CHAPTER-5

DISEASE PATTERN IN GUJARAT STATE

5.1 Introduction

The state of Gujarat is located on the western coast of India. It shares boundaries with Rajasthan in the north, Madhya Pradesh in the east, Maharashtra in the south, and Arabian Sea in the west. Among all the states and union territories of the country, Gujarat has the longest coastline of 1,600 kms. The present state of Gujarat was part of the Bombay Province of British India and post-Independence state of Bombay, which incorporated both Gujarat and Maharashtra. It was demarcated out as a separate state on 1st May, 1960. Presently, it has thirty three districts including twenty-six existing and seven newly formed districts, which are further subdivided into 226 *talukas*. The state accommodates more than six (6.04) crore persons within its 1,96,024^2 kms. area (Census of India, 2011).

The present form of Gujarat, in most of its part was under the Gaekwad rulers of the Baroda state. The Gaekwad rulers, particularly with the ascendance of Sir Sayajirao Gaekwad III to the throne, emerged as very able administrators who developed unparallel infrastructural facilities in the areas under their rule including infrastructure pertaining to health care (Gazetteer of Baroda State, Volume II, Administration, 1923). Data pertaining to the health care facilities and different diseases pertaining to the Gaekwad period is also properly documented in different sources of which the most important happens to be the gazetteers of colonial India. An attempt based on such sources has been made in the present chapter to analyse the type and pattern of diseases in the period prior to the formation of the present state of Gujarat, followed by the changes during the post formation and contemporary periods. The aspects dealt in the chapter include the prevalent diseases, housing condition, child health, adult health and women health.

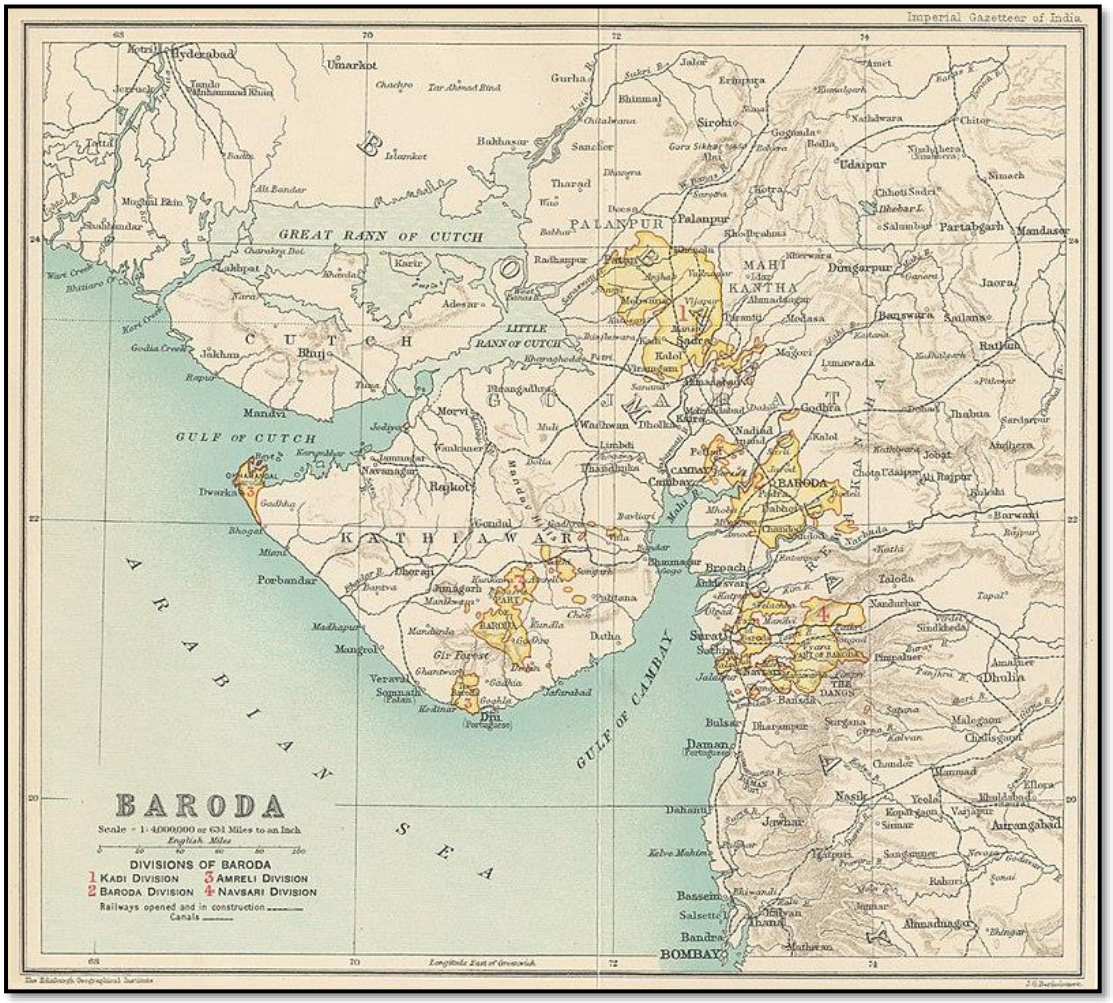
5.2 Prevalence of Diseases in the Past (Baroda State)

Between 1721 and 1949, most parts of present day Gujarat was under the aegis of the Gaekwad dynasty of Maratha confederacy, and was popularly identified as the ‘Baroda State’. This princely state incorporated disjoint tracts of land, sub-divided

into four *prants* or areas, such as Kadi (Mehsana), Baroda, Navsari, Amreli, Okhla Mandal region near Dwarka and Kodinar near Diu (Figure-5.1).

The gazetteer reports that the climate has great impact on the prevalence of diseases. The location of the state and the surrounding sea makes the climatic condition of Gujarat to be hot and humid which leads to the spread of several diseases. The climate of Baroda was hot and dry during summer. The maximum summer temperature varied between 41°C and 45.5°C, and the minimum temperature recorded during the winter season varied between 33.3°C and 4.4°C in the coldest months. The damp heat during the months of October and November caused malaria (Gazetteer of Baroda State, Administration, 1923,352).

Figure-5.1 : Baroda State in 1909



Source:https://en.wikipedia.org/wiki/Baroda_State

The major prevalent diseases of Baroda city as well as the district were malarial fever, infections of respiratory organs and alimentary canal, syphilis, cutaneous (related to skin) diseases and rheumatic infections. Prevalence of diseases like malaria and infection of the lungs mostly occurred after the rainy season and in the months of the cold season. Kadi district experienced diseases like malarial fever, diarrhea, bronchitis, alimentary canal fever and skin diseases. Skin diseases along with malarial fever, diarrhea and bronchitis affected the population of Navsari area. The type of diseases in Amreli district included fever in the rainy season, bowel complaints (intestine), rheumatism, eye diseases, diseases related to the lungs and cholera. Malaria, cholera and small-pox were characteristic diseases of Okhla *mandal* area (p.354). During this period, leprosy and scrofula (a disease with glandular swelling) were wide spread in whole of Gujarat (p. 355) and Baroda state experienced epidemics of various diseases including epidemics of cholera in 1863-64 and 1878.There was an outbreak of plague in Baroda city in 1916, which started from Billimora (Navsari) and slowly spread to other parts of the State. Subsequently, epidemic of influenza engulfed Baroda State in 1918.Climate, habits and modes of living of people have been ascribed as the root causes of these diseases.

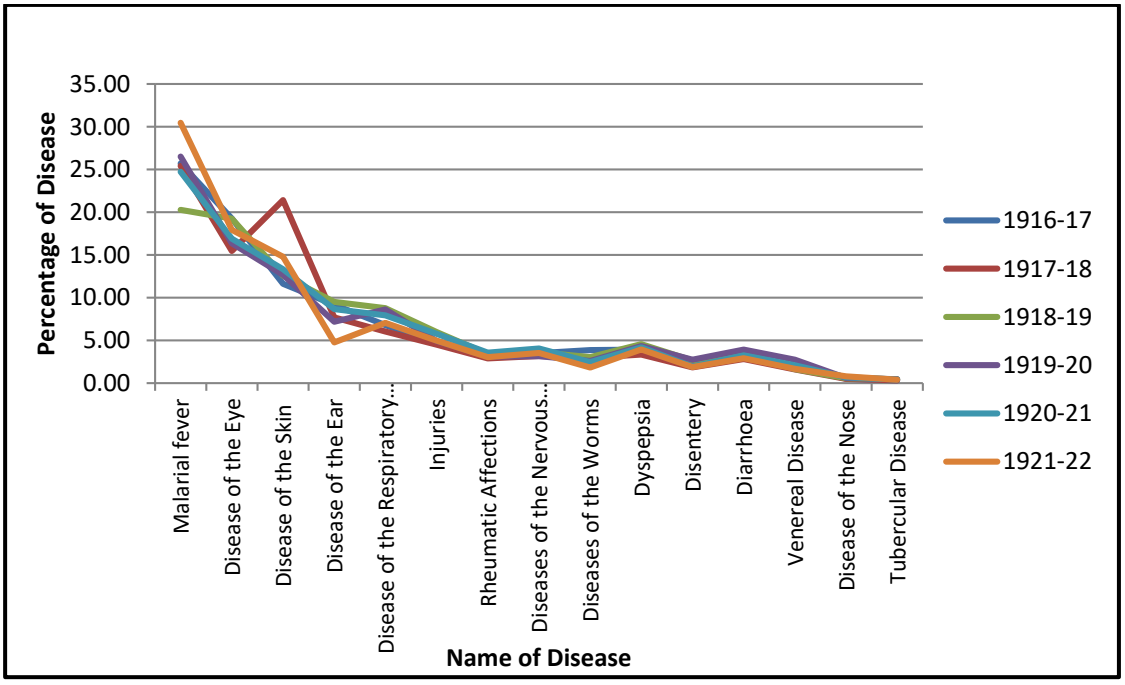
Table-5.1 : Year-Wise Percentage of Patients Treated at Various Hospitals and Dispensaries of Baroda State

Sr. No.	Disease	Percentage to Total Number of Patients Treated in the Year					
		1916-17	1917-18	1918-19	1919-20	1920-21	1921-22
1	Malarial Fever	25.72	25.42	20.28	26.51	24.73	30.47
2	Eye	19.26	15.46	19.25	16.36	16.91	17.93
3	Skin	11.62	21.41	12.58	12.68	13.32	14.79
4	Ear	9.17	7.69	9.51	7.18	8.67	4.77
5	Respiratory System	6.79	6.04	8.77	8.62	7.93	7.05
6	Injuries	4.65	4.51	5.99	4.95	5.78	4.98
7	Rheumatic Affections	3.21	2.89	3.39	3.11	3.56	3.05
8	Nervous System	3.52	3.17	3.62	3.16	4.06	3.53
9	Worms	3.86	2.98	3.05	2.59	2.46	1.82
10	Dyspepsia	3.92	3.35	4.57	4.33	4.19	3.94
11	Dysentery	2.36	1.85	2.66	2.75	1.94	1.88
12	Diarrhoea	3.09	2.81	3.66	3.93	3.24	2.92
13	Venereal	1.97	1.61	1.64	2.75	2.10	1.68
14	Nose	0.53	0.49	0.57	0.61	0.68	0.79
15	Tubercular	0.33	0.32	0.46	0.47	0.42	0.40
Total Patients		100	100	100	100	100	100

Source: Computed from the Gazetteer of the Baroda State, Volume II - Administration, 1923, p.374.

As is clear from Table 5.1, during the first quarter of the last century, more than half of the patients reporting to the hospitals and dispensaries were affected by communicable diseases, which support the observation regarding the then poor hygienic conditions. The dominant diseases during the period between 1916 and 1922 were malarial fever, skin and eye diseases. Over this six year period, one-fourth to one-third of the patients reported for malaria alone. Other prominent diseases during the period, were diseases related to the Eyes (15 to 20%), the skin (11 to 21%), the respiratory system (6 to 9%), injuries (around 5%) and the ears (5 to 10%). Patients reporting with other diseases accounted for less than five per cent of the total registered patients. It may also be worth noting that in most of the cases either the percentage of patients has increased or remained by and large unaltered, indicating persistence of the diseases in the State (Figure - 5.2).

Figure – 5.2 : Year-Wise Percentage of Patients Treated at Various Hospitals and Dispensaries of Baroda State



Source: Computed from the Gazetteer of the Baroda State, Volume II - Administration, 1923, p.374.

5.3 Prevalence of Disease in Contemporary Gujarat

Contemporary Gujarat has 45 per cent of urban households, wherein on an average 4.3 persons live in every house. The religious composition of the state is in favour of the Hindus (88.6%). Among the remaining, Muslims (9.7%) are dominant

leaving only around two per cent space for people professing other religions. The population of SCs (11%) and STs (15%) accounts for about one fourth (26%) of the state total population. The population registered as Other Backward Caste (OBC) accommodates around two-fifth (41%) of the total state population. Around one-fourth (26%) and nearly one-tenth (07%) of the population of the state is in the young (<15 years) and old (>65 years) age cohort respectively. The state has registered a sex ratio of 950 females per 1,000 males, which is relatively higher than the National average of the 940 mark. However, in the context of child sex ratio (884 females per 1,000 males), the scenario is highly discouraging (NFHS-4, Gujarat, 2015, -16,3).

Among the prevalent diseases during the year 2015-16, anaemia occupied the top slot. Anaemia, which is caused by iron deficiency, is a major health problem among women (55%) and children (63%) of Gujarat (NFHS-4, Gujarat, 21-22). Apart from anaemia, other major diseases prevailing in the population are tuberculosis, diabetes, asthma, heart diseases, cancer and malnutrition among children as well as among adults. The under-nutrition cases of children are relatively higher in the rural areas of the state. Among the adults, the young ones (15-19 years of age) in the rural areas and the STs, which are also predominantly rural by residence, are relatively more malnourished (NFHS-4, Gujarat, 20-21).

Besides, within the State, occurrence of disease displays wide spatial variations. The reasons could be many including climate change. Even rapid growth of cities has been found to be responsible for infectious and zoonotic diseases (Iyer et. al, 2014). Higher incidences of enteric fever in Amreli district, hepatitis and diphtheria in Rajkot and Junagadh districts, cholera in rural areas of eastern Gujarat, particularly in the eastern part of Vadodara district, higher number of cases of dengue in central districts and in the urban areas particularly of Ahmadabad, are examples of spatial variation in the disease pattern in the State.

Pattern of disease also vary across sex, residence and age in the State. According to NFHS – 4, Gujarat (2015-16),169 persons per 1,00,000 population have been medically treated for tuberculosis, which is much higher among men (228) than among women (105) and higher in rural areas than in urban areas. Number of diabetic patients in the population of 15 to 49 years are more in the women segment (1,163 per 1,00,000 population) than in the male segment (1,069 per 1,00,000 population). More women (1,348) are affected by asthma than men (934) per 1,00,000 population. More

women (127) are affected by cancer than men (58 in a population of 1,00,000). Gujarat population is almost entirely free from the problem of goiter.

Diseases affecting higher proportion of men than women include, heart diseases and hypertension. While 476 men suffer from heart ailments, 327 women per 1,00,000 population are affected by it. Hypertension cases are 14 per cent among men and 11 per cent among women (NFHS-4, Gujarat, 22-23).

Awareness about HIV/AIDS is comparatively less in the State than in the country as a whole. Around 60 (59%) per cent women (74 % urban and 47% rural areas) and 77% of men (86% in urban and 68% rural areas) have heard about HIV or AIDS. This is less than the National average (women-75.6% and men-88.9%). For protection from HIV/AIDS, 43 per cent women and 69 per cent men in the age group of 15 to 49 years always use condoms, 47 per cent women and 66 per cent men know that having an uninfected partner, who has no other partner, reduces chances of HIV/AIDS infection, and 18 per cent women and 31 per cent men have comprehensive knowledge about the disease (NFHS-4, Gujarat, 24-25).

5.4 Utilization of Health Care

Health care is one of the most important sectors growing in the recent times. In the present decade, lots of private multi-speciality hospitals have come up in the country in general and in Gujarat in particular (Jani, 2009, 39). Consequentially, the use of public health care system by the households remains relatively lower 42.8 per cent (34.2% in urban areas and 49.8% in rural areas) in Gujarat, which is lower than the National average (44.9%). Rather, use of private health care system (56.1%) is more widespread in the State (64.4% in urban areas and 49.3% in rural areas), and is higher than in the country in general (51.4%). The remaining households have reported the use of other types of health care systems. However, it is interesting to note that the share of households availing health insurance facility (23%) like, Rashtriya Swasthya Bima Yojana (RSBY) in the State is comparatively lower than in the country as a whole (33.1%).

The above condition implies that either the state health care mechanism is inadequate (in terms of resources, equipment, and transportation) for the population or the efficiency of the Government health care system is questionable. With the lesser efficiency of the Government health care system, people with relatively better economic condition prefer the private health care system. Today, more than half of

the population in Gujarat prefers to use private health care system, perhaps because of its better quality of services and management. With availability of health insurance facilities people more often, tend to opt for private systems.

5.5 Basic Amenities

Basic amenities such as housing condition (*pucca* house), drinking water, bank and post office, toilet and educational facilities etcetera also have been found to impact the use of health care facilities and the pattern of disease (Chowdhury et. al, 2017). An attempt has been made in this section to bring out the circumstances pertaining to some of these amenities in the State.

5.5.1 Housing condition

Housing condition is found to be relatively better in Gujarat in comparison to the country as a whole. Around 77 percent of the households in the State live in *pucca* houses, which is much above the National share (56.4%). With reference to household level electricity connection, the state (96%) is very close to the National average (97.5%).

5.5.2 Source of Drinking Water

The state is also better off (91%) in terms of improved drinking water supply at household level than the average situation in the country (88.2%). Out of the remaining households, 8.8 per cent households have unimproved source of drinking water. Out of all households having access to improved drinking water facility, 68.4 per cent are covered under piped water supply in the dwelling/yard/plot, 6.7 per cent have public tap/stand pipe, 12.3 per cent depend on tube wells or boreholes and the remaining 3.5 per cent manage with other improved sources.

5.5.3 Other Facilities

Communication system through the use of mobile phone is highly developed. This is evident from the fact that almost the entire (97%) urban and (89%) rural population in the State uses the facility. Similarly use of banking/post office account is very common (89%) among the urban households of the State. Rural households (57%) in the State are however, yet to make optimum utilization of the facility. Open defecation (29%) in the State is comparatively less than the National average (38.2%).

Level of literacy among men (90%) and women (71%) belonging to the age group of 15 to 49 years is significantly high in the State. The future of education in the State also seems to be bright as around 81 per cent of children in the school going age of 6 to 17 years attend school (NFHS-4, Gujarat,4, 34, and 35).

Over all, it can be said that the state has an upper edge over the Nation as a whole with respect to several basic amenities like housing, electricity supply, improved source of drinking water, defecation and schooling facilities etcetera.

5.6 Status of Health in Gujarat

Health condition of the population in the state has significantly improved during the years. This is indicative from the leap that the state of Gujarat has taken in terms of health parameters although there is still a long way to go. Health parameters such as total fertility rate, family planning, maternal health, child health, nutritional status in children and adults, causes of mortality, prevalence of diseases and tobacco consumption in the population have been assessed in the following section to comprehend the issue.

5.6.1 Total Fertility Rate

Total Fertility Rate (TFR) can be defined as the average number of children born to a woman throughout her reproductive span (15-49 years). The TFR is a more direct measure of the level of fertility than the birth rate, since it refers to births per woman.

The TFR is 2.0 children per women in Gujarat, which is less than the National average of 2.18 children per women. Urban population of the state displays a lower TFR (1.8) than their rural (2.2) counterparts. There is also wide variation in the TFR by caste/tribe and women with and without schooling. On an average the gap between two births is around 33.9 months in the State, although a small segment of 9 per cent births take place within 18 months of the last birth. Of the remaining, the gap varies between two years (24%) to three years (56%) (NFHS-4, Gujarat, 5,7 & 44).

5.6.2 Family Planning

Knowledge on contraception has widely spread in the State population. The Contraception Prevalence Rate (CPR) among currently married women of Gujarat in the age group of 15 to 49 is 47 per cent. However, there is wide spatial variation in the

CPR across the State, with Navsari (69%) and Bharuch (68%) districts displaying very high and Panchmahals (24%) and Dohad (31%) districts displaying the lowest CPR. Use of modern methods is higher (43%) in comparison to the use of condom/Nirodh (5%) and Intrauterine or Postpartum Device Spacing (IPDS) methods (3%) (NFHS-4, Gujarat, 8 & 10).

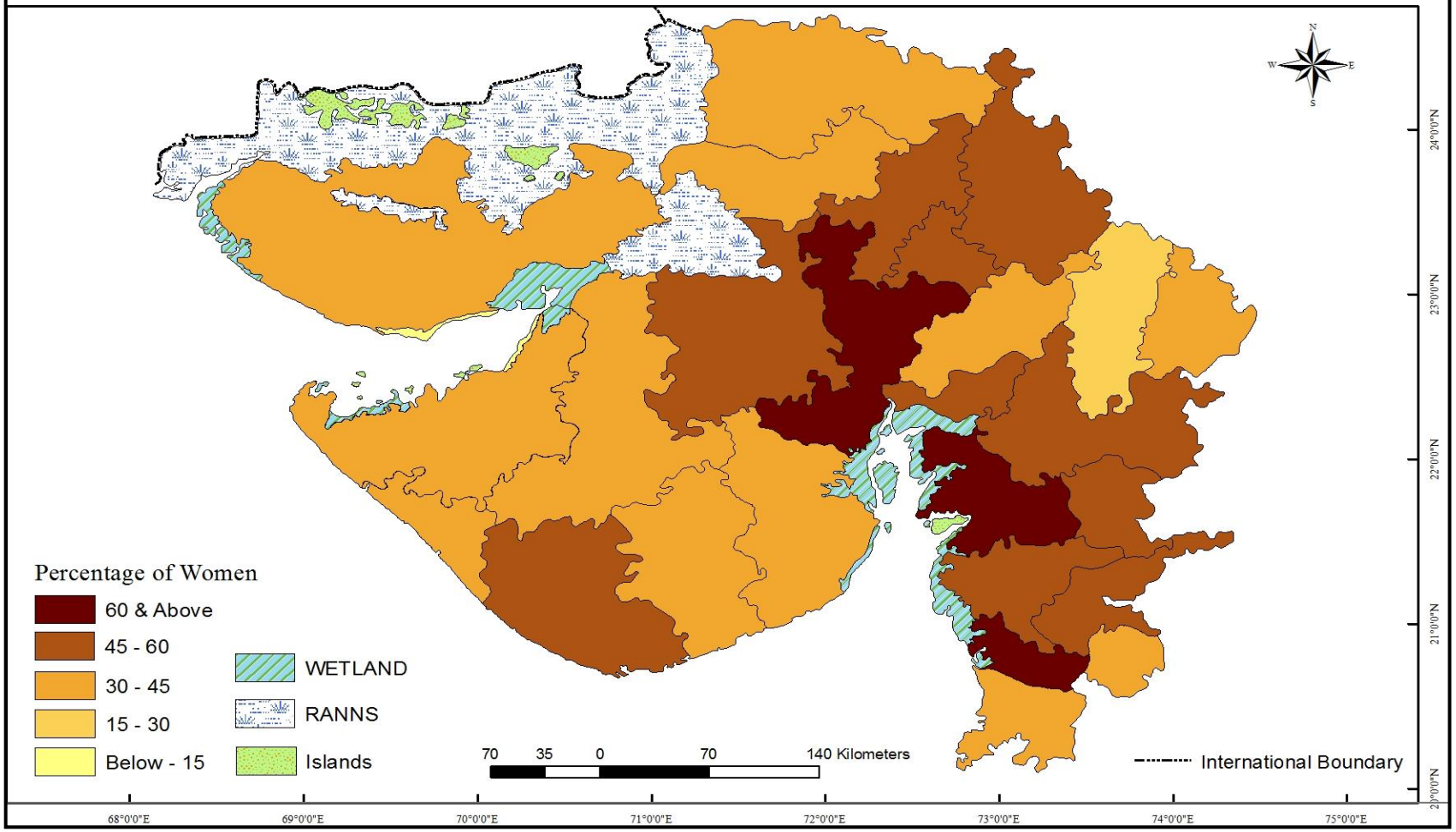
Use of any contraceptive method among the currently married women in the age group of 15 to 49 years is the highest in districts of Navsari (68.7%), Bharuch (68.2%) and Ahmadabad (60.2%) and lowest in Panchmahal district (24%) (NFHS-4, Gujarat,58 and Map-5.1).

Map-5.1

GUJARAT

USE OF ANY CONTRACEPTIVE METHOD

(2015-16)



5.6.3 Maternal Health

Maternal health is one of the most important parameters which impact all other health parameters. The state of Gujarat has improved a lot in case maternal health status, although the progress has been slower and largely undocumented (Mavalankar et. al, 2009,235).

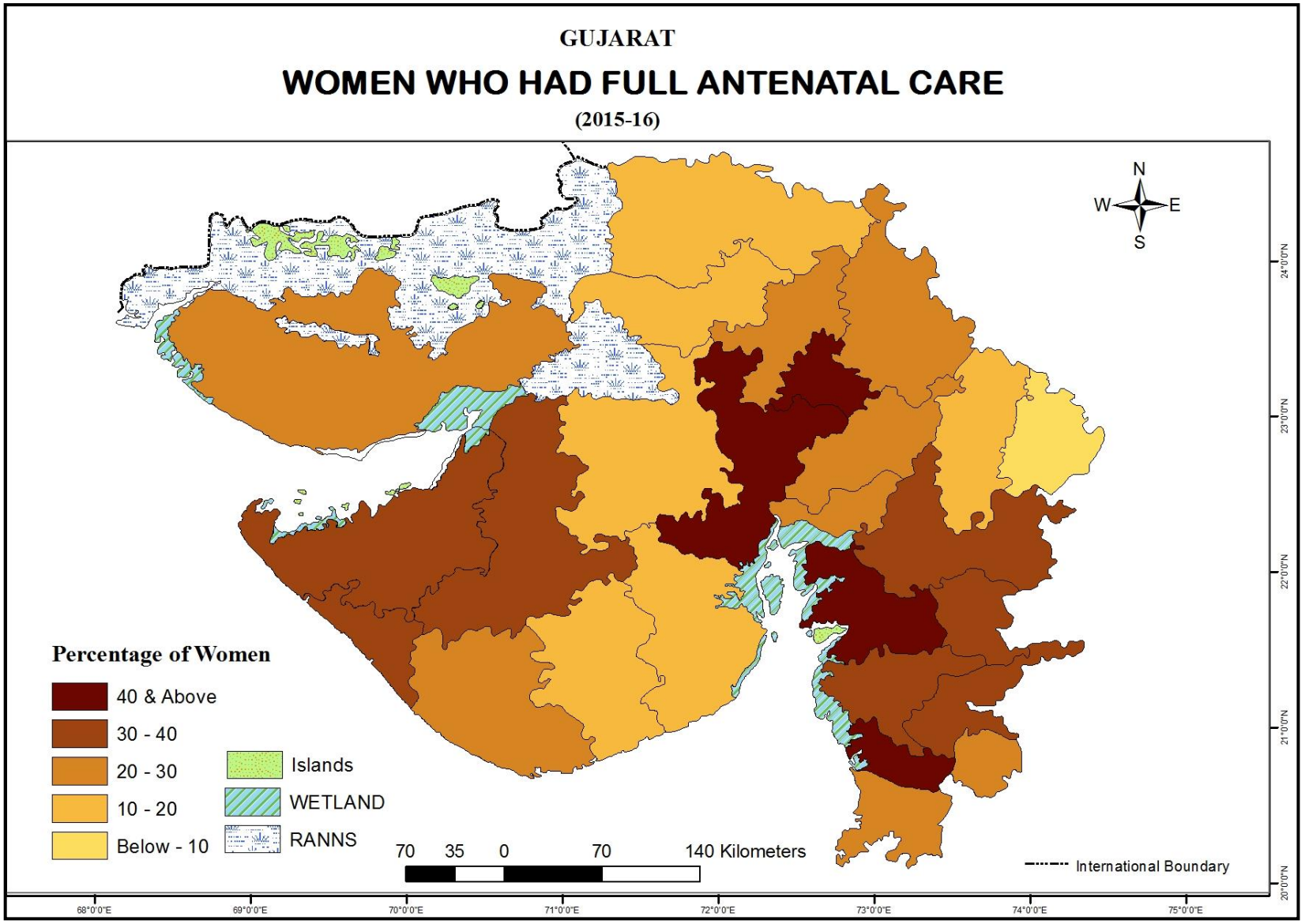
The indicators of maternal health as recommended by the NFHS include pregnant women with anaemia, three antenatal check-ups, institutional deliveries, delivery conducted by health personal and mothers received post-natal care within two days of child delivery.

Share of recipients of Antenatal Care (ANC) from skilled health personal in Gujarat is significantly high (81%). It is reported that mothers receive more than four ANC visits. There are districts like Ahmadabad (96%), Navsari (92%) and Gandhinagar (89%) where majority of the mothers have received the care. On the other hand, mothers in the districts of Amreli (41%) and Dohad (39%) have not been that fortunate.

Percentage of women who had received full antenatal care in Gujarat state (2015-16), is the highest in the districts of Ahmadabad (54.1%) and Navsari (54.2 %) and, the lowest in the districts of Dohad (7.5%) and Panchmahal (14.9%) (NFHS-4, Gujarat, 80 and Map-5.2).

Postnatal care after the last delivery is however lagging in the State with coverage of around 71 per cent mothers. The provision of supplying Iron and Folic Acid (IFA) supplements has covered about three-fourth (76%) of mothers in Gujarat of which 37 per cent have taken the supplement for the recommended 100 days or more. An appreciable proportion (87%) of mothers has been protected against neonatal tetanus through tetanus toxoid vaccination at the time of their last child birth. Majority (89%) of the deliveries are conducted under healthy and hygienic conditions. Among the districts, Porbandar (97%), Mahesana (96%), Jamnagar (96%) top the list and Dangs (53%) remain at the bottom in the matter of healthy and hygienic child delivery (NFHS-4, Gujarat, 12).

Map-5.2


GUJARAT
WOMEN WHO HAD FULL ANTENATAL CARE
(2015-16)
N
W
E
S
Percentage of Women
40 & Above
30 - 40
20 - 30
10 - 20
Below - 10
Islands
WETLAND
RANNS
70 35 0 70 140 Kilometers
International Boundary
68°0'0"E
69°0'0"E
70°0'0"E
71°0'0"E
72°0'0"E
73°0'0"E
74°0'0"E
75°0'0"E
24°0'0"N
23°0'0"N
22°0'0"N
21°0'0"N
20°0'0"N

Cheeranjivi Scheme and Janani Suraksha Yojana have been successfully implemented in the State. However, there are some challenges faced by the Government of Gujarat like, mismanagement, shortage of trained staff, lack of equipments, non-availability of blood in the rural areas in addition to the infrastructural and supply bottleneck problems (Mavalankar et. al., 2009,235). The state Government has taken several initiatives to improve maternal health care services like partnership with private doctors to help delivery care to the poor women, training to medical staff in case of emergencies during delivery and improved transport facilities. With the starting of 108 ambulances, much has improved although still a lot has to be done. With social awareness, evidence based intervention through civil societies and professional bodies, awareness among policy makers and political will, the health status of the state can improve further.

5.6.4 Child Health

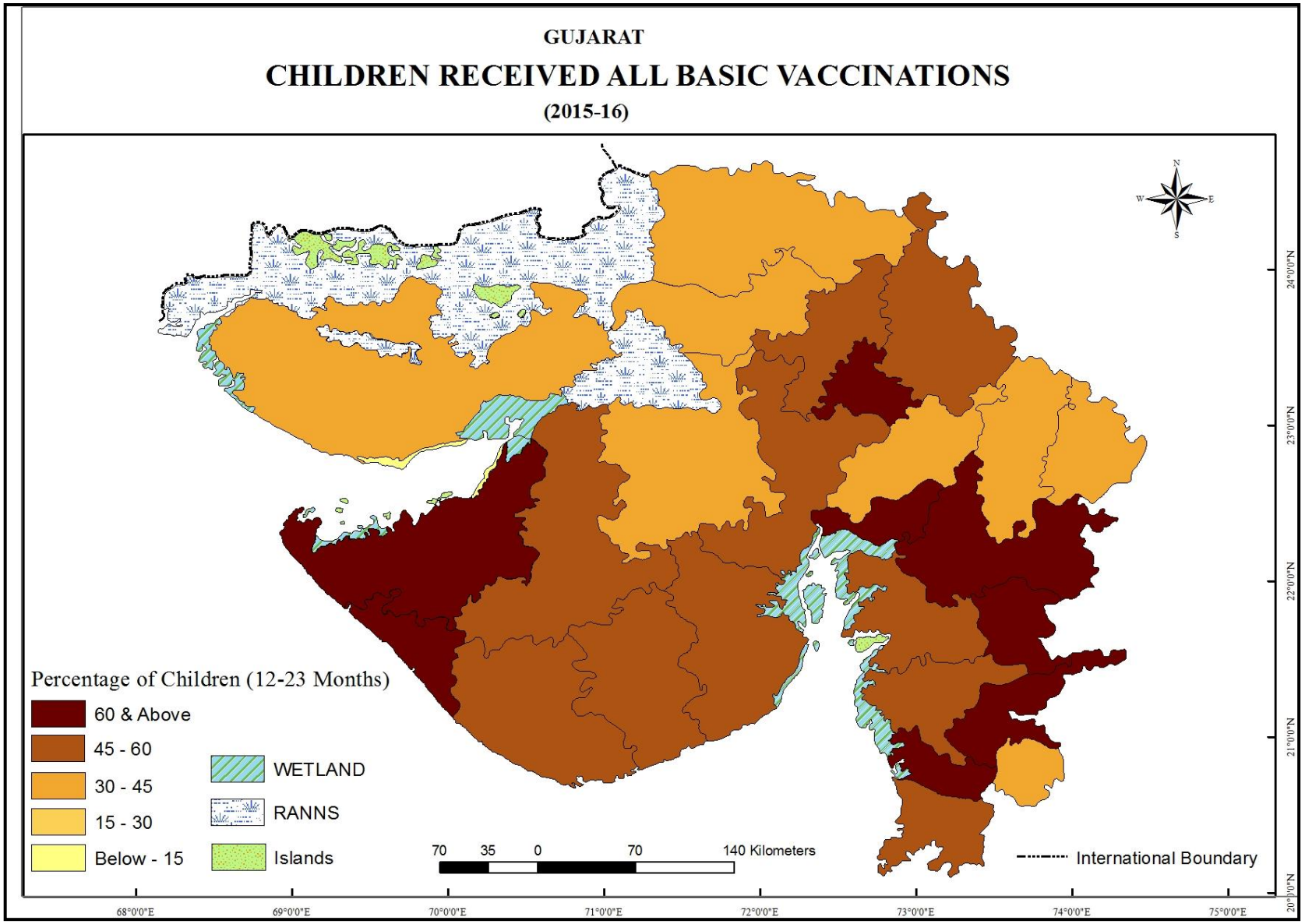
The Child Health Programme under the National Rural Health Mission (NRHM) was formulated to improve the child survival rate and to address factors related to infant and under-five mortality. It is now well documented that child survival cannot be addressed in seclusion as it is intricately linked to the health of the mother.

During 2015-16, the Infant Mortality Rate (IMR) in the State (34 deaths per 1000 live births) remained less than the National level average IMR (41 deaths per 1000 live births). There is of course a significant difference between rural (39) and urban (27) IMR in the State. The IMR is also higher among the SC population (43.9) than the other backward class (36.1) as well as amongst mothers without schooling (39.8).

Basic vaccinations, which include diseases of tuberculosis, diphtheria, pertussis, tetanus, polio and measles have been administered to half (50%) of the State's children in the age group of 12 to 23 months. The State is much behind in this regard in comparison to the country (62%) as a whole. However, BCG (88%), measles (75%), DPT (73%) and Polio 3 vaccinations (62%) have been administered to a relatively larger proportion of such children of the State. District level variation in basic vaccinations is worth noting. While the coverage of children under basic vaccinations is significantly high in the districts of Navsari (79%), Tapi (73%) and Jamnagar (71%), the situation in the districts of Dohad (33%), Patan (31%) and Panchmahals (30%) is pitiful.

Perhaps the awareness regarding the child health care is low in these districts which lead to the lower coverage of vaccination in these districts (NFHS-4, Gujarat, 17 and Map - 5.3).

Map-5.3


GUJARAT
CHILDREN RECEIVED ALL BASIC VACCINATIONS
(2015-16)
Percentage of Children (12-23 Months)
60 & Above
45 - 60
30 - 45
15 - 30
Below - 15
WETLAND
RANNS
Islands
70 35 0 70 140 Kilometers
International Boundary
68°0'0"E
69°0'0"E
70°0'0"E
71°0'0"E
72°0'0"E
73°0'0"E
74°0'0"E
75°0'0"E
24°0'0"N
23°0'0"N
22°0'0"N
21°0'0"N
20°0'0"N

Most common diseases affecting children under five years of age in Gujarat include acute respiratory infection (1%), fever (9%) and diarrhea (8%) (NFHS-4, Gujarat, 10).

Under the Integrated Child Development Services (ICDS) programme, which provides nutrition and health services for children under six years of age, pregnant or breastfeeding women and preschool activities for children of 3 to 5 years through community based *anganwadi* centers, the State has been able to provide services like growth monitoring (58%), supplementary food (57%), health check-ups (54%), early childhood care or preschool (52%) and immunization (51%) (NFHS-4, Gujarat, 18).

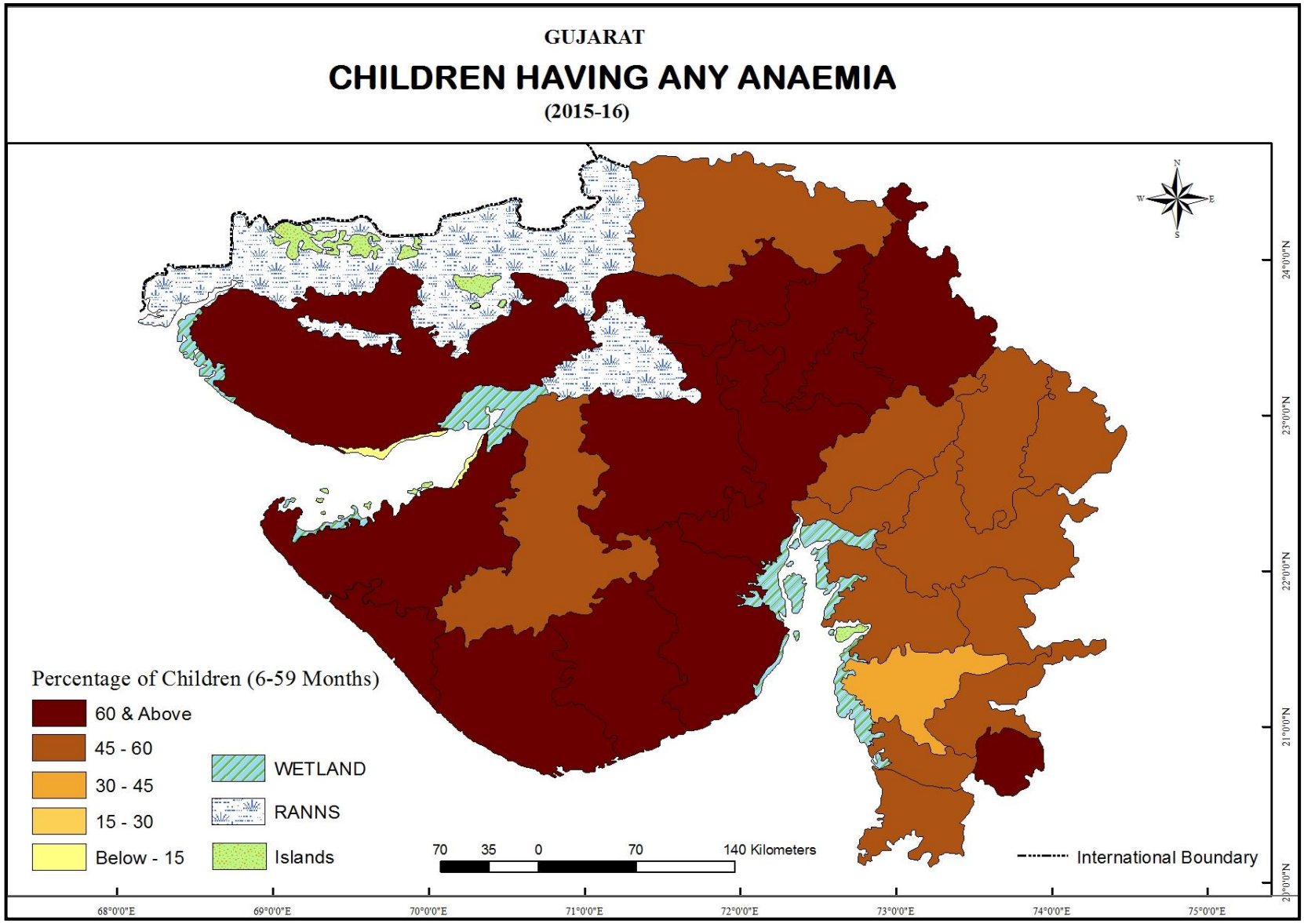
5.6.5 Nutritional Status in Children

Nutrition is required for overall physical and mental growth of a child.

Although a large proportion (52%) of children under five years of age in Gujarat were stunted (lower height than expected at specific age) earlier, the situation has started improving. Nevertheless, there are around two-fifth (39%) of the children in this age group which is still stunted (NFHS-3). Similarly, there has been some decrease in the proportion of underweight (lower weight than expected at specific age) children, but still around two-fifth (39%) of them are in the underweight category. The situation with reference to children who can be classified in the wasted (lower weight than expected for specific height) category has on the other hand deteriorated. The proportion of such children has increased from 19 to 26 per cent during the years. This is a clear indication of increased malnutrition among children in the State. Condition of children in the rural areas of the State is relatively inferior to the children in the urban areas (NFHS-4, Gujarat, 20). Anaemia is also one of the factors that cause poor body growth. Among the children between six to 59 months of age, almost two-third (63%) are anaemic in the State, which is higher than the National average of 58.4 per cent (NFHS-4, Gujarat, 21).

The share of any anaemia in Children (6-59 months) is very high in the western districts of Mahesana (77.8%), Junagadh (77.1%) and Surendranagar (76.8%) and the lowest in the eastern and southern districts of Tapi (49.5%) and Panchmahals (50.2%) (NFHS-4, Gujarat, 121 and Map-5.4).

Map-5.4

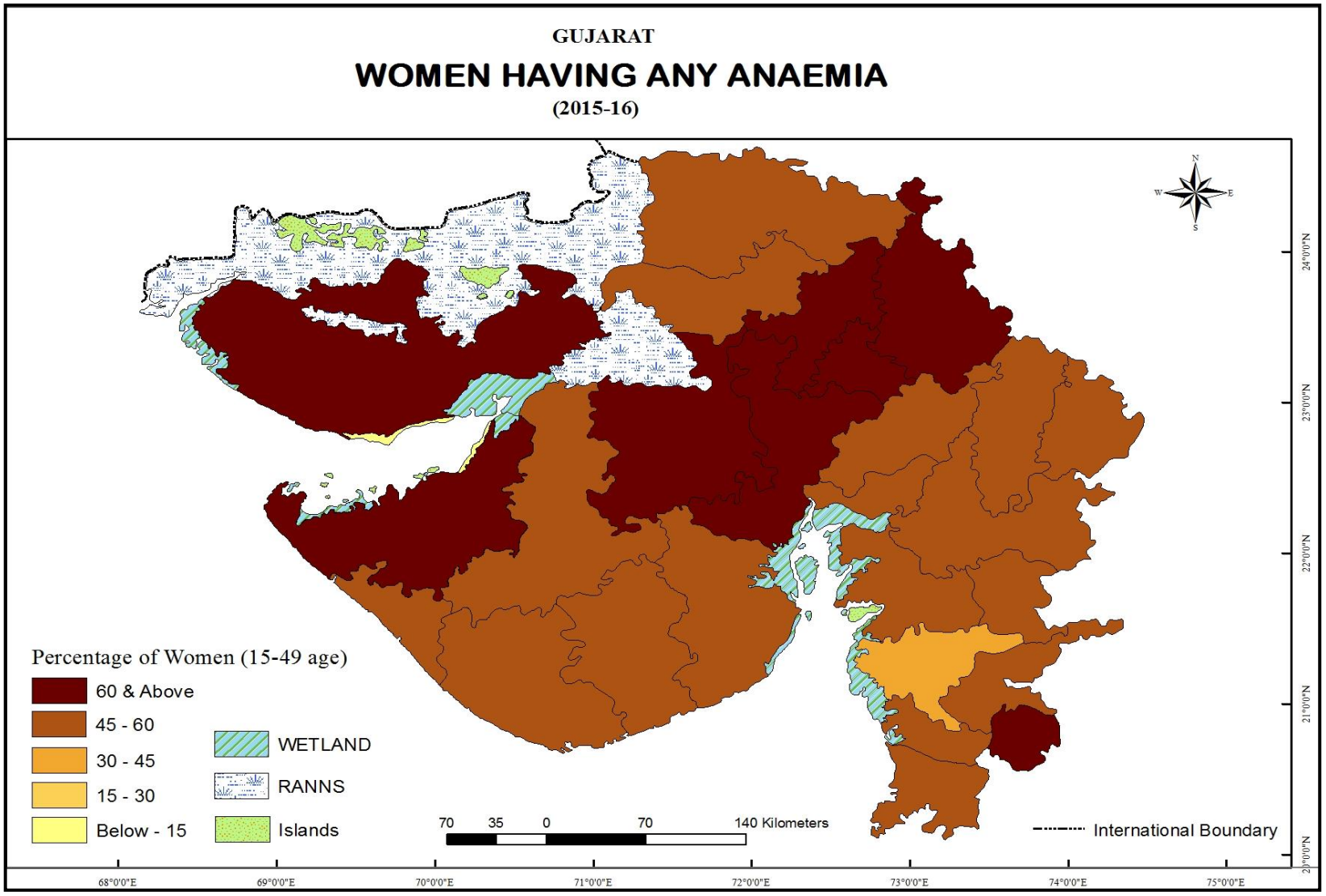

GUJARAT
CHILDREN HAVING ANY ANAEMIA
(2015-16)
Percentage of Children (6-59 Months)
60 & Above
45 - 60
30 - 45
15 - 30
Below - 15
WETLAND
RANNS
Islands
70 35 0 70 140 Kilometers
International Boundary
68°0'0"E
69°0'0"E
70°0'0"E
71°0'0"E
72°0'0"E
73°0'0"E
74°0'0"E
75°0'0"E
24°0'0"N
23°0'0"N
22°0'0"N
21°0'0"N
20°0'0"N

5.6.6 Nutritional Status in Adults

The requirement of nutrition is essential not only among children but also among adults. Better the status of nutrition, higher is the status of health in the population, which in turn creates a healthy nation. Under nutrition is significantly high in the State. More than half of the women (51%) and slightly less than half (44%) of the men in the State are suffering from under nutrition. Earlier a higher percentage of the population (36% both among men and women) was thinner than the expected, which has decreased of late (27% among women and 25% among men). Consequentially, the proportion of overweight or obese population has increased (24% in women and 20% in men). About half of population is of normal weight. Among the adults, under nutrition is more in the younger segment of the population (15 to 19 years of age), in the rural areas and among ST population (NFHS-4, Gujarat, 20-21).

Anaemia is one of the serious health problems, marked by low levels of hemoglobin in the blood. It is caused by iron deficiency. Anaemia is a major health problem in Gujarat. Particularly among women of the State, the share of anaemic patients is significantly high (55%), which is higher than the National average (53.8%). The share of anaemic women is very high in the districts of Dangs (72.2%), Sabarkantha (67.2%) and Gandhinagar (65.8%). Lowest proportion of anaemic women is in the district of Surat (39.0%) (NFHS-4, Gujarat,121 and Map - 5.5). The male segment of the state population is relatively better with around one-fifth (22%) of them reporting anaemic. Majority (40%) of the anaemic women however suffer from mild anaemia, and only a small fragment (1.4%) is affected by severe anaemia. Anaemic condition tends to affect other aspects of health. It is responsible for the maternal mortality, weakness, infectious diseases, decreased physical and mental capability including impaired cognitive performance, perinatal mortality, premature delivery and low birth weight etcetera (NFHS- 4, Gujarat, 21-22).

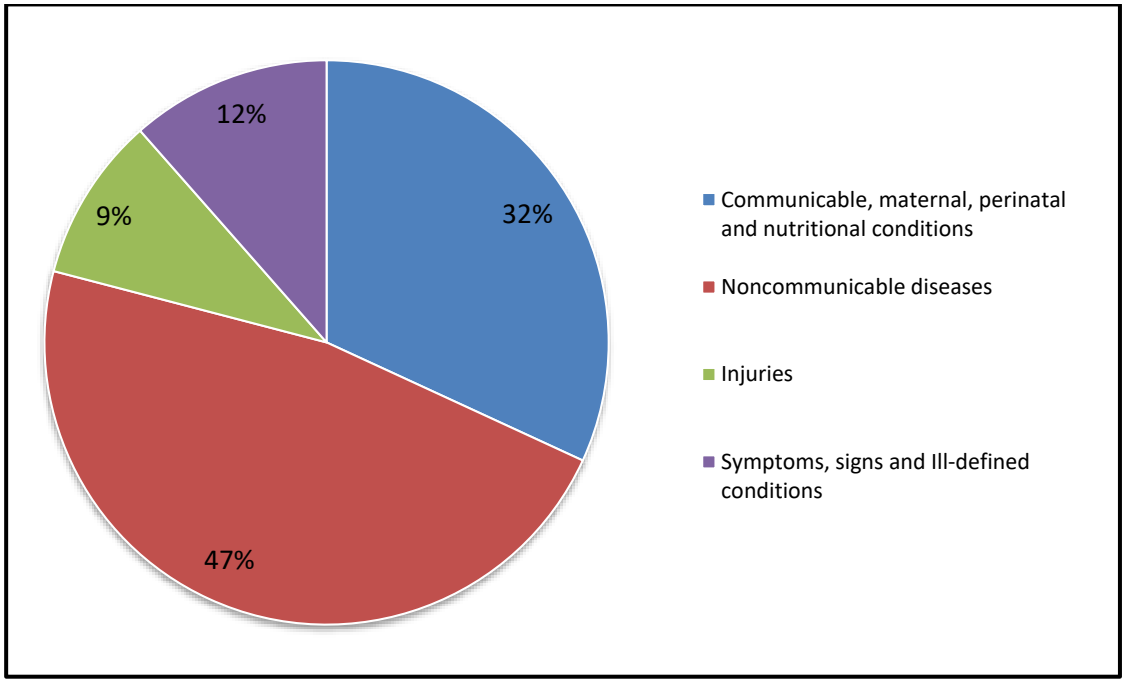
Map-5.5


GUJARAT
WOMEN HAVING ANY ANAEMIA
(2015-16)
Percentage of Women (15-49 age)
60 & Above
45 - 60
30 - 45
15 - 30
Below - 15
WETLAND
RANNS
Islands
70 35 0 70 140 Kilometers
International Boundary
68°0'0"E
69°0'0"E
70°0'0"E
71°0'0"E
72°0'0"E
73°0'0"E
74°0'0"E
75°0'0"E
24°0'0"N
23°0'0"N
22°0'0"N
21°0'0"N
20°0'0"N

5.6.7 Mortality

Non-communicable diseases account for the maximum share of deaths in the country. Although the situation in Gujarat is similar to that in the country (Fig. 5.3), proportionately (47%) less deaths take place in the State than in the country due to such diseases. Deaths due to injuries (9%) are also less in the State than in the Nation. Rather, the share of deaths caused by communicable, maternal, perinatal diseases and under-nutrition is higher (32%) in the State than in the country as a whole. So also is the case with respect to deaths due to symptoms, sign and ill-defined conditions (12%) (Sample Registration System: Causes of Death, 2007-2013).

Figure-5.3: Deaths by Major Cause Groups in Gujarat: 2007-2013

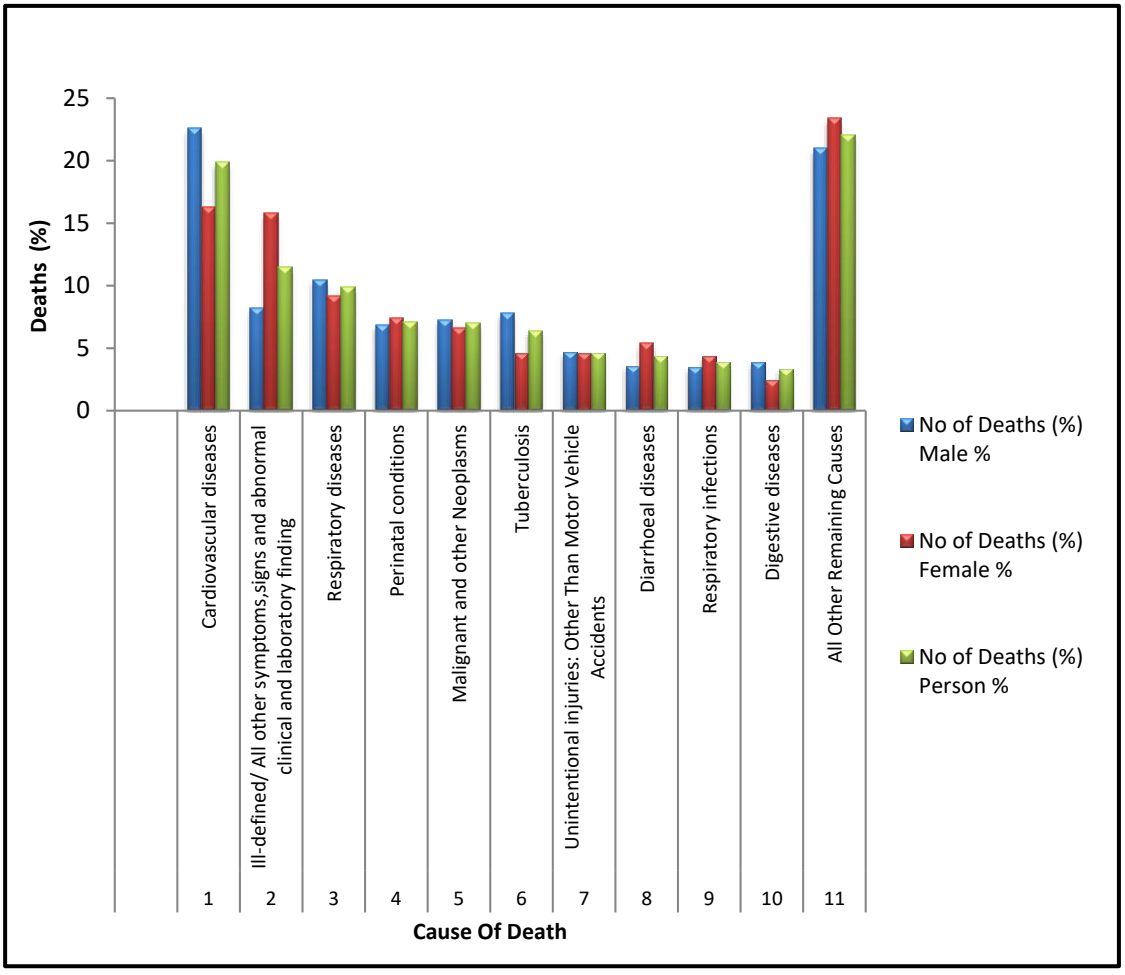


Source: Causes of Death 2007-2013, Sample Registration System.

While analysing the causes of deaths among all age groups (Fig. 5.4), it was seen that 19.9 per cent of death was due to cardiovascular diseases, in which causalities among males (22.6%) was more than among females (16.3%). Close to 12 per cent of deaths occurred from ill-defined/all other symptoms, sign and abnormal clinical and laboratory findings. Such deaths were however, higher (15.8%) in females than among males (8.2%). Nearly 10 per cent died from respiratory diseases with minor variation between the two sexes (males - 10.5% and females- 9.2%). Deaths also occurred due to perinatal conditions and malignancy (7.1%), and neoplasm (7%). Tuberculosis takes a bigger toll (6.4%) in the State than in the

country and is more common among males (7.8%) than among females (4.6%). Other diseases like diarrhoea (4.4%), digestive diseases (3.3%), unintentional injuries other than motor vehicle accidents (4.6%) and respiratory infections (3.9%) etcetera have been responsible for relatively lower percentage of deaths in the State. Besides these diseases, there are a few more diseases, classified as, 'all other remaining diseases', that have accounted for more than one-fifth (22.1%) of the deaths in the State.

Figure-5.4 : Causes of Death in all ages in Gujarat State: 2007-2013



Source: Causes of Death 2007-2013, Sample Registration System.

5.7 Tobacco/Alcohol Consumption

Tobacco is one of the leading causes of death in the World. Tobacco/alcohol consumption causes diseases of lungs cancer, mouth cancer and cardio-vascular diseases. Control on its consumption is absolutely essential for better health status. Around half of the male population (51%) in Gujarat consumes tobacco in one or other form *(gutkha*, *paan masala* and cigarettes or *bidis)*, which is more than the National average (45.5%) tobacco consumption rate. Although among women

tobacco consumption in general is less in the country (6.8%), as well as in Gujarat (7%), relatively higher proportion of females in the State consume tobacco than in the country.

Heavy consumption of alcohol leads to disease like hypertension and heart attack. The consumption of alcohol is very less in Gujarat (11%). Higher percentage of consumption is recorded in the rural areas of the State. The relatively lesser consumption of alcohol in the state may be due to its 'dry state' status, under which possession or consumption of alcohol is treated as illegal and a punishable act (NFHS-4, Gujarat, 23).

5.8 Conclusion

Gujarat was affected and dominated by communicable types of diseases in the past (1721-1949). The prevalence of diseases like malaria, infection of the lungs, diarrhea, bronchitis, alimentary canal fever and skin diseases used to be common ailments in the State. There were also epidemics of leprosy, scrofula and influenza. According to the National Family Health Survey (NFHS-4, Gujarat), 91 per cent of the households in the State have access to safe drinking water, 77 percent households live in *pucca* houses and 96 percent households have electricity connection. Open defection is fast decreasing and is associated with less than a third (29%) of the households. The TFR is 2.0 children per women in Gujarat state, which has declined by 0.6 children. Almost everyone in Gujarat has the knowledge of contraception. Avery high proportion (81%) of mothers has received antenatal care (ANC) for their last child birth from skilled health personal.

Infant mortality rate is 34 deaths per 1,000 live births in Gujarat. Half of the (50%) children in the age group of 12 to 23 months have taken all basic vaccinations for the childhood diseases such as tuberculosis, diphtheria, pertussis, tetanus, polio and measles. People are affected by communicable as well as non-communicable diseases and there is shift from communicable to non-communicable type of diseases in the population of the State. The common diseases are tuberculosis, diabetes, heart disease, cancer and hypertension. The prevalence of medically treated tuberculosis is 169 persons per 1,00,000 population. Diabetic women are higher (1,163 per 1,00,000) than diabetic men (1,069 per 1,00,000 population). Similarly, more women (1,348) in

a population of 1,00,000 have been affected by asthma than their male counterparts (934). Gujarat population is almost entirely free from the problem of goiter.

Diseases affecting higher proportion of men than women include, heart diseases and hypertension. While 476 men suffer from heart ailments, 327 women per 1,00,000 population are affected by it. Hypertension cases are 14 per cent among men and 11 per cent among women. Consumption of tobacco in the form of *gutkha, paan masala* and cigarettes or *bidis* is relatively higher (51%) in the State as compared to the country (45.5%).

Non-communicable diseases take the maximum share of deaths in the country. Although the situation in Gujarat is similar to that in the country, proportionately (47%) less deaths take place in the State than in the country due to such diseases. Deaths due to injuries (9%) are also less in the State than their National averages. Rather, the share of deaths caused by communicable, maternal, perinatal diseases and under-nutrition is higher (32%) in the State than in the country as a whole. So also is the case with respect to deaths due to symptoms, sign and ill-defined conditions.

Based on the forgoing analyses, it can be said that over time, the pattern of diseases in the country has been changing from infectious or communicable diseases to non-communicable diseases. Similar temporal change in the pattern of diseases is also observed in the state of Gujarat. This proves the second hypothesis that states, “With passage of time, disease patterns and morbidity rates tend to undergo change/display spatial variations’’.

Anaemia is a severe health problem in Gujarat particularly among women (55%) and children (63%). This compares very poorly with the National scenario (53.3% in women and 58.4% in children). The share of anaemic women is very high in the districts of Dangs (72.2%), Sabarkantha (67.2%) and Gandhinagar (65.8%). The lowest proportion of anaemic women is in the district of Surat (39.0%). The male segment of the State population is relatively better with around one-fifth (22%) of them reporting anaemic. Malnutrition in children and adults is another acute health problem. Higher under nutrition in children is recorded in the rural areas than in the urban areas of the State. Among adults, under nutrition is more in the younger segment (15 to 19 years of age), in the rural areas and among ST population. Among infectious diseases, the State has on record the incidence of cholera, diphtheria, hepatitis, enteric fever and dengue. Among non-infectious diseases, the prevalence of diabetes and asthma is higher amongst the population than heart diseases and cancer.

Use of public health care system by the households in Gujarat is relatively lower (42.8% in all areas, 34.2 % in urban areas and 49.8 % in rural areas) than the National average (44.9%). Rather, use of private health care system (56.1%) is more widespread in the State (64.4% in urban areas and 49.3% in rural areas) and is higher than in the country in general (51.4%).

In terms of majority of the basic amenities like housing, electricity supply, improved source of drinking water, defecation and schooling facilities etcetera, it can be said that the State has an upper edge over the Nation as a whole.

In the final analysis, it would not be wrong to say that, despite better infrastructural facilities including health infrastructure, basic amenities and higher level of literacy and general awareness in the population about different issues relating to health, the State exceeds in the incidence of certain diseases compared to the Nation as a whole. The situation therefore is not only a matter of concern, but also deserves closer scrutiny.