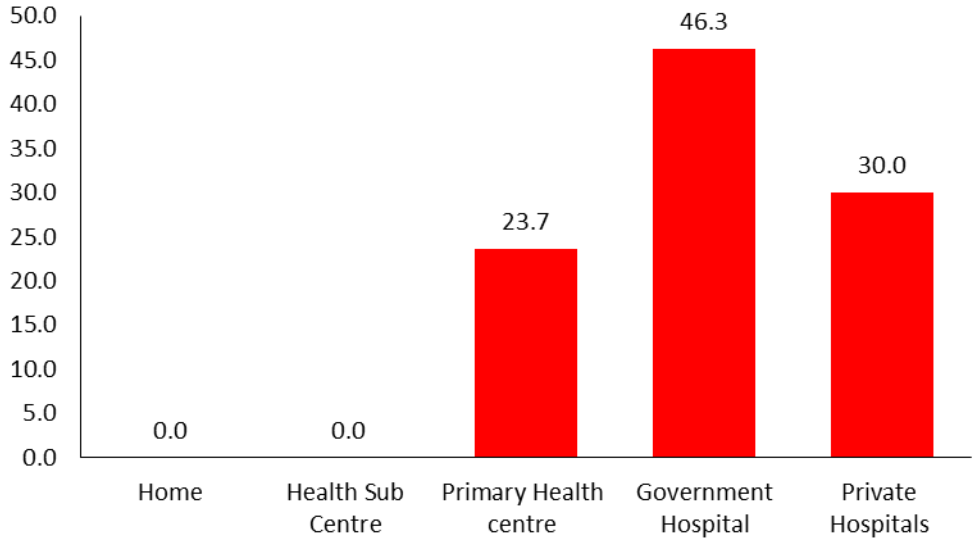
Table 4.5 provides the MMR for the blocks of Pudukkottai district in2009, however, discussion would be taken-up for the period 2009 and 2014. The State level MMR has declined from 85.0 in 2009 to 68.0 in 2014, however the district MMR has remained the same at 82 between 2009 and 2014. Among the blocks, four blocks, viz., Annavasal, Arimalam, Avudaiyarkovil and Thiruvarankulam, have higher MMR than the district level during 2009 and Annavasal and Pudukkaootai blocks managed to reduce MMR to zero level in 2014. This may be due to some intervention by the respective authorities or by sheer chance as the zero level can be observed in many blocks during the two years. In some of the blocks, the MMR has increased from 2009 to 2014, they are Kunrandarkovil, Ponnamaravathi, Thirumayam, Viralimalai and Thiruvarankulam. But, nothing much can be said regarding the blocks in terms of the trend of MMR, as these seem to be random occurrences and moreover the methodology of MMR uses maternal mortality per 1 lakh live births, which is not even close to the number of pregnant women in a block in a particular year. In general, the causes of maternal mortality as discussed earlier may be kept in mind and better support mechanisms for

pregnant women may be developed at the grass root level in order to reduce the risk of maternal deaths.

Place of Delivery

The place of delivery is of crucial importance as it has significant implications for the fetus/infant and the mother. These are the places where pregnant women get medical care at a time of giving birth to the children. These places are equipped with better medical facilities, and well experienced doctors and other medical staff. There were different types of medical centres available in India for this service usually known as health sub centres (HSCs), primary health centers (PHCs), government hospitals and privately owned hospitals. Despite this, in some places home deliveries have been reported to be taking place because of distance factor. In Tamil Nadu PHC's, HSC's are operative in every district.

Figure 4.3 Percentage of Institutional Delivery



Source: Health Department, Pudukkottai (2013-14)

In Pudukkottai district, home deliveries have almost become non-existent, which can be seen from the Figure 4.3 for the year 2013-14. Deliveries in the rural side took place at PHCs at an average of 23.7 per cent (see Appendix Table 4.3). Ponnamaravathi block recorded the highest share of deliveries at PHCs among the blocks with 35.1 per cent. Seven blocks had a higher share of deliveries at PHCs compared to the district level. Similarly, share of deliveries at GHs in the district was 46.3 per cent.

Annaavsal block registered the highest deliveries in GHs at 65.7 per cent. In this category also seven blocks had shares higher than the district level. The share of deliveries at the private hospitals accounted for 30 per cent in Pudukkottai district. Manamelkudi had the highest percentage share in category among blocks in the district with 45.8 per cent. In this category eight blocks had shares higher than the district level. The overall record of the share of place of deliveries reveals that all blocks and the district are performing extremely well with ten blocks registering 100 per cent institutional deliveries.

Still Birth Rate

The definition recommended by WHO for international comparison referred that still birth means,"a baby born with no signs of life at or after 28 weeks' gestation". In calculating the still birth rate, the number of still births has been divided by the number of live births and still births and then multiplied by 1,000. Sometimes (mainly for the sake of comparison), the number of still births can be calculated per 1,000 live births only. The major causes of still birth include: childbirth complications, maternal infections in pregnancy, maternal disorders (especially hypertension and diabetes), fetal growth restriction, congenital abnormalities.

Table 4.6 Still Birth Rate

Sl. No	Blocks/ District/ State	2007	2008	2009	2010	2014
1	Annavasal	20.2	17.4	16	15.1	12.8
2	Arimalam	13.9	14.7	14.1	7.7	12.2
3	Kunrandarkovil	17.7	19.2	23.1	19.6	21.3
4	Ponnamaravathi	15.7	15.8	10	14.5	18.4
5	Pudukkottai	15.9	18.1	13.9	13.6	15.5
6	Thirumayam	7.5	9.1	17.1	6.3	6.8
7	Viralimalai	16.5	19.3	17.3	16	8.4
8	Aranthangi	15.1	12.4	11.2	12.4	13.8
9	Avudayarkovil	9.2	11.2	11.5	19.4	14.8
10	Gandarvakkottai	20.8	25.7	21.8	32.5	14.4
11	Karambakkudi	10.8	17.1	10.1	21.4	14.3
12	Manamelkudi	8.1	13.1	10.2	11.8	8.7
13	Thiruvarankulam	14.8	20.1	15.8	16.1	15.8
	District	16.1	13.5	15.4	12.8	14.4

Source: Health Department,Pudukkottai

The data for still birth rate has been provided in the Table 4.6 for the various blocks of Pudukkottai district. Still birth rate in the district was 16.1 during 2007, which decreased to 14.4 in 2014. The highest still birth rate in 2007 had been registered in Gandharvakottai and Annavasal blocks, while in 2014, Kunrandarkovil registered the highest still birth rate of 21.3 followed by Ponnamarvathi (18.4). The lowest still birth rate was recorded by Thirumayam (7.5) in 2007 followed by Manamelkudi (8.1), while the lowest still birth rate in the year 2014 was recorded by Thirumayam (6.8) followed by Viralimalai (8.4).

Immunization

Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body's own immune system to protect the person against subsequent infection or disease. In modern scientific era immunization has been a part and parcel of a health maintenance activity which helped in improving the health status of children at later stages of development. Immunization for children is particularly done below five years so that their immune system would fight against the diseases like polio, ear infections, respiratory infections, diarrheal infections, etc. The best way found to treat any disease before its occurrence was by way of immunization. Past studies have proven that vaccines have always been very safe and helpful in the reduction of some severe diseases.

In Pudukkottai district 97.7 per cent of children were immunized during the year 2013-14 (see Appendix Table 4.4). Avudaiyarkovil and Manamelkudi blocks achieved 100 percent of immunization during the same year. Among the blocks, only three blocks had higher percentage of immunization compared to the district level. In overall terms, the immunized percentage of children in the district was satisfactory. The department has been serving to provide immunization cover to children against the six dreaded diseases of polio, diphtheria, pertussis, tetanus, TB and measles, in addition to prophylaxis against the vitamin A deficiency.

Female infanticide

Female infanticide refers to the killing of newborn female child by parents, due to their desire for a male child. It has been a social evil prevalent in many States of India since the pre independence era, which has considerably increased after globalization. The

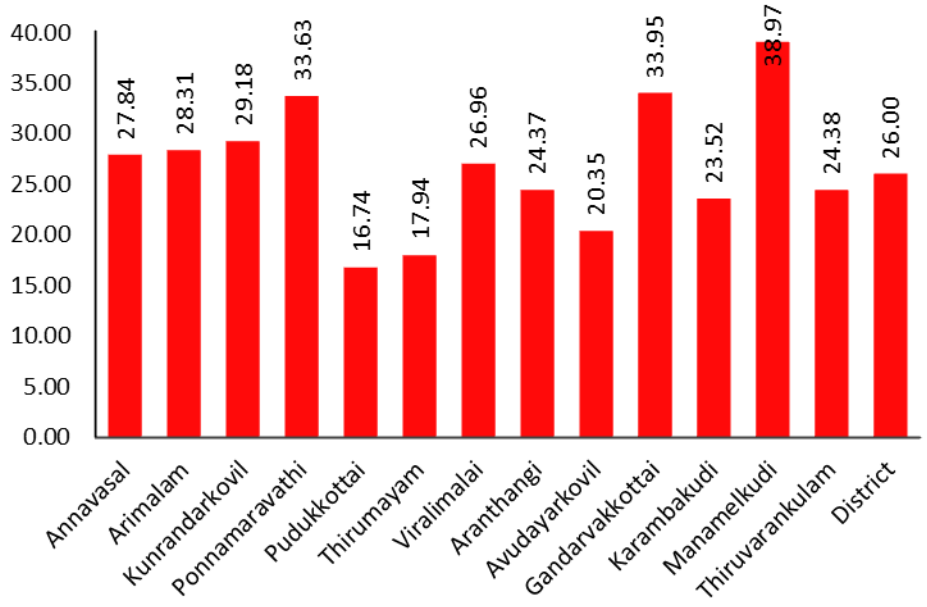
modern scientific advancements in technologies like ultra-sonography have complicated this issue by helping the parents to identify the gender of the foetus at an early stage, thus this technology has promoted foeticide or aborting the female child. This malpractice has led to considerable decline in the child sex ratio in India. Mostly, in this district son preference was prevalent, but there were no official records of female infanticide. Though unofficial sources reveal that foeticide was present in the district.

Nutritional Status

Nutrition Level and Trend

Eradication of hunger, poverty, and halving proportion of people in poverty, ensuring adequate nutrition and dietary improvement for the poor were few among the goals of SAARC Development Goals. The National Nutrition Policy (NNP) has considered poverty in terms of a self-perpetuating vicious circle: causative sequential links being low intake of food and nutrition – under nutrition with attendant nutrition related diseases and infections – faltering growth of children – small body size of adults – impaired productivity – low learning capacity — back to poverty. Children are vulnerable to malnutrition because of low dietary intakes, infectious diseases, and lack of appropriate care and inequitable distribution of food within the household which may even be newly coined as 'Family Welfare Index. Anyhow, the two standard indices commonly used for physical growth that normally describe the nutrition status of children are: Height for-age (Stunting), and Weight for-age (Underweight).

Figure 4.4 Trend in Nutritional Status (0-5 years) (in percentage)



Source: Health Department, Pudukkottai (2013-14)

Correlation between highly educated people and malnutrition has decreased. Over the decade nutritional programmes have covered a wide area resulting in improving the health status of children. Basic educational status has been increased through the Mid-day-meal programme as most of the poor people admit their children to government schools. The provision of iron, folic acid and calcium tablets, pulses, daliya, channa and other food items prepared at Anganwadi centers in the villages have been done in order to improve the health status of children particularly among adolescent girls. Nutritious Meal Scheme followed by the State had the above indicators in mind while implementing it.

Box4.1 Nutritional Programmes of Government

The ICDS was launched on 2nd October 1975 and has achieved one of the world's largest and most unique programme for the early child hood care, better nutrition and overall social welfare of the children, male/female infants and women. It also takes care of the pregnant women pre and post delivery. The ICDS provides nutritious noon meals to the children between the age of 0-5 years in every district of Tamil Nadu, so as to improve the nutritional level, and provide them pre-school education. In Pudukkottai district, from the field visits it was observed that the programme was running in an efficient manner in the district but the raw material provided by government to improve overall health status like rice and wheat could be improved in terms of quality to achieve better results.

The Ministry of Women and Child Development, Government of India, in the year 2000 came up with a scheme called Kishori Shakti Yojna (KSY). This scheme was initiated using the infrastructure of Integrated Child Development Services (ICDS). The objectives of the Scheme were to improve the nutritional and health status of girls in the age group of 11-18 years, as well as to equip them to improve and upgrade their home-based and vocational skills and to promote their overall development including awareness about their health, personal hygiene, nutrition, family welfare and management. The scheme provided for Rs.1.1 lakh per project per annum. 2-3 adolescent girls per Anganwadi center were targeted under this scheme, whowere provided supplementary nutrition by the State government. From the data and field visits it was observed that every block of the district covered non-school going girls in the district. For the proper implementation of the scheme for school going girls were also included after their school hours.

In the district, adolescent girls were divided into two groups as per their age structure. The first group between the age of 11-15 years were given orientation training, life education and the women's rights. Every block covered 13 such adolescent girls in a year so that the whole district covered 150 girls in a year. In the second group between the age of 15-18 years, more focus was placed on the school dropouts in the blocks in order to teach them vocational skill training, computer education and accessing public services. Again if the number of dropouts was low, school going girls were included and provided with guidance and counseling. In every block 30 such girls were covered in a year and in the district, total 390 adolescent girls were covered every year.

Figure 4.4 shows the block-wise percentage of malnourished children in the age group 0 – 5 years in Pudukkottai district indicating the levels of nutritional status in the district during the year 2013-14 (see Appendix Table 4.5). The figure shows that the malnourishment in the district ranges from 16.74 per cent to 38.97 per cent in the year 2013-14, with a district level of 26.00 per cent. Six blocks, viz., Pudukkottai, Thirumayam, Avudaiyarkovil, Karambakkudi, Aranthangi and Thiruvarankulam have recorded lower rates of malnourishment than the district level among children in the age group 0 -5 years, while the remaining seven blocks registered higher rates than the district level. Manamelkudi, Gandharvakottai and Ponnamaravathi have registered malnutrition levels above 30 per cent, which is quite high compared to other blocks in the district and something in this regard needs to be done at the earliest. Pudukkottai and Thirumayam are better than other blocks in levels of malnutrition among children in the district. This may be due to the urban characteristics with respect to Pudukkottai block and out-migration (overseas) with respect to Thirumayam block as both these aspects lead to better awareness and access levels.

Provision of IFA Tablets

One of the major issues faced by the female gender in India is anaemia. Anaemia is the root cause of other diseases due to lack of resistance power. The problem of anaemia during pregnancy is much acute putting both the mother and child at risk. The most important cause of anaemia during pregnancy is inadequate dietary intake of iron. Hence, in this regard, the Reproductive and Child Health Programme in India aimed at providing pregnant women with at least three antenatal check-ups, two doses of tetanus toxoid vaccine, and iron and folic acid (IFA) supplementation during pregnancy. The adolescent girls were also covered under the programme through the provision of IFA tablets.

From Table 4.7 it can be seen that the total number of persons provided with IFA tablets in the district was 87,934 in 2013-14, out of which women were 22,811, children were 26,252, and adolescent girls were 38,871. In terms of percentage, women constituted 25.94 per cent, children 29.85 per cent and adolescent girls 44.21 per cent. Among the blocks, the number of women provided with IFA tablets ranged from 1,034 to 2,573, children from 1,298 to 2,885 and adolescent girls ranges from 749 to 5,584.

Table 4.7 Provision of IFA Tablets (2013-14)

Sl.No	Blocks/ District	No of Women took IFA Tablets	No. of Children took IFA Tablets	No. of Adosolent Girls took IFA Tablets
1	Annavasal	2,304	1,306	5,355
2	Arimalam	1,772	2,079	5,030
3	Kunrandarkovil	1,722	2,885	3,814
4	Ponnamaravathi	1,856	2,309	5,584
5	Pudukkottai	1,475	2,467	5,089
6	Thirumayam	1,034	1,687	3,542
7	Viralimalai	1,908	1,298	4,069
8	Aranthangi	1,872	2,057	1,385
9	Avudayarkovil	1,384	1,642	874
10	Gandarvakkottai	1,352	1,963	867
11	Karambakkudi	1,875	2,359	1,027
12	Manamelkudi	1,684	1,813	749
13	Thiruvarankulam	2,573	2,387	1,486
	District	22,811	26,252	38,871
Source: Health Department, Pudukkottai				

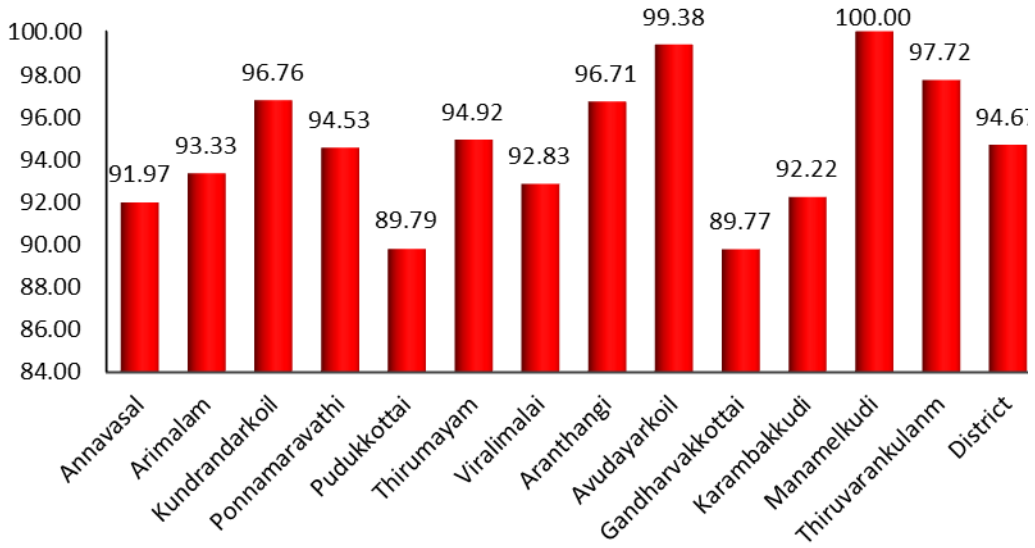
Among the blocks, Thiruvarankulam block provided highest number of IFA tablets to women, Kunrandarkovil to children and Ponnamaravathi to adolescent girls. Thirumayam block recorded the lowest number of women provided with IFA tablets, Viralimalai for children and Manamelkudi for adolescent girls. Highest variation among blocks seems to be in the provision of IFA tablets to adolescant girls. Manamelkudi, Gandarvakottai and Avudayarkovil seem to perform poorly in terms of provision of IFA tablets to adolescant girls among the various blocks of Pudukkottai district.

Non –Nutritional Factors and their Impact on Nutrition

Water Supply

Access to safe drinking water and access to water in general and all other activities are a prerequisite for human development. The State government has made huge investments in this regard. Safe water in sufficient amounts can have positive effects on the general health of the people in terms of helping them to absorb the nutrition in the food they consume. Regular water surveillance and water purification through cost-effective methods is to get rid of water-borne diseases including intestinal infections, worm infection, diarrhea, jaundice, typhoid, etc. which in turn would bring down the cost of the treatment of these diseases and would improve the economic condition of the people.

Figure 4.5 Access to Drinking Water



Source: Nirmal Bharat Abiyan Report 2013-14

Figure 4.5 shows the details of the access to drinking water in the various blocks of Pudukkottai district (see Appendix Table 4.6). In Pudukkottai district 95 per cent of habitations were covered with access to drinking water facility. Total number of habitations covered was 4,541 during 2013-14. Most of the blocks covered 90-100 per cent of habitations. Six blocks covered 95-100 per cent of its habitations and 100 per cent was covered by Manamelkudi block. Wastage of precious water could be observed

in many places. All efforts have been made to safeguard water through rain water harvesting by the district authorities, thanks to the directions from State government. But, better leak detection methods should be found and repair of broken taps and/or replacement of stolen taps could be overcome by making use of native resources including knowledge, management capacity and labour. The concerned department could take most of the work which would have been otherwise taken by outside contractors. Investment in better leak detection, maintenance and repair of water system could improve the supply of water to a large extent. This would improve personal hygiene and reduce the occurrence of water-borne and other associated diseases.

Sanitation

According to the WHO, sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on the health both in households and across the communities. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and waste water disposal.

Table 4.8 provides the block-wise details of the number of households with toilet facilities in Pudukkottai district according to the Nirmal Bharat Abiyan data for 2013-14. In Pudukkottai district 56.48 per cent of the households had access to toilet facility during 2013-14. Pudukkottai and Thirumayam blocks have the highest percentage of households with toilets (85.28 and 84.44 respectively). The third place is recorded by Ponnamaravathi in terms of the percentage of households (62.75) provided with toilet facilities. The least percentage of households provided with toilets is recorded by Thiruvarankulam block with 34.52 per cent, but, in terms of actual numbers it is ahead of the other seven blocks. The second lowest percentage is recorded by Manmelkudi block with 36.60 per cent and it has the least number of households having toilets. Eight blocks in the district achieved more than 50 per cent provision of toilets. Five blocks have provided toilets to less than 50 per cent of the households in 2013-2014. Awareness in this regard is to be enhanced in the district.

Table 4.8 Provision of Toilet

Sl. No	Blocks/ District	Total No. of HHs	Number of HHs with Toilet Facilities	Percentage of HHs Provided
1	Annavasal	25,765	14,987	58.17
2	Arimalam	17,436	9,391	53.86
3	Kunnandarkoil	20,484	10,791	52.68
4	Ponnamaravathi	22,496	14,117	62.75
5	Pudukkottai	52,483	44,759	85.28
6	Thirumayam	17,698	14,944	84.44
7	Viralimalai	25,236	10,494	41.58
8	Aranthangi	38,949	17,736	45.54
9	Avudaiyarkovil	17,008	8,380	49.27
10	Gandarvakottai	16,217	8,431	51.99
11	Karambakkudi	20,756	11,862	57.15
12	Manamelkudi	15,459	5,658	36.60
13	Thiruvarankulam	35,323	12,193	34.52
	District	3,25,310	1,83,743	56.48

Source: Nirmal Bharat Abiyan Report 2013-14.

Case Study: Toilet Facility

Toilets with proper water connections are to be ensured at every household so as to ensure the households free of health hazards. In Pudukkottai district, though 56.48 per cent households have access to toilet facilities, about 80 per cent of the total households do not use toilets and open air defecation is very common in the district. And hence, this issue has been taken for case study. Sundangi Managar village of Kothamangalam panchayat located in Thiruvarankulam block, which comes last under the criteria of sanitation as per the Nirmal Bharath Abiyan data, was selected for the study. Hence, Thiruvarankulam block has been chosen for the survey, in which two villages were selected randomly. From the field visits, it was found that 43 per cent of the households in these villages did not have toilets in their house. These people feel ashamed to have toilets within their house. Around 20 per cent of the households have built the toilets through Government Schemes. But, these toilets are not in use. These toilets are used for storing or dumping waste goods. Around 37 per cent of the households have toilets and are using them. The main reason for this is the presence of girl children.

Box 4.2 Utilization of Public Health Services and health Programmes of State and Central Governments

The health programs of State Government running in the district are as follows:
A) Maternal and Child Health Programme, B) Epidemic Prevention and Control Programme, C) Malaria & Fileria control Programme, D) Adolescent Anemia ControlProgramme, E) School Health Programme, F) Dental Programme, G) Hospital on WheelsProgramme, H) MRMBS benefit for pregnant mother for two deliveries, I) Birth and Death Registration Programme, J) E-Governance of all the Programmes. K) Family Welfare Programme. L) Fund support for building construction through TNHSP etc.

Central Government programs running in the district include:

A) National Aids Control Programme, b) National Leprosy Eradication Programme, C) Tuberculosis Control Programme, E) Janani – Shishu Suraksha Karyakaram, F) Janani Suraksha Yojna, G) Funding for MCHV & public health services through NRHM, H) Building, Vehicle, and Infrastructure support through NRHM and much more.

During 2011-12, the total number of hospitals in the district was 12, which comprised of some Siddha and Homoeopathy hospitals also. During the reference period there were four dispensaries in the district comprising of one Modern Medicine, one Ayurveda, one Siddha and one Homoeopathy. There were 68 Primary Health Centers PHCs in the district comprising of 55 Modern Medicine, two Ayurveda, and 11 Siddha during the same period. There was a total bed strength of 1083 in Modern Medicine hospitals for patients during the reference period which was serviced by 133 doctors and 210 nurses. Also 21 Siddha doctors, two Ayurveda doctors and one Homoeopathy doctor were working in their respective hospitals during the reference year.

The Progress of Family Welfare Program in the district during 2011-12 was notable. In General Hospitals a target of 6,480 was fixed for sterilization and 4,041 was achieved and in PHCs a target of 1,329 for sterilization was fixed and 717 was achieved. Un approved nursing homes also registered 161 sterilizations during the reference period. For motivating women to use Intra Uterine Device (IUD) General Hospitals had fixed a target of 2,005 while the achievement was 2,498, which was more than the target fixed. PHCs also had fixed a target of 6,745 and were successful in achieving 4,955 during the reference year. Local bodies also helped in this aspect with a target of 750 and achievement of 463 in the district. Approved nursing homes also contributed towards the family welfare through IUD in the district by achieving 112 cases.

A target of 200 was fixed for oral pill users in General Hospitals with an achievement of 312 which was more than the target fixed during the reference period. In PHCs a target of 2,430 was fixed with an achievement of 1,337 during the reference year for oral pill users.

Government hospitals had fixed a target of 300 for Condom users where 836 were achieved during 2011-12, which was much higher than the target. PHCs and Local Bodies had fixed a target to 4,048 and 52 with an achievement of 2,018 and 277 respectively for condom users in the district, which was more than expected in case of local bodies.

Special Programmes

AIDS Control

AIDS (Acquired Immune Deficiency Syndrome) is one of the worst pandemics the world has ever known. HIV (Human Immunodeficiency Virus), the virus that causes AIDS, was first discovered in 1981 in a remote area of central Africa. It has since swept across the globe, infecting millions in a relatively short period of time. Millions have died due to this dreaded disease, which can go unnoticed for even a decade and during the same period, infecting many others. While many cases go unreported, the prevalence of the disease is increasing and so, controlling its spread is of paramount importance. AIDS is not only a medical problem, but also a social problem. AIDS patients are often not accepted by the conservative society. In many cases the children affected by AIDS are denied admission in schools. People affected by AIDS are prone to various diseases that make them physically weak and often they can hardly bear the high cost of frequent treatments. Gradually their economic condition worsens and their life becomes tougher.

National AIDS Control Programme

Table 4.9 Prevalence of HIV AIDS (in no.)

Sl.No	Age-Group Wise	2007		2011		2013	
		Male	Female	Male	Female	Male	Female
1	0-14	3	3	6	5	3	3
2	15-19	1	2	2	1	3	1
3	20-24	1	0	5	15	3	12
4	25-29	31	41	22	30	13	21
5	30-39	86	108	85	57	49	43
6	40-49	142	103	57	32	56	29
7	50&above	50	29	29	19	18	17
	District Total	314	286	206	159	145	126

Source: Health Department, Pudukkottai

Though a full-fledged war against AIDS was started in the 1980s, the AIDS Control Programme as a 100 per cent centrally sponsored scheme in India was initiated in 1992 to arrest and eradicate the disease. Table 4.9 gives the details of the prevalence of HIV in the years 2007, 2011 and 2013. From the table it can be seen that the prevalence of HIV has been reduced by 64.4 per cent between 2007 and 2011. The reduction is seen more for female than male between the same years. The prevalence of HIV was the

highest in the age group of 40-49 years (both male and female) during 2007, which has considerably reduced in the year 2011. The age group 30-39 recorded the second highest number of HIV positive cases in the year 2007, but in 2011 it is the first in this regard, though the absolute number of HIV positive cases has reduced between 2007 and 2011. The case of 20-24 age group needs special attention as the number of HIV positive cases has increased from one for male and zero for female in 2007 to five for male and 15 for female in 2011. This is the only age group where the prevalence of HIV has increased from 2007 to 2011 and that too for both male and female. So, something in this regard needs to be done for the age group 20-24 years.

Prevalence of Tuberculosis and Leprosy

According to the WHO, Tuberculosis, or TB, is an infectious bacterial disease caused by Mycobacterium tuberculosis, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. The symptoms of active TB of the lung are coughing, sometimes with sputum or blood, chest pains, weakness, weight loss, fever and night sweats. Tuberculosis is treatable with a six-month course of antibiotics.

According to the WHO, Leprosy is a chronic infectious disease caused by Mycobacterium leprae, an acid-fast, rod-shaped bacillus. The disease mainly affects the skin, the peripheral nerves, mucosa of the upper respiratory tract and also the eyes, apart from some other structures. Leprosy has afflicted humanity since time immemorial. Today, the diagnosis and treatment of leprosy is easy.

Table 4.10 presents the TB and Leprosy cases registered in Pudukkottai district. In Pudukkottai district, the number of TB patients has marginally increased by 0.94 per cent between 2007 and 2012. Among the blocks Aranthangi has the highest prevalence in both reference years and the lowest prevalence was reported in Thirumayam block. It can be noticed that in the inter-block comparison Pudukkottai block has registered the maximum prevalence, while the increase was marginal in blocks like Annavasal, Ponnamaravathi, Avudaiyarkovil and Thiruvarankulam.

Table 4.10 Prevalence of TB and Leprosy (in no.)

Sl. No	Blocks/ District	Tuberculosis		Leprosy	
		2007	2012	2007	2012
1	Annavasal	52	58	0	0
2	Arimalam	34	20	0	0
3	Kunrandarkovil	32	30	1	0
4	Ponnamaravathi	35	41	0	1
5	Pudukkottai	76	105	0	0
6	Thirumayam	17	15	0	0
7	Viralimalai	56	55	0	0
8	Aranthangi	107	106	1	0
9	Avudayarkovil	31	32	2	1
10	Gandarvakkottai	50	47	0	0
11	Karambakkudi	48	37	0	0
12	Manamelkudi	34	31	0	0
13	Thiruvarankulam	68	69	0	0
	District	640	646	4	2

Source: Health Departmet, TB Centre and Leprosy Centre, Pudukkottai.

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The higher increase in Pudukkottai block may be attributed to better targeting and reporting of TB cases. All other blocks witnessed a decline in the prevalence of TB. With regard to Leprosy, it can be seen that the number of Leprosy cases registered has been marginal during 2007 and 2012. There seems to be no pattern of Leprosy prevalence and can be said to be random occurrences. So, it can be said that the prevalence of Leprosy was found to be strongly stable in the district during reference years. The presence of granite mining industries in some of the blocks in Pudukkottai may have led to more TB prevalence in the respective blocks. So, rehabilitative ventures through TB-sanatoriums should be initited in the district. More than this, corrective measures need to be enforced in granite quarries in order to control the pollution created by these ventures and safeguard the people working in and around such hazardous activities.

Conclusion

Block-wise demographic profiles show that there has been an increase in the rate of growth of population in all blocks of Pudukkottai district despite the fact CBR and CDR are declining, SC, ST population has increased steadily over a period of ten years in

most of the blocks of the district which illustrates that there is no trace of any permanent migration among such socially oppressed and excluded sections in the district. Sex ratios in the blocks namely Annavasal, Ponnamaravathi, Thirumayam, Audayarkovil and Gandarvakkottai have declined which may lead to gender discrimination and hence need to be addressed. As far as child sex ratio is concerned a watch over by both statutory and Non-statuary steps to be administered in the district as there has been vehement disliking for girl children in almost all blocks of the district.

IMR in blocks namely Aranthangi, Gandarvakkottai, Karambakkudi, Manamelkudi and Thiruvarankulam have increased till 2014 which need to be taken up with health bodies of the blocks. Awareness campaigns regarding gaps between children and reproductive health oriented education and connectivity between remote villages and PHCs need to be ensured. High IMR rates have been noticed in Kundrandarkovil, Ponnamavarathi, Thirumayam, Viralimalai and Thiruvarankulam. Priority in saving mothers instead of mother and child are common reason for low MMR and high IMR. Rise in number of deliveries in government hospitals accounted for fall in SBR which is a healthy symptom in these blocks. Low nutritional status in Pudukkottai, Thirumayam and Avudaiyarkovil needs to be addressed with scaling up appropriate activities. Access to drinking water is worse in Pudukottai and Gandarvakkottai. The government should take necessary steps to improve the situation. Toilet facilities are below 40 per cent in blocks namely Manamelkudi and Thiruvarankulam. Awareness and fund assistance given to build toilets must be enhanced to level of Rs.15,000 per HH atleast for such blocks.