District Human Development Report Ahmedabad

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Gujarat Social Infrastructure Development Society

General Administration Department (Planning)

Government of Gujarat, Gandhinagar

District
Human Development Report
Ahmedabad

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MESSAGE

Gujarat enjoys the reputation of being the most progressive and well-administered State in the country. The State Government is aware that although progress has been achieved in various sectors since the State's inception much remains to be done in many fields. The Government is, therefore, making strenuous efforts to provide basic minimum services to the people, including drinking water, housing, health, education, livelihood opportunities etc. The issues like securing peoples participation, poverty alleviation, social protection to the poor, removal of regional imbalances, good governance are also high priority areas of focus on the agenda of the Government. We are committed to the cause of Human Development.

I compliment the IIT- Gandhinagar for collaborating with the State Government in preparation of the District Human Development Report of Ahmedabad District, which provides an objective, in-depth analysis of the present status of various aspects of human welfare in the district. I also compliment the GSIDS, General Administration Department (Planning) for undertaking this project.

I am sure, the comprehensive document, so meticulously prepared, providing realistic assessment of the current status of the district and will serve as a guide for future planning in various fields which leads towards inclusive development of the people of the district.

I appreciate the endeavor.

Trivedi

(Pro. Vasuben Trivedi)

सत्यमेव जयते
Government of Gujarat

MESSAGE

Human Development is a development paradigm which is beyond mere rise or fall of national incomes. It is about creating an environment where people can develop their full potential and lead productive, creative lives in accordance with their needs and interests. People are the real wealth of nation. Development is thus about expanding the choices people have to lead lives that they value.

The District Human Development Report is a Document which gives the present status of Human Development in different talukas of the District. Human Development requires focus on the basic as well as crucial indicators of Human Development. Thus this report has highlighted three important pillars which are: Education, Health and Livelihood.

I commend the efforts put in by stakeholders in preparing this publication and hope that this will be useful to all the state & district level officials, policy makers and planners in working towards improving Human Development scenario of the District.

(S. Aparna)
Principal Secretary (Planning)
& Chairperson, GSIDS

Rajkumar Beniwal IAS
Collector & District Magistrate,
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Dt. : 28/04/2016

Preface

A District Human Development Report (DHDR) has to basically address the issue of formulation of a strategy, which will accelerate the pace of Human Development. DHDR of Ahmedabad is prepared to get deeper understanding of the issues related to Human Development at the district & taluka level and thus help in formulation of developmental plan & policies. This report covers main three aspects of Human Development—education, health and standard of living including latest information as far as possible in every dimension. The recommendations of the report are indicative and point towards planning for further development of the State.

In Introduction the report has explained the overall concept Human Development along with the method of calculation of the Human Development Index and the importance of the District Level Human Development Report. Finally it has calculated & presented the Relative Human Development Index at Taluka level to assess the performance of talukas in terms of human development indicators.

The second chapter has described about the demographical Status of the district which includes population status, population growth rate, gender ratio, percentage of ST/SC/other & religion wise population etc., examined at taluka level. It is important to note here that though the gender ratio of the district has risen over the last decade, all other districts in the state (except Surat), have performed better than Ahmedabad district in 2011 in terms of improved gender ratios.

The status, issues and challenges of education of Ahmedabad district has been discussed in third chapter. Analysis of literacy rate across gender, region (rural-urban) and social group, along with enrolment and dropout rates (primary) is presented. Chapter also discussed on education infrastructure like number of schools, access to drinking water and sanitation facilities in school, etc. as well as the quality of the educational status of the district has also been discussed. Data shows that literacy rate

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of Ahmedabad district (85.37%) is the highest in the state also exceeds the national average by 10% (Census 2011) but gender and regional disparities in education is also highly visible.

Chapter fourth has been concentrated on the overall health Status of the District. The access to healthcare organizations like Hospital, CHCs, PHCs and sub-centers, along with the mother & child Health Care indicators have been discussed elaborately. The details of various diseases are also discussed in this chapter. Report shows that Ahmedabad district performs well in institutional deliveries; immunization of young children against tuberculosis, measles and polio; and meeting the Government of India norms of the average rural population served by government health centers.

The report has also shown the overview of livelihood opportunities and challenges in district. Livelihood generated through agriculture, industries, MSMEs is discussed in this report. Household assets & amenities have also been discussed to understand the quality of the standard of living of the people of Ahmedabad district (which includs access to drinking water, sanitation and drainage facilities, fuel usages etc.)

This report is an attempt to precise the status of Ahmedabad District in the aspect of Human Development. It is hoped that this report would be a very useful document to those who are involved in District Human Development Plan.

April 2016
Ahmedabad

Rajkumar Beniwal (IAS)
District Collector & District Magistrate

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Foreword

Human Development is a development paradigm that is about much more than the rise or fall of national incomes. It is about creating an environment in which people can develop their full potential and lead productive, creative lives in accord with their needs and interests. People are the real wealth of nations. Development is thus about expanding the choices people have to lead lives that they value.

The Human Development approach arose in part as a result of growing criticism to the leading development approach, which presumed a close link between national economic growth and the expansion of individual human choices. As of 1990, the human development concept was applied to a systematic study of global themes, as published in the yearly Global Human Development Reports under the auspice of the UNDP.

The Human Development story of India is unique in its kind. India initiated Human Development issues during 8th Five Year Plan (1992-97). In order to integrate Human Development into state planning in India the preparation of reports at state level has been started. Now-a-days the Gujarat State is on the fast track of development. Planning Commission-Government of India and UNDP had partnered Strengthening State Plan for Human Development (SSPHD) programme, under which the Government of Gujarat had initiated the process of integrating Human Development in planning and policy documents.

The preparations of DHDR (District Human Development Report) mark the beginning of the process whereby people is mobilized and actively participate in the development process. In the year 2008-09, the state government has initiated the work of preparing District Human Development Report.

The DHDR is expected to be an important document for formulating the District Human Development Plan. The report has examined the status of Human Development in different talukas of Jamnagar District. The report depicts the present status of the district with available information for various indicators of Education, Health and Livelihood.

I hope that this report will form a milestone in the overall planning and development of the district. DHDR will also be very useful to concerned State and District level Officials, policy makers, decision maker and NGOs.

Bhargavi Dave (IAS)
District Development Officer, Ahmedabad

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This Report has been carried out as part of a tripartite MoU among the Indian Institute of Technology, Gandhinagar (IITGN), District Collector, Ahmedabad and Gujarat Social Infrastructure Development Society, Gandhinagar (GSIDS). We deeply acknowledge the data support and guidance that we have received from the staff members of our MoU partners- the Collector's Office and GSIDS. Our team also included a group of dedicated students who have helped us at different stages of this work. We appreciate support of our home institution (IITGN) for encouraging and facilitating this work. We have listed the names of the people who were involved in supporting this work.

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Finally, we would also like to acknowledge the help that we received from Prof. S.P Mehrotra (Dean, Research, IITGN), Ms Renu Seth (Program Head, Pratham, Gujarat) and Mr. C.S Sharma (Education Consultant, IITGN) in supporting this project.
We hope the report will be useful to policy makers, administrators, academician, researcher and all those who are interested in issue of Human Development

Ahmedabad, 2016

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EXECUTIVE SUMMARY

This **District Human Development Report (DHDR)-Ahmedabad, 2015**, has been prepared keeping in mind that real human progress is not a story of simple economic expansion. This is particularly crucial in the context of the district of Ahmedabad that lies in the forefront of the debates on the state of Gujarat's growth story led by an efficient nexus of civic administration, public-private partnerships, high levels of capital investment and rapid infrastructural development. While studies assessing the celebrated growth model of Gujarat are not rare in the contemporary development literature, **the strength of this Report lies in a detailed examination of systemic and structural factors such as health, education and livelihoods by taluka levels of the district of Ahmedabad.** This allows us to map not only opportunities, challenges and vulnerabilities by social fault lines of gender, caste and economic status but also identify spatial inequalities along rural-urban lines within the district of Ahmedabad. The Report also provides a ranking of talukas through a Relative Human Development Index (R-HDI) that offers an understanding of how the rural and urban talukas of the district are performing in terms of health, education and economic wellbeing.

While in-depth analysis of social and economic determinants of both success and inequality have been limited due to data unavailability at disaggregated levels, but we do hope that addressing these issues will provide a useful supplementary input for future policy dialogue in the district.

In the next few sections we provide highlights of our findings from the four themes that this Report has covered: population, education, health and livelihood.

Population & Demography

Ahmedabad district is the most urban and populous district in the state of Gujarat. Population-wise, the district is ranked 8th in India out of the total 640 districts in the country (Census, 2011). Again, in 2011, about 84.04% of the population lived in urban areas and 15.96% population lived in rural areas. Overall, there has been 30.1% increase in the urban population in the district over a decade.

The sex ratio at birth has increased from 892 in 2001 to 904 in 2011. It is important to note that though the sex ratio of the district has risen over the last decade, all other districts in the state (except Surat), have performed better than Ahmedabad district in 2011 in terms of improved sex-ratios. These suggest a distinct "daughter deficit" in the population of the district and perhaps a deep-seated culture of son preference.

Ahmedabad district is diverse in terms of **social groups**- caste and religious categories. By the latest census (2011), about 83.76% of the population are Hindus and 12.24% of the population are Muslims in Ahmedabad district. Other religious communities-Christians, Sikh, Buddhist and Jain-account for 0.7%, 0.2%, 0.06% and 2.9% of the population respectively. About 0.03% of the population in the district belongs to other religions and persuasions and 0.1% of the population did not state their religion. Scheduled Caste (SC) population in Ahmedabad district has been reported to be 10.5% of the total district population while the Scheduled Tribe (ST) population in Ahmedabad district accounts for 1.2% of the total district population (Census, 2011).

Education

The district of Ahmedabad has been an important locus for higher education opportunities in the state of Gujarat even prior to India's independence. Political leaders such as Mahatma Gandhi, Sardar Patel who successfully led India's freedom struggle, philanthropists and industrialists have established several schools and higher education institutions in Ahmedabad. Contemporary Ahmedabad city retains this convention and boasts of several prestigious public and private universities, colleges, and research institutes of national importance.

Not surprisingly, data shows that **literacy rate** of Ahmedabad district (85.37%) is the highest in the state and surpasses the national average by 10% (Census 2011). However, gender and regional disparities in education outcomes persist. For example, female literacy is close to 80% and the gender gap has reduced from 16.48% to 11.39 % between 2001 and 2011. However, gender gap in rural areas are remains high at 24.45 %. Rural-urban gap in 2011 was 16.88%, showing a decline of 4% from 2001. Ahmedabad city has the highest literacy of 88.29%. Talukas closer to Ahmedabad city such as Dascroi, Dholka and Sanand have high literacy, where as those farther at the southern end like Ranpur and Barwala have lower rates of about 70%. Similar trends are observed in female literacy too, with Ranpur recording the lowest rate of 58.09%.

Schooling access has increased over time with **enrolment figures** in primary school reaching near 100%. Government schools in the district, however, seem to have not caught up with this growth. The number of government schools has declined from 1501 in 2009-10 to about 1364 in 2014-15. In the same period, the number of private schools has increased steadily with almost 50% rise in schools from 847 to 1472. English as a medium of instruction and perception that private schools are better performing than government are cited as the main reasons for shift to private schools. Secondary school enrolment especially for girls is far from satisfactory. In Ahmedabad rural areas government secondary schools were started from 2005. In 2014-14 there were totally 20 government and RMSA secondary schools, and five government higher secondary schools in Ahmedabad rural areas. Enrolment in these government secondary school (rural) was 1530 in 2014. Granted secondary schools dominate the rural areas, with more than 90,000 enrolment in secondary schools and 57,000 in higher secondary schools.

The **Gender Parity Index** for primary education seems to have settled down around 0.85; much of the gap can be explained by skewed sex ratio in the 5-14 age group. Net enrolment in primary schools is about 82%, while in upper primary it drops to 64%. There is far more convergence between the first grade and VIIth grade enrolment in 2013 than 2005. Dropout rates have been reduced to 2% in primary and 2.5% in upper primary, but gender differences persist with girls dropping out at twice the rate than boys in upper primary. Gender parity varies from 0.46 to 0.59 in secondary schools and 0.23 to 0.51 in higher secondary schools in

Ahmedabad rural talukas. High dropout rates of girls in secondary schools in rural areas need to be addressed with priority.

More and more schools are complying with the RTE norms on **school infrastructure**, qualification of teachers and pupil-teacher ratio. Nearly all schools in Ahmedabad district have drinking water, electricity and compound wall.

While school infrastructure and overall enrolment-based education indicators seem favourable in the district of Ahmedabad, there are growing concerns about the lack of **education quality** and poor **learning outcomes** of children. ASER survey has pointed out continued fall in learning levels in both reading and arithmetic since 2010. Government's own Gunotsav program which assesses schools on multiple parameters including student learning, shows drop in both number and percentage of schools with A and A+ grades. This is a critical issue which calls for collective efforts from administrators, school authorities, teachers and SMCs to ensure improved learning outcomes among children in the district.

Many initiatives have been taken by state government to increase enrolment (e.g. *Shala Praveshotsav*), to prevent dropouts of girls in primary schools (e.g. *Kanya Kelavani*) in schools, assess the quality of schools and students (e.g. *Gunotsav*). Innovative programs to make learning fun using activity based learning (e.g.*Pragna* Classrooms), and use digital platforms for learning (smart schools) have also been started by state government. These programs, schemes and school systems should be carefully evaluated and successful initiatives can be scaled up to reach all schools. Successful residential schools systems like Jawahar Navodaya Vidyalayas and Kasturba Gandhi Balika Vidyalaya (KGBY) have proven track record of improved learning levels in upper primary and secondary schools and preventing dropout rate of girls can be incorporated by the state government.

Health

The areas where Ahmedabad district performs well are: the proportion of expectant mothers who deliver in institutions; immunization of young children against tuberculosis, measles and polio; and meeting the Government of India norms of the average rural population served by government health centers.

The district (excluding Ahmedabad City) has achieved **institutional delivery** rates of ~98%. However several other districts have achieved 100% and Ahmedabad ranks 11th out of 26

districts on this indicator. Among the talukas of Ahmedabad district, Daskroi is the best performer in 2012-13 (about 97% institutional deliveries) while Dhandhuka and Barwala need attention (88% and 86% respectively). Another indicator where the district performs well is immunization of newborns with BCG, reporting a coverage figure close to 100% of all live births (ranked 6 of all districts). Coverage of measles and polio vaccines (both at ~97%) are also high in the district although there is room for improvement as 14 other districts report better coverage.

In terms of providing **health services** and the norms for the average rural population served by Primary Health Centers, Sub-Centers and Community Health Centers (CHC), Ahmedabad district generally performs well. The CHC in Dholka taluka is overburdened serving an average of about 169 thousand people. What needs urgent attention is that 5 out of 12 CHCs in the district have no specialized doctors and rely on the services of MBBS graduates, thus defeating the purpose of establishing CHCs. The state-level health statistics report provides no information on the extent to which staff positions are filled up in rural health centers of different districts—an information gap that needs to be addressed.

Data on **underweight** prevalence in children aged 6 months to 6 years presents an interesting picture. The proportion of underweight among all children aged 6 months to 6 years who were weighed at Anganwadis in the district has shown a rapid downward trend in the last five years, falling from 44% in 2010 to 13% as per the March 2015 ICDS Monthly Performance Report (MPR). However, the district still ranks 12th out 26 in the proportion of children who were free of underweight. The difference is dramatic if we examine the district after excluding Ahmedabad City,–going from 53% in 2010 to 4% in March 2015. While there is variation between talukas it is the time trend that is remarkable. The proportion of underweight among all children aged 6 months to 6 years who were weighed at Anganwadis in the district has shown a rapid downward trend in the last five years, falling from 48% in 2010 to 9% as per the March 2015 ICDS Monthly Performance Report (MPR). While acknowledging that these figures are not from a sample of children representative of the community (these data are for children weighed at Anganwadi Centers), the trends beg for a closer scrutiny of the methods used to combat underweight in Ahmedabad district as well as the methods used to measure, define, and report underweight in these children.

There are several areas within the health framework in the district that call for urgent attention and action to achieve the overall goal of providing comparable levels of human development as other high performing states/districts in the country. For example, Ahmedabad district reports a **Crude Death Rate** (CDR) of 8/1000 for 2013-14, which is higher than the 2011 rate for Gujarat (6.7/1000) and India (7.1/1000). It is also the highest CDR compared to all other districts in Gujarat. This might reflect better reporting practices in Ahmedabad City, however the reasons need to be investigated.

In terms of **maternal health**, only 4 out 5 registered expectant mothers in Ahmedabad district (excluding Ahmedabad City) were registered in the first trimester of pregnancy in 2013-14. Early registration helps to detect and prevent complications. While the district was ranked 10th compared to other districts the city fares even worse: only 2 out 3 early registrations among registered expectant mothers. Such figures from Ahmedabad city are cause for concern. Furthermore, only about 4 out of 5 expectant mothers complete three ante natal checkups in Ahmedabad district (ranked 15th of all districts). This is a drop compared to 86% coverage in 2009-10. Ahmedabad city performs worse, but the time trend is positive going from 69% in 2009 to 75% in 2013-14. Irrespective of progress made over time, the absolute levels of uptake of three ante-natal check-ups are poor and need urgent attention.

About 15% of expectant mothers registered to receive **Antenatal care** (ANCs) were not immunized for tetanus in district (the city performs better, misses only 7%). Moreover, the performance is getting worse over time: the coverage was 96% in 2010-11 but dropped to ~86% in 2013-14. Ahmedabad district ranks 20th out of 26 districts in this regard. This is yet another indicator of ante-natal care that needs to be immediately addressed.

Ahmedabad City needs to pay particular attention to coverage of three doses of DPT **vaccine** which was at ~92% of all live births in 2013-14, while the rest of district reports about 97%. Another vaccine coverage indicator the city needs to focus on is Vitamin A first dose. While the district reports about 96% coverage (and an uptick compared to 2012-13), the city reports only 68%. Even more worrying, there is a linear downward trend since 2009 (when the city reported ~95% coverage).

Livelihoods, Employment and Urban Development

The district of Ahmedabad has shown higher than state average (73% versus 53%) percentage of net sown area to total reporting area, echoing the overall **steady agricultural growth** rate of the state of Gujarat in the last decade. Additionally, when compared to other districts in terms of percentage of food crops to total cropped area, Ahmedabad district records higher (53.64%) than state average (46.73%). On the other hand, a district-wise analysis of the cropping intensity (i.e the ratio if gross cropped area to net cropped area) pattern reveals Ahmedabad district reporting lower than state average with a cropping intensity of 113.71% (2007-08)

Though the state of Gujarat has recorded higher than national average **worker participation rates,** the district of Ahmedabad does not reveal similar patterns with a sharp rural-urban divide in employment-based indicators. By the year 2011, the rural areas of the district of Ahmedabad record lower than average worker participation rate when compared to the state of Gujarat (24 percent versus 32 percent). In particular, the rural talukas of Daskroi, Sanand, Viramgram and Dholka record around 10 percentage points lower worker participation rates than the Gujarat state average. Furthermore, by the year 2011, the rural talukas of Ranpur, Daskroi, Viramgram and Sanand are particularly poor performers when it comes to worker participation rates. Comapring the urban talukas between the two years-2001 and 2011-shows that there is some amount of homogenity in performance. Specifically, the urban talukas of Viramgram and Ranpur record lowest levels of worker participation rates by the year 2011. Finally, in comparing emplyment generation through **establishments and Micro, Small, Medium Entreprises** (MSMEs) with other districts in the state reveal that though the growth in the number of units have reamined stead in Ahmedabad district, the emoployment growth has dampened. The districts of Banas Kantha, Sabar Kantha, Panch Mahal and Kachhch have outperformed the highly urbanized district of Ahmedabad in terms of employment generation through these units.

When ranked using a **standard of living index** measure (a simple average of 12 household amenities and assets) data suggested that households in Ahmedabad city seem to enjoy better access and are also wealthier. Curiously, though there seem to be a distinct urban advantage (urban households generally report higher levels of access and asset holding), inequality of household provisions and amenities is perhaps sharper in the urban locations.

For example, the households in the urban areas of Barwala and Ranpur seem to have poorer quality of life as compared to their urban counterparts. Among the rural talukas, Detroj-Rampura, Ranpur and Viramgram have poorer household amenities and hence presumably poor quality of life. Using the score based identification system for BPL families (households that receive livelihood scores between 0-16 are listed as "poorest"), data (from the Ministry of Rural Development, Ahmedabad district) showed that total number of BPL families in all talukas have increased from 2000 to 2015, except Sanand. However, it is not easy to conclude that **poverty** has deepened as change in poverty figures could be as a result of the method and the sampling strategy used in the surveys. With more available data, this story of economic deprivation will be clearer.

Related to the standard of living index are the issues of **financial inclusion and digital connectivity** that are now important social policy goals for the Centre as well as for the state governments. Though recent programs such as the *Pradhan Matri Jan Dhan Yojana* (2014) and *Digital India, Digital Gujarat* (2015) have been launched, it remains to be seen how far the goals of financial inclusivity, e-governance and wi-fi enabled villages can be achieved since the lasts Census (2011) suggest a sharp rural-urban divide in households availing baking facilities and abysmally low levels of internet connectivity throughout the talukas in the district. Again, the predominantly rural talukas of Detroj-Rampura, Ranour, Bavla and Mandal are lagging far behind in terms of achieving these goals.

Social investment in **sanitation systems** has been increasingly recognized as an important public health and social policy tool. Data suggested that majority of rural talukas in Ahmedabad district have more than 50 percent of households that report relying on open defecation. The rural talukas of Ranpur, Detroj-Rampura , Sanand and Viramgram report very high levels of open defecation suggesting poor quality sanitation and higher likelihood of exposing people to water-borne communicable diseases resulting from fecal contamination. This is surprising since the target of toilet construction has been often met successfully over the last few years (2010-2015). Assistance under the "Nirmal Gujarat" scheme, though successfully implemented in most parts of the district, might need to be augmented for BPL families. Additionally, data suggested that about 97.41% of all households in Ahmedabad district have **lighting facility** in their houses. In rural areas, the percentage households with electricity are 92.12% and in urban areas it is 98.37% (Census, 2011). Data also showed that

only 20.23% of the households in rural Ahmedabad receive **treated tap water** (Census 2011). The comparable percentage for urban areas of Ahmedabad being 75.49%. Additionally, about 53.20% households in rural areas receive untreated tap water which might be harmful to their health. About 1.94% households in rural areas were still dependent upon natural sources of drinking water (Census, 2011).

Significant rural-urban divide was also observed in **fuel use.** More than 60 percent of rural households in the district report using firewood as the primary source of cooking fuel exposing them to high levels of indoor pollution and higher risk of lung diseases. This stands in sharp contrast to the Ahmedabad city and other urban areas (except Ranpur and Barwala) of the district that report more than 40% of households using clean fuel such as LPG, with Ahmedabad city enjoying the highest levels of clean fuel use (76%).

While closely analysing the **urban informal economy** and its links with human development with a particular focus on the city of Ahmedabad, data showed that women in Ahmedabad city bear a disproportionately higher burden of informal work and are also the ones that face higher wage losses when compared to their male counterparts.

The city of Ahmedabad has been one of the highest recipients of Jawaharlal Nehru National Urban Renewal Mission (JnNURM) awards for **urban development** and efforts towards attaining sustainable urban environments such as Janmarg-Bus Rapid Transit System, e-governance and best practices in city civic centres. However, despite this success, studies suggest that urban beautification projects such as the Kankaria Lake or the Sabarmati Riverfront, have pushed families to peripheral locations adversely affecting both their livelihoods and living conditions. Criticisms are also abound about the BSUP (Basic Services for Urban Poor) projects which include slum rehabilitation following an enhancement of urban environment. The urban infrastructural success of Ahmedabad city notwithstanding, these issues point to lack of economic and social freedoms among the urban poor, most likely resulting in low levels of human development.

The Relative Human Development Index

To summarize the performance of talukas by indicators of health, education and economic wellbeing, we have adopted a Relative Human Development Index (R-HDI) that included indicators of health (child nutrition), education (proportion of literates) and economic

wellbeing (a standard of living scale based on household assets and amenities). Talukas in the district were ranked based on their performance on these indicators. The R-HDI ranged from 0.64 to 0.80 (with values closer to 1 indicating higher values of human development). Based on this index, the city of Ahmedabad recorded a score of 0.867 (the highest in the district), while Detroj-Rampura recorded the lowest score (=0.641). We found a distinct spatial pattern in the performance of talukas. That is, on an average, talukas closer to the urban city of Ahmedabad performed better than those farther away from an urban location.

In the remaining chapters, this Report has paid particular attention to rural-urban divide in other social development indicators and has provided recommendations to address this spatial inequality. In particular, though we have conducted the exercise of computing an R-HDI, we are cognizant of the greater policy challenges that lie beyond these selected indicators. Our approach in this Report has been to address the twin goals of providing a "picture of averages" and at the same time, wherever data permitted, paying closer attention to challenges and opportunities by taluka levels. As Amartya Sen (2000) in "A Decade of Human Development", *Journal of Human Development*, reminds us of the limits of focusing *only* on the HDI:

"It would be a great mistake to concentrate on the Human Development Index. These are useful indicators in rough and ready work: **but the real merit of human development approach lies in the plural attention it brings to bear on development evaluation**, not in the aggregative measures it presents as an aid to diverse statistics" *[emphasis added]*

Through the analysis and discussion presented in this Report, we hope this Report achieves this "plural attention" in policy dialogue as Sen and other early advocates of the human development approach envisioned.

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List of Acronyms

AMC	Ahmedabad Municipal Corporation
ANC	Ante-natal Care
APL	Above Poverty Line
ASER	Annual Status of Education Report
ASHA	Accredited Social Health Activists
AWC	Anganwadi Centre
AYUSH	Ayurved, Yoga and Naturopathy, Unani, Siddha and Homeopathy
BCG	Bacille Calmette Guerin
BISAG	Bhaskaracharya Institute for Space Applications and Geo-informatics
BPL	Below Poverty Line
BRTS	Bus Rapid Transit System Project
BSUP	Basic Service for Urban Poor
BSY	Bal Sakha Yojana
CBR	Crude Birth Rate
CDHO	Chief District Health Officer
CDR	Crude Death Rate
CHC	Community Health Centre
CRS	Civil Registration System
CY	Chiranjeevi Yojana
DHDR	District Human Development Report
DIET	District Institute for Education and Training
DISE	District Information System for Education
DNT	De-notified Tribes
DOTS	Directly Observed Treatment Short course
DPT	Diphtheria, Pertusis and Tetanus
DRDA	District Rural Development Agency
DSIR/SIR	Dholera Special Investment Region
EM	Entrepreneurs Memorandum
GAS	Gross Area Sown
GCERT	Gujarat Council of Educational Research and Training
GDI	Gender Development Index
GDP	Gross Domestic Product
GER	Gross Enrollment Ratio
GIA	Gross Irrigated Area
GIDC	Gujarat Infrastructure Development Corporation
GLPC	Gujarat Livelihood Promotion Company
GoG	Government of Gujarat
GoI	Government of India
GPI	Gender Parity Index
GTET	Gujarat Teacher Eligibility Test

HDI	Human Development Index
HDR	Human Development Report
HS	Higher Secondary schools
ICDS	Integrated Child Development Services
IDSP	Integrated Disease Surveillance program
IHDI	Inequality Adjusted Human Development Index
IITGN	Indian Institute of Technology Gandhinagar
ILO	International Labour Organization
IMR	Infant Mortality Rate
IPD	In patient Department
JnNURM	Jawaharlal Nehru National Urban Renewal Mission
JPAL	Abdul Jameel - Poverty Action Lab
LPG	Liquified Petroleum Gas
MC	Medical Colleges
MDR	Multi Drug Resistant
MHRD	Ministry of Human Resource Development
MMR	Maternal Mortality Rate
MNREGA	The Mahatma Gandhi National Rural Employment Guarantee Act
MPR	Monthly Program Reports
MSS	Model School Scheme
MSME	Micro, Small and Medium Enterprises
NAS	National Achievement Survey; Net Area Sown
NCERT	National Council of Education Research and Training
NCTE	National Council for Teacher Education
NER	Net Enrollment Ratio
NEUPA	National University of Educational Planning and Administration
NGO	Non-Governmental Organization
NIA	Net Irrigated Area
NMR	Neonatal Mortality Rate
NPE	National Policy on Education
NRHM	National Rural Health Mission
NSSO	National Sample Survey Organization
OBC	Other Backward Class
OP	Only Primary schools
OPD	Outpatient Department
OUP	Only Upper Primary Schools
P+UP	Primary and Upper Primary schools
PF	Plasmodium Falciparum
PHC	Primary Health Centre
PNG	Piped Natural Gas
PPP	Purchasing Power Parity
PQoL	Physical Quality of Life Index

PTR	Pupil to Teacher Ratio
PV	Plasmodium Vivax
QLI	Quality of Life index
RCT	Randomized Control Trial
RGI	Registrar General of India
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RTE	The Right of Children for free and Compulsory Education
RU	Rural-Urban
SC	Scheduled Class
SEBC	Socially and Economically Backward Classes
SEZ	Special Economic Zone
SHG	Self Help Groups
SLI	Standard of Life Index
SNP	Supplementary Nutritional Program
SPI	Social Progress Index
SS	Secondary Schools
SSA	Sarva Shiksha Abhiyan
SSP	Sardar Sarovar Project
ST	Scheduled Tribe
SWOR	Strength Weakness Opportunities and Recommendations
TaRL	Teaching at the Right Level
TB	Tuberculosis
TET	Teacher Eligibility Test
T/R/U	Total/Rural/Urban
TT	Tetanus Toxoid
UA	Urban Agglomeration
U-DISE	Unified DISE system
UEE	Universal Elementary Education
UG	Urban Growth
UNDP	United Nations Development Programme
USE	Universal Secondary Education
WDR	World Development Report
WHO	World Health Organization
WPR	Worker Participation Rate

CHAPTER 1: DIMENSIONS OF HUMAN DEVELOPMENT

"Human development, as an approach, is concerned with what I take to be the basic development idea: namely, advancing the richness of human life, rather than the richness of the economy in which human beings live, which is only a part of it."

Amartya Sen

Dimensions of Human Development: Concept and Measurement

1.1 The Human Development Paradigm

It has been well established in the development literature that enhancing average economic opulence is inefficient in the pursuit of human wellbeing. This understanding of human wellbeing is not a new invention. It dates back to early leaders of economic and political thought such as Immanuel Kant (1724-1804), Karl Marx (1818-1883) and John Stuart Mill (1806-1873) who regarded human beings as the real end of all activities. Development scholarship, later, offered more formal understanding of human wellbeing arguing that the basic purpose of development is to enlarge people's choices. And hence, the objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives (Haq, 2009). In this District Human Development Report (DHDR, henceforth), we summarize and evaluate whether the district of Ahmedabad has been able to successfully provide a facilitating environment to expand people's choices and capabilities (discussed in the next section) in terms of health, education and livelihoods.

This understanding of human development is often confused with economic prosperity. In noted economist, philosopher and social commentator Amartya Sen's sense, this conflation of development and economic growth is a "foundational confusion" where growth is given the status of an end (Sen, 2009). Instead, Sen offers an approach-the capability approach-that has the conceptual ability to evaluate social change in terms of the richness of human life. In particular, Sen notes that "capability of a person is a derived notion; it [capability] reflects a person's freedom to choose between ways of living". Through this formulation of development, the focus shifts from conventional metrics of economic growth (e.g. Gross Domestic Product per capita) to freedom, where "capabilities are expressions of freedoms themselves" (Sen, 2009: 7). Distinguished economist from Pakistan and Director of World Bank's Policy Planning Program, Mahbub ul Haq, explains the concept of human development as a holistic development paradigm that embraces both ends and means, both productivity and equity, both economic and social development, both material goods and human welfare. According to Haq the link between growth and human progress is not automatic. Drawing

from country experiences across the globe, he emphasizes the importance of investment in social expenditures (e.g. education and health) and equitable distribution of income and assets, so that people are able to participate actively in the growth process and share its benefits given their strengthened human capabilities. Haq (2009) summarizes it incisively: "the real point of departure of human development strategies is to approach every issue from the vantage point of people" (*Handbook of Human Development*, page 20). To understand the human development process in a holistic way, we have, in this Report, mapped growth across the last few decades for education, health and livelihood-based indicators of Ahmedabad District and at the same time have delved deeper into certain indicators to identify the possible antecedents of change.

To quantify this nuanced understanding of "development", various indices have been adopted taking into account the role of social determinants in human development such as Social Progress Index (SPI), Gender Development Index (GDI), Quality of Life index(QoL), Physical Quality of Life Index (PQLI) etc. Although a variety of indices and measurement scales are available to measure different social phenomena, there is no single comprehensive theory available that would capture the concept of human development within its framework. This is because of the multidimensional nature of human life and the complex nature of the concept of development (Stewart, 2013).

1.2 The Human Development Index

In 1990, the Human Development Index (HDI) was first proposed by two eminent economists Mahbub ul Haq and Amartya Sen. It is a composite statistic based on life expectancy at birth, education (adult literacy), and per capita income indicators in purchasing power parity dollars (PPP$). It is a single index that is both descriptive and prescriptive, analytical and also an overview, and both a tool and a target. Given its multiple functions, there has been a lot of interest among policy-makers to compute HDI by different levels of aggregation (country, state, districts) to assist in effective policy making and an evaluation tool for assessing the impact of their policies.

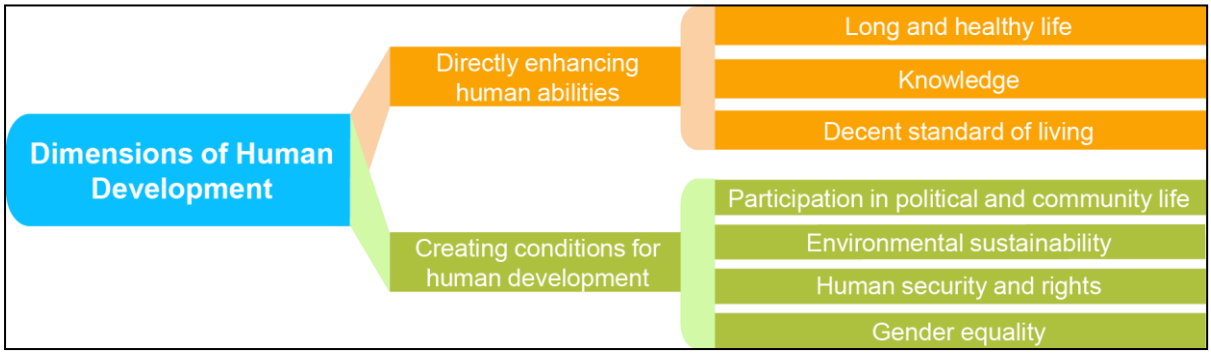
However, over the years, the composite index has received both praise and criticism from the scientific community. And hence, the index has undergone revisions and modifications to incorporate conceptual clarity and policy effectiveness. For example, in 2010, the United

Nations Development Programme (UNDP) introduced the inequality adjusted human development index (IHDI) which indicates the maximum human development that could be achieved if there was no inequality. Later in this chapter, we present a Relative Human Development Index and have ranked the talukas of the Ahmedabad district to assess and contrast their levels of human development.

It is important to note that the UNDP considers this process of human development an essential one. Previous Human Development Reports (HDR) have already discussed various strategies for development such as employment incentives, economic growth, poverty, consumption inequality and the relationship between technologies and human development. These various aspects and perspectives of development are linked to each other and therefore, should be considered together. It is the active participation of people which can achieve improvement in indicators and development in true sense.

The year, 2015 marks 25 years since the first Human Development Report decided to shift from economic development to human well-being as an approach to measuring development (United Nations Development Programme, 2015). The diagram (Box 1.1) represents various aspects of human development.

BOX 1.1



Source: (UNDP, 2015)

BOX 1.2

Human development – The concept is larger than the index

Ironically, the human development approach to development has fallen victim to the success of its human development index (HDI). HDI has reinforced the narrow, oversimplified interpretation of the human development concept as being only about expanding education, health and decent living standards. This has obscured the broader, more complex concept of human development as the expansion of capabilities that widen people's choices to lead lives that they value.

Despite careful efforts to explain that the concept is broader than the measure, human development continues to be identified with HDI - while political freedoms, participating in the life of one's community and physical security are often overlooked. But, such capabilities are as universal and fundamental as being able to read or to enjoy good health. They are valued by all people – and without them, other choices are foreclosed. They are not included in HDI as they are difficult to measure appropriately, not because they are any less important to human development.

Source: Statement of Sakiko Fukuda-Parr, Director and Lead Author of the HDRs, in UNDP (2002): 53.

Source: Taken from (Hirway & Mahadevia, 2004)

The process of human development needs to be participatory and inclusive as it involves people from different socioeconomic backgrounds. Human development can only be achieved in a meaningful way by planning and executing a developmental strategy by considering human characteristics, capabilities and opportunities. It cannot be achieved by mere focus on education, health, and nutrition along with appropriate infrastructure development.

In addition to the Human Development Reports at the national and state levels, the District-level HDR (DHDR) will stand as one of the important documents that reflect the existing scenario, point out to future needs and guide the path towards holistic human development. Micro-level human development reports will also be helpful in planning and strategizing policies with bottom to top approach. The Ahmedabad district human development report is our attempt to study and analyze the quality of life of people staying in the Ahmedabad district. **In this report, along with analyzing the existing conditions, we identify the need for improvement and address the lacunae in the process of human development.**

1.2.1 Relative Human Development Index

To assess the performance of talukas in terms of human development indicators described above, we have computed a Relative Human Development Index (RHDI, henceforth) by adopting using geometric mean formula: GM (a, b, c)= (abc)1/3 :

$$RHDI = \sqrt[3]{E_l H_n L_{sli}}$$

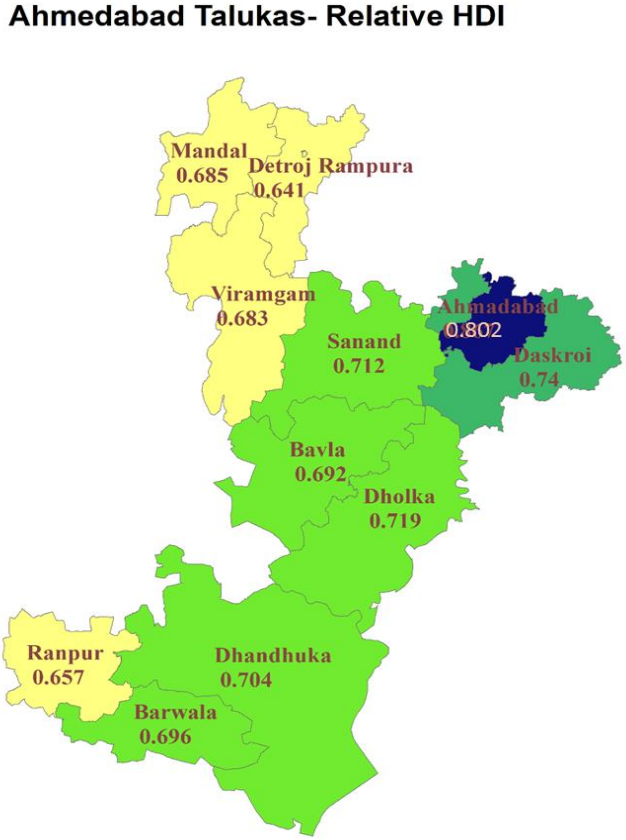
where the education, health and livelihood indicators chosen are: E_l= proportion of literate, H_n= proportion of well-nourished children, L_{sli}= standard of living score.

(c) Photo Credit: Corbis.com

The data for all the above indicators are at the taluka level where the education and the standard of living (proxy for economic status) variables are drawn from the Census data, while the taluka level health variable is obtained from the Integrated Child Development Services (ICDS) scheme reports. These variables were chosen based on their appropriate reflection of education, health and economic status of the people and also on the availability of data at the taluka level. The standard of living (SLI) scores were calculated based on 12 household level characteristics, amenities and assets. The items included in the SLI are: (1) condition of residence considered "good" by Census (2011) definition, (2) house ownership, (3) access to clean tapwater from a treated source, (4) location of water source within the household premises, (5) electricity as the main source of lighting, (6) has latrine facility in the household, (7) use of Liquefied Petroleum Gas/Piped Natural Gas as cooking fuel, (8) access to banking facilities, (9) has a television in the household, (10) household has mobile phone, (11) household has a bicycle, (12) household has a motorized vehicle (motorcycle, moped or scooter). Since income data is rarely collected in developing countries, proxy measures of economic status such as consumption expenditure and household assets (such as the one used here) are often used in the economic analysis of livelihoods. Gujarat is no exception. A discussion on the link between household amenities, assets and quality of life is presented in the "Livelihoods" chapter of this Report Given the level of aggregation and approximation, this index at best may be a considered as an indirect measure of human

development. In addition to ranking the talukas by the R-HDI, we have also mapped the index spatially to understand the spatial determinants affecting the performance of the index. The R-HDI ranges from 0.64 to 0.80 (values closer to 1 indicate higher levels of human development). Ahmedabad city tops the list with an R-HDI score of 0.802 while Detroj-Rampura has the lowest score (=0.641). Not surprisingly, the talukas closer to the urban city of Ahmedabad (Sanand and Daskroi) seem to perform better as compared to those that are farther away from an urban location (Rampur and Detroj-Rampura). This finding corroborates our earlier observation of a distinct "urban advantage" in human development parameters which includes a combination of resources, access and opportunities. In our SWOR analysis, we highlight this rural-urban inequality. Further, in the remaining chapters of this Report, we have paid close attention to the spatial inequalities and have provided recommendations to close the gap.

Map 1.1: Spatial mapping of Relative-HDR by talukas, Ahmedabad District, 2011



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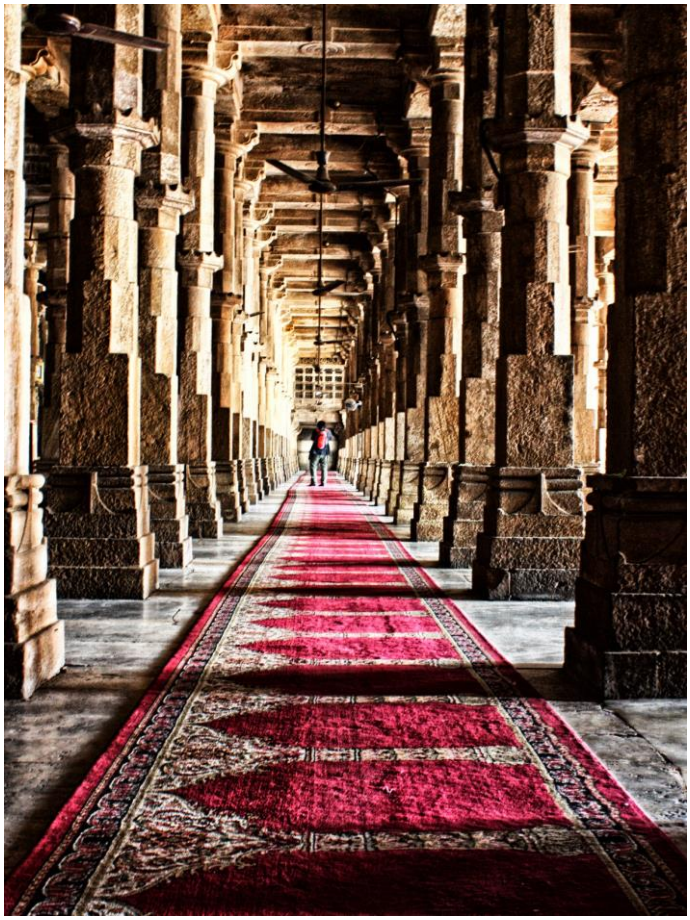


CHAPTER 2: POPULATION & DEMOGRAPHY

"Population, when unchecked, increase in a geometrical ratio, subsistence, increase only in an arithmetical ratio."

Thomas Malthus

POPULATION AND DEMOGRAPHY

2.1 Introduction

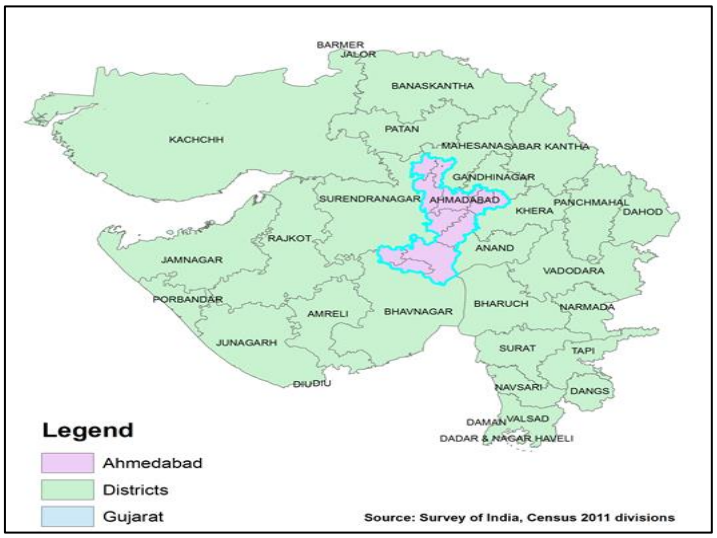
In this chapter, we have covered a few important features of Ahmedabad district and Gujarat state. Along with the historical importance of the district, its contribution in trade, education and research have been briefed. This chapter also describes the administrative divisions of Ahmedabad district and its demographic features. The latest available information on the number of these units at village and district level reflects the strength of the administrative system in Ahmedabad. Charts of various population characteristics make this chapter immensely informative. Description of the population dynamics (size, structure, growth and composition) in Ahmedabad district has been presented. This chapter covers population characteristics by residence and gender; sex ratio and rural-urban divide at the state and district level. Age structure tables and population pyramids of Ahmedabad district have been mentioned which throw light upon the dependency ratio and sex ratios at different age-groups in the district. The data highlight some issues such as male child preference and a highly masculine urban migration in the district. Population diversity in Ahmedabad district is also described in this chapter. We present the diversity of population in terms of religion, scheduled caste and scheduled tribes.

2.2 Geographic and Historical Features

Gujarat : Gujarat state came into existence as a separate state on 1st May 1960. It is situated on the west coast of India between 20°.6' N to 24°.42' N north latitude and 68°.10' E to 74°.28' E east longitude. It is bounded by the Arabian Sea in the west, by the state of Rajasthan in the north and northeast, by Madhya Pradesh in the east and by Maharashtra in the south and south east. Gujarat has an international boundary and has a common border with the Pakistan at the north-western fringe. The two deserts, one north of Kachchh and the other between Kachchh and the mainland Gujarat are saline wastes. The State has a long coast-line of about 1600 km which is the longest among all states of the country. As per the 2011 census, Gujarat State comprised 26 districts, sub-divided into 225 talukas, having 18225 villages and 348 towns. In 2013, 7 new districts were created, raising the total number of districts to 33 and

talukas to 248. Gujarat has a geographical area of 1.96 lakh sq. km and accounts for 6.19 percent of the total area of the country (Directorate of Economics and Statistics, GoG, 2015).

Map 2.1: Administrative Boundaries of Gujarat and Ahmedabad



Gujarat is considered one of the economically developed states in India. The state's per capita income was Rs 106,831 in 2015 (Statistics Times, 2015). The state is also more urbanized as compared to other states with great importance given to trade and industries, making it a commercial and industrial hub (Hirway & Mahadevia, 2004).

Ahmedabad: Ahmedabad is one of the most important cities in Gujarat state with respect to heritage, education, trade and technology. Ahmedabad, an ancient city on the banks of the Sabarmati River, has traditionally been a center of economic importance for the dynasties ruling it and later for India as well. Historically, it has been a major producer of cotton, garments and fabrics. It has been ruled by various dynasties including the Ghaznis, the Delhi Sultanate, Gujarat Sultanate, the Mughals, the Marathas and the British. The city of Ahmedabad derives its name from the Muslim ruler-Ahmed Shah- who made it the capital of Gujarat Sultanate in the mid fifteenth century.

All through this time, the city has remained a hub of trade-related activity and housed many clothing mills which made it a major center of activity for the garment industry. Even in modern times, it houses a few major textile mills and garment houses. In the British era, it was called the "Manchester of the East" due to the excellent quality of clothing that it produced.

In recent times, the city of Ahmedabad has developed into a major metropolis housing many important educational, research and industrial houses. Growth has especially been large in the educational sector with the establishment of the National Institute of Design (NID), the Indian Institute of Management (IIM), Mahatma Gandhi Labour Research Institute (MGLRI), Dhirubai Ambani Institute of Information and Computer Technology (DAIIICT), Sardar Patel Institute of Economics and Social Research, and Mudra Institute of Communication (MICA) among others. Pharmaceutical companies such as Torrent pharmaceuticals and Zydus Cadila have their headquarters in the city while many other industrial houses have a major presence in the city through regional offices. The Gross Domestic Product (GDP) of Ahmedabad is nearly $119 billion. It is a major importer of gems and jewellery and has been listed by the Reserve Bank of India as one of the largest credit centers of the country. Ahmedabad also is famous for its local weaving styles including Batik and Ajrakh among others (Government of Gujarat, 2015).

2.3 Ahmedabad District Profile and Demographic Features

Ahmedabad district is the most urban and most populous district in Gujarat. It ranks 8th in terms of population among districts in India. As per the Census of 2011 (Registrar General of India, Census, 2011), the rural areas are characterized by 539 villages inhabited by a population of about 11.5 lakhs. Four of the 539 villages have a population of less than 200 and four others have a population greater than 10,000. Most of the villages (n= 371) have populations between 1000 and 4999. There are a total of 11 *taluka panchayats*, 9 sub-districts, 13 municipal towns, one Municipal Corporation and 518 *gram panchayats* in the district.

2.3.1 Total Population by Residence and Gender

According to Census 2011, Ahmedabad district has a total area of 8107 Sq km. It is surrounded by the districts of Kheda in the east, Mehsana and Gandhinagar in the north, Anand in the south and Surendranagar in the west (map 2.1) .

Table 2.1 - Units of Administration (Ahmedabad)

Sr. No.	Heads	Nos.
1	Area (Sq. Kms.)	8087
2	No. of Talukas	11
3	Prants	9
4	Municipal Corporations	1
5	Municipal Towns	13
6	Panchayats *Taluka Panchayats* *Gram Panchayats*	11 518
7	Villages (Total)	539

Source: Census, 2011, Gujarat State Third Finance Commission, 2012

Ahmedabad district has the highest population in Gujarat (Figure 2.1). The total population of the district was 58.2 lakhs in 2001 which increased to 72.14 lakhs in 2011 with a population growth rate of 22.31% over a decade. This decadal increase in the population was more than the decadal population increase in Gujarat (19.3%) as per Census 2011. Population-wise, the district is ranked 8th in India out of the total 640 districts in the country, as per census 2011. The population density in the district is 890 inhabitants per square kilometer. The district consists of 11 taluks, total 539 villages and 13 towns. Percentage of urban population in Ahmedabad district is about 84% (Registrar General of India, Census, 2011). From 2011-2015, Ahmedabad district added three more Talukas, but reduced in area to 8087 Sq. km (District Collectorate Ahmedabad, 2015).

Figure 2.1: District Wise Population, Census- 2011

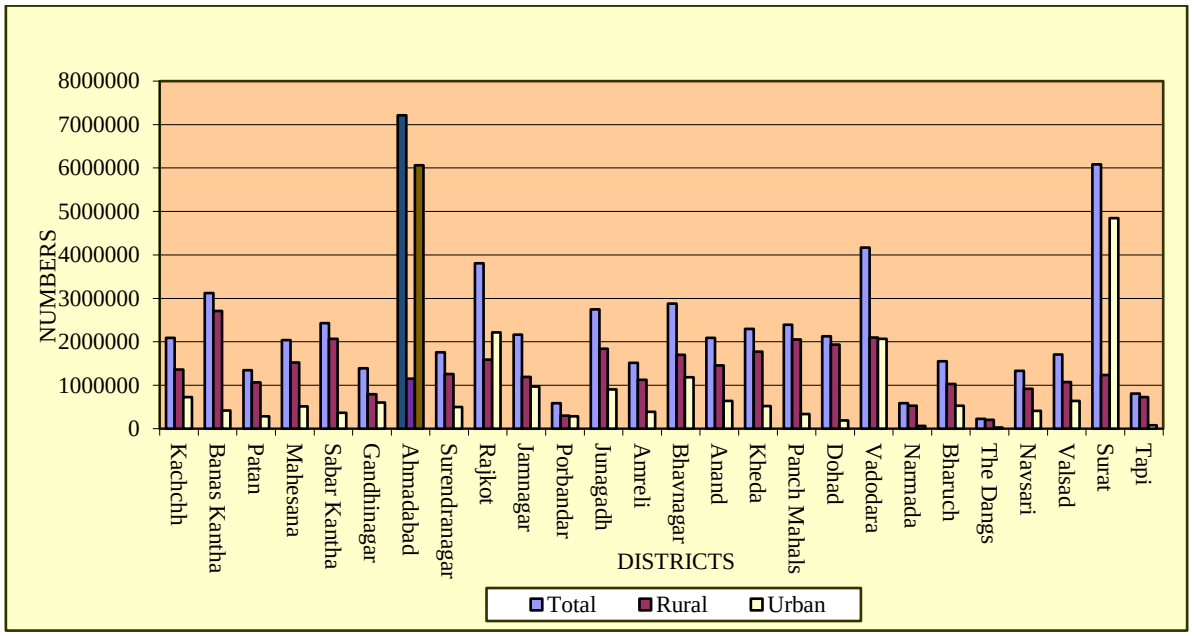
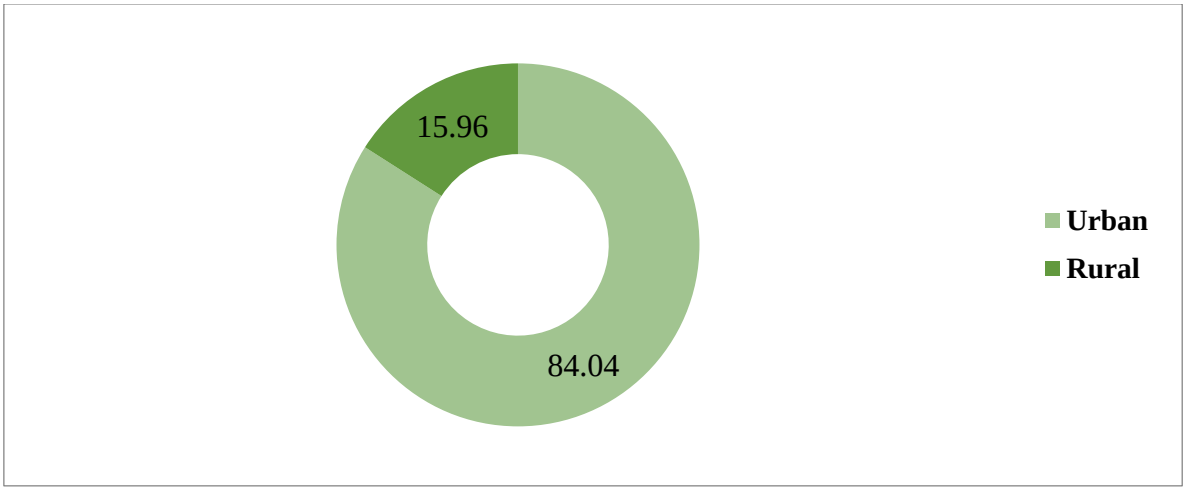


Figure 2.2: Percentage Population in Rural and Urban Areas of Ahmedabad District (Census, 2011)



As per the Census data, the total population living in the urban areas of the district was 46.6 lakhs in 2001 which increased to 60.6 lakhs in 2011. In 2011, about 84.04% of the population lived in urban areas and 15.96% population lived in rural areas, as shown in figure 2.2. There has been 30.1% increase in the urban population in the district over a decade (Table 2.2).

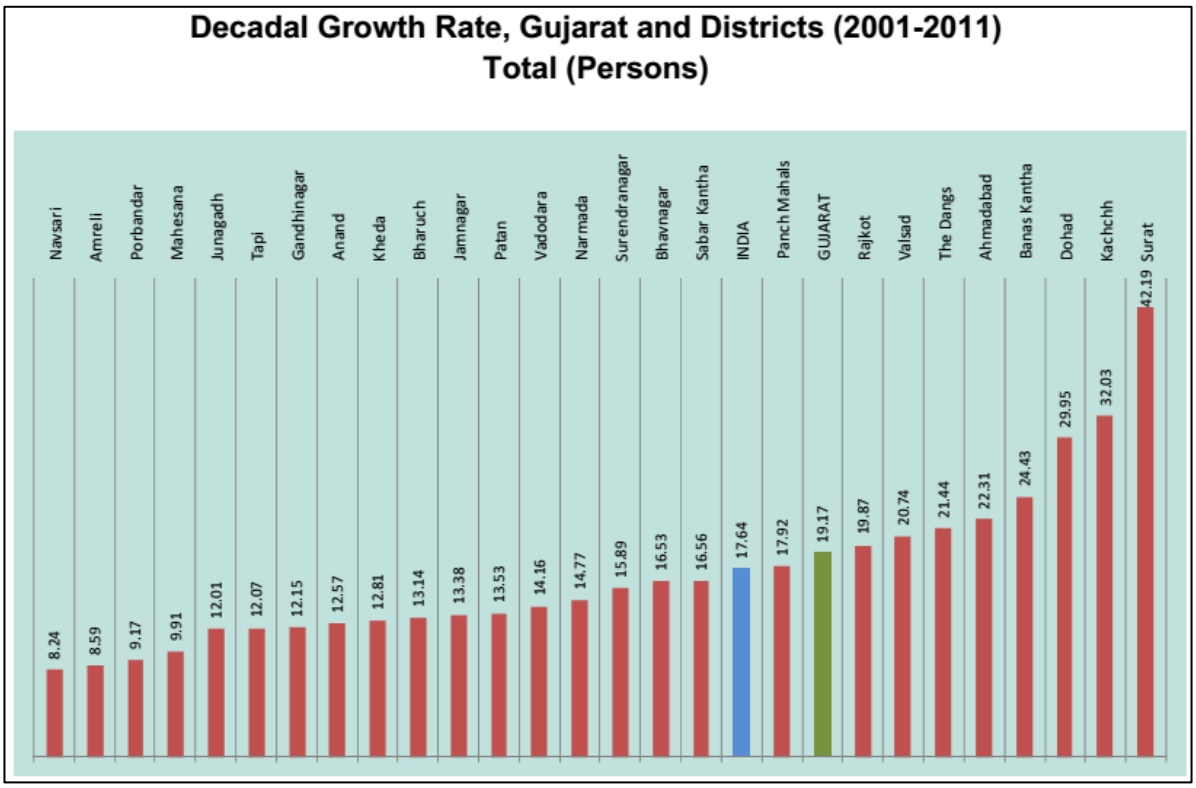
Table 2.2 - Population and Decadal Change by Residence & Gender

	P/M/F	Total Population (in lakhs)						% of Decadal Change			Sex Ratio		Urbanization	
		Total		Rural		Urban		T	R	U				
		2001	2011	2001	2011	2001	2011	2001-2011			2001	2011	2001	2011
GUJARAT	P	506.0	604.4	317.4	346.9	189.3	257.5	19.3	9.3	36	920	919	37.35	42.59
	M	263.4	314.9	163.2	178.0	100.5	136.9	19.5	9.07	36.1				
	F	242.5	289.5	154.2	169.0	88.4	120.5	19.4	9.54	36.2				
AHMEDABAD	P	58.2	72.1	11.5	11.5	46.6	60.6	22.4	- 0.44	30.00	892	904	79.97	84.04
	M	30.7	37.9	6.0	6.0	24.7	31.9	23.2	-0.92	29.07				
	F	27.4	34.3	5.5	5.6	21.9	28.7	24.9	-0.67	31.07				

Source: Census, 2001 and Census, 2011; Registrar General of India

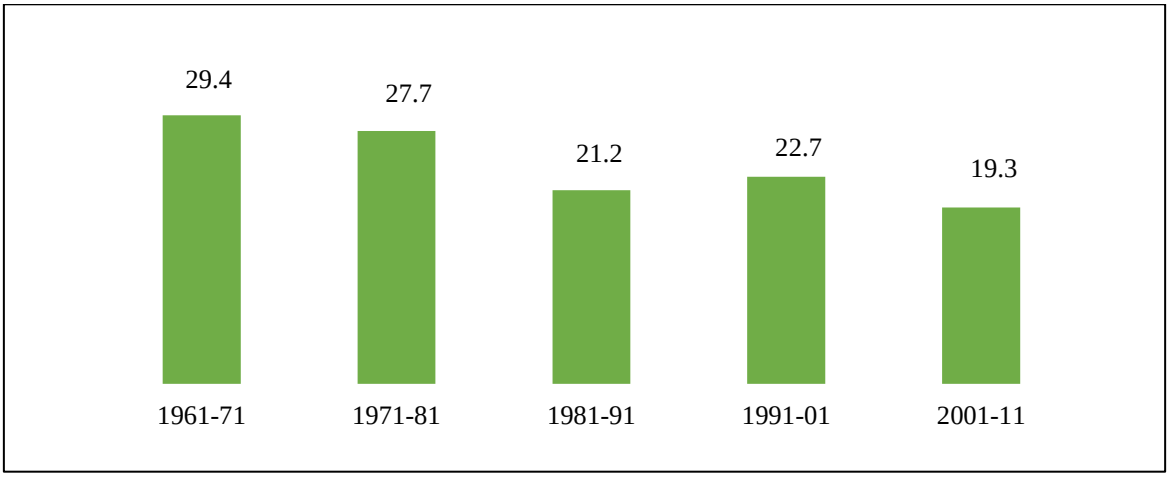
Rural population in Ahmedabad district has been decreased by 0.44% over a decade. In 2001, the total rural population in the district was 11.52 lakhs, which was decreased only slightly in the year 2011. This suggests that total urban population in the district has substantially increased over a decade. Many areas which were previously classified as rural has turned into urban due to increased population (natural and migration). The total urban population in 2001 was 80.17% whereas in 2011, it increased to 84.04 %. Much of this growth is due to rise in population of Ahmedabad city.

Figure 2.3: Decadal Growth Rate (Total), Gujarat and District (2001-2011)



Source: Census, 2011, Provisional Population Totals, Paper 2, Volume 1, GUJARAT Series 25

Figure 2.4: Decadal Population Growth Rate (Gujarat)



Source: Census 1961-2011

An important feature of Ahmedabad district is the extremely high proportion of urban residents driven by the fact that the population of Ahmedabad City accounts for 92.12% of all urban population of the district. Although the sex ratio of the Ahmedabad district has increased over a decade, all other districts in the state, except Surat, have performed better than Ahmedabad district in 2011 (Figure 2.6). Typically, health outcomes (e.g. infant and

maternal mortality, incidence of water-borne disease) are worse in rural areas of India when compared to their urban counterparts. And hence a reverse trend in the sex ratio figures (that is, rural areas performing better than urban Ahmedabad) is surprising. Sociological and demographic literature on India suggest that gender-based sex selection in urban/semi-urban locations could perhaps be explained by relatively easy access to technology related to prenatal diagnosis in health clinics in such areas.

Figure 2.5: Ahmedabad District Total Population 2001 & 2011

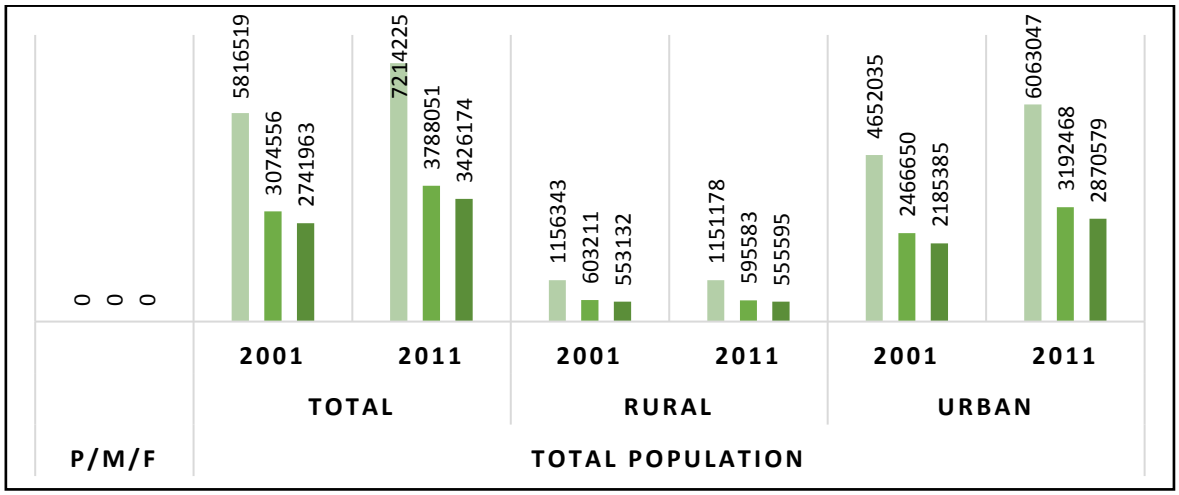
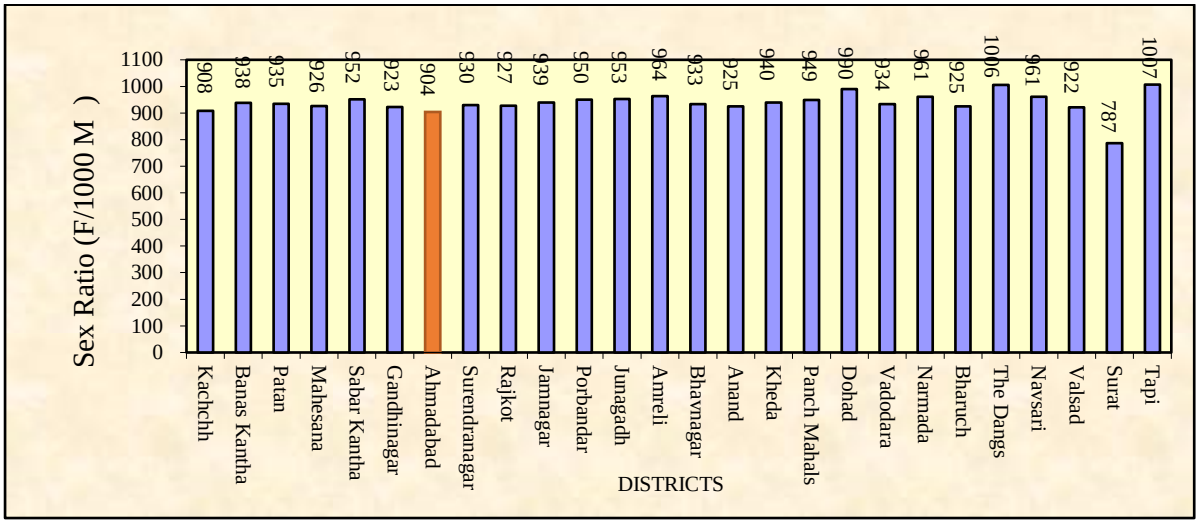


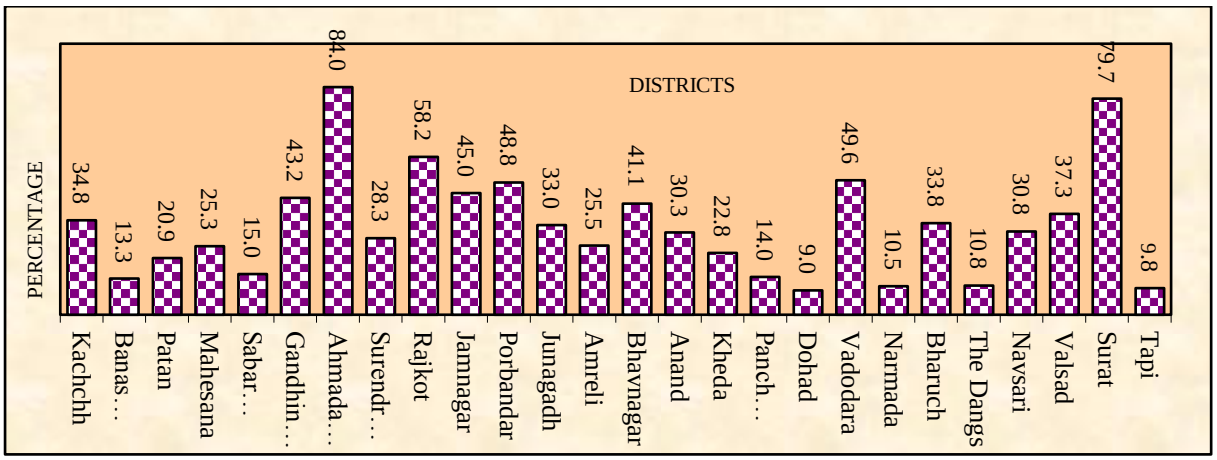
Figure 2.6: District wise Sex Ratio in Gujarat – Census 2011



In particular, the sex ratio of the district went up from 892 in 2001 to 904 in 2011. The sex ratio was less as compared to the state level (919) and national level (943) in 2011 but there is slow rise in the sex ratio indicating rise in the female population in the district. In 2011, the percentage of female population was 24.9% higher as compared to that in 2001. Although the

total number of male population too increased over a decade, the increase (23.2%) was less as compared to the rise in the female population in district. In both urban and rural areas of the district, decadal increase in the female population was higher as compared to that of the male population. The percentage decadal change in male population in rural areas was – 0.92% (indicating reduced male population) and in urban areas, it was 29.07%, whereas, the female population in rural areas increased by 0.67% and 31.07% in urban areas (Census, 2001 & 2011).

Figure 2.7: District wise percentage of Urban Population, Census-2011

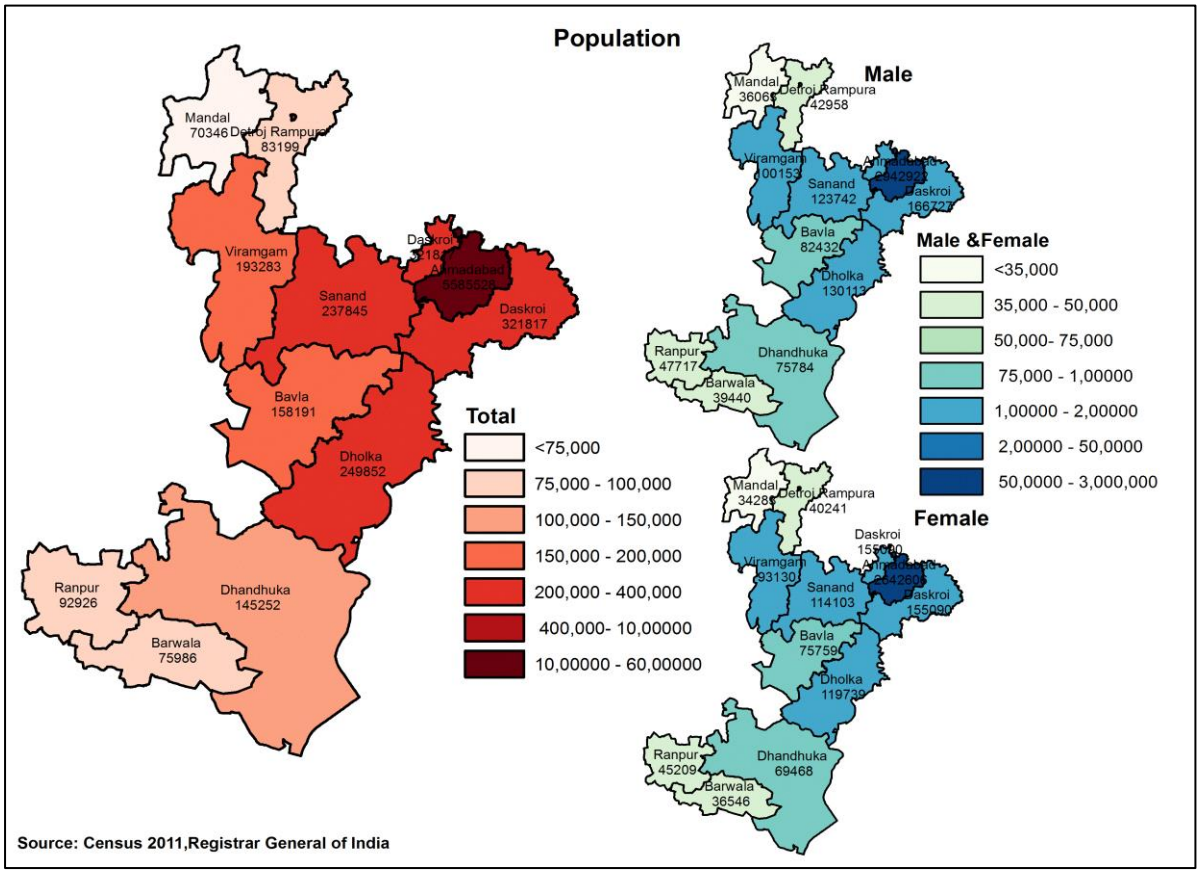


As seen in the figure 2.7, Ahmedabad district has the highest urban population in Gujarat, 84% of reside in Ahmedabad city. Which is followed by Surat and Rajkot districts, 80 % and 58% urban population respectively (Census, 2011). The least urbanized district in Gujarat is Dohad, where only 9% population resides in urban areas (Census, 2011).

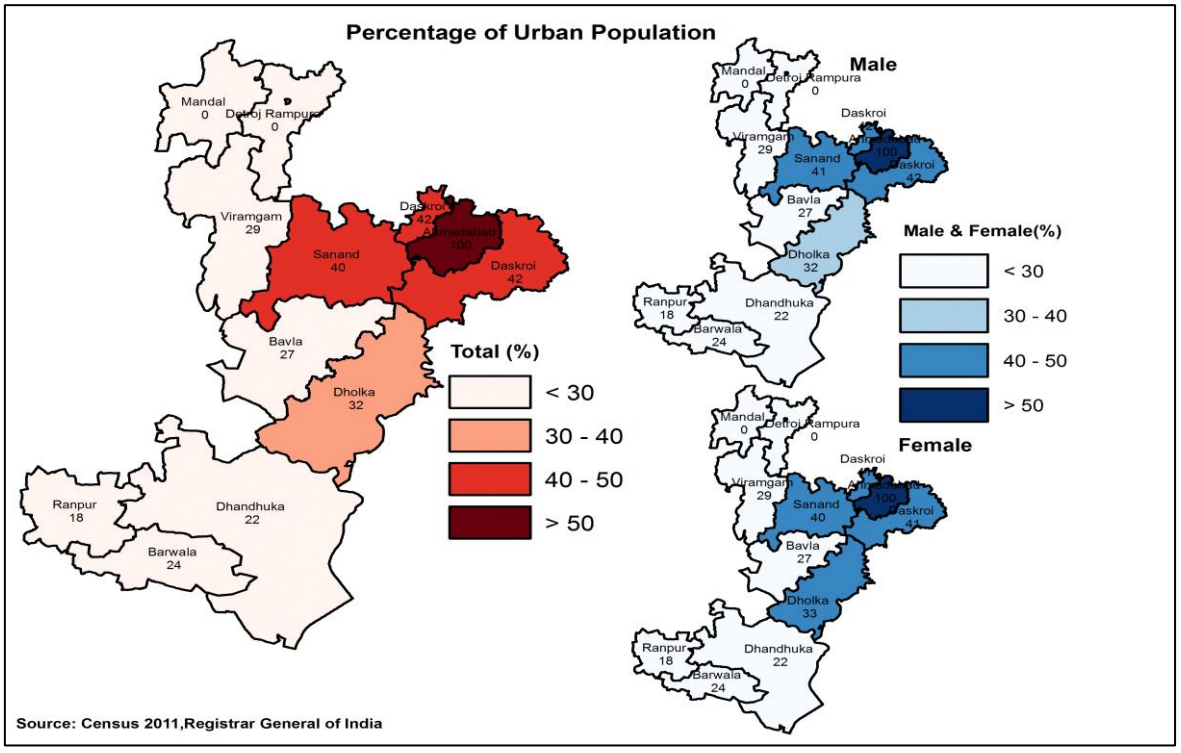
2.3.2 Taluka level population in Ahmedabad District

The district has been divided in to 11 talukas- Mandal, Detroj-Rampura, Viramgam, Sanand, Ahmedabad city, Daskroi, Bavla, Dholka, Ranpur, Barvala and Dhandhuka (Census, 2011). Population-wise, Ahmedabad city ranked the top with total population of 55.86 lakhs (Census, 2011) and Daskroi was the second largest populated taluka in the district with total population of 3.21 lakhs, as per census 2011. With total population of 70,346, Mandal was the least populated taluka (Census 2011) (Map 2.2). The percentage of urban population is highest in Ahmedabad city followed by Dascroi and Sanand (Map 2.3).

Map 2.2: Population Distribution of Ahmedabad (Census, 2011)



Map 2.3: Percentage of urban population in Ahmedabad district (Census, 2011)



2.3.3 Population Age-Structure

Age structure of Ahmedabad population is shown in the figure below. As we can notice from the age structure table and the age pyramid graph (Figure 2.8) that Indian Pyramid has a strong base, with more youngsters. It is a well-balanced, smooth pyramid. Age structure in Ahmedabad is similar to that at the national level. Most noticeable feature in this graph is the bulge in the youth group (15-40 years), probably due to fertility reduction and demographic dividend. The lowest population distribution is seen in the elderly age-group. The graph also indicates that lower fertility rates in Ahmedabad would lead to a greater share of working age population compared to the proportion of children and elderly in the future.

There is a striking rural-urban divide in the age-structure in Ahmedabad. Divide is seen among all the age-groups. Unemployment, increasing educational facilities in urban areas and overall more urbanization are some of the contributors to this divide.

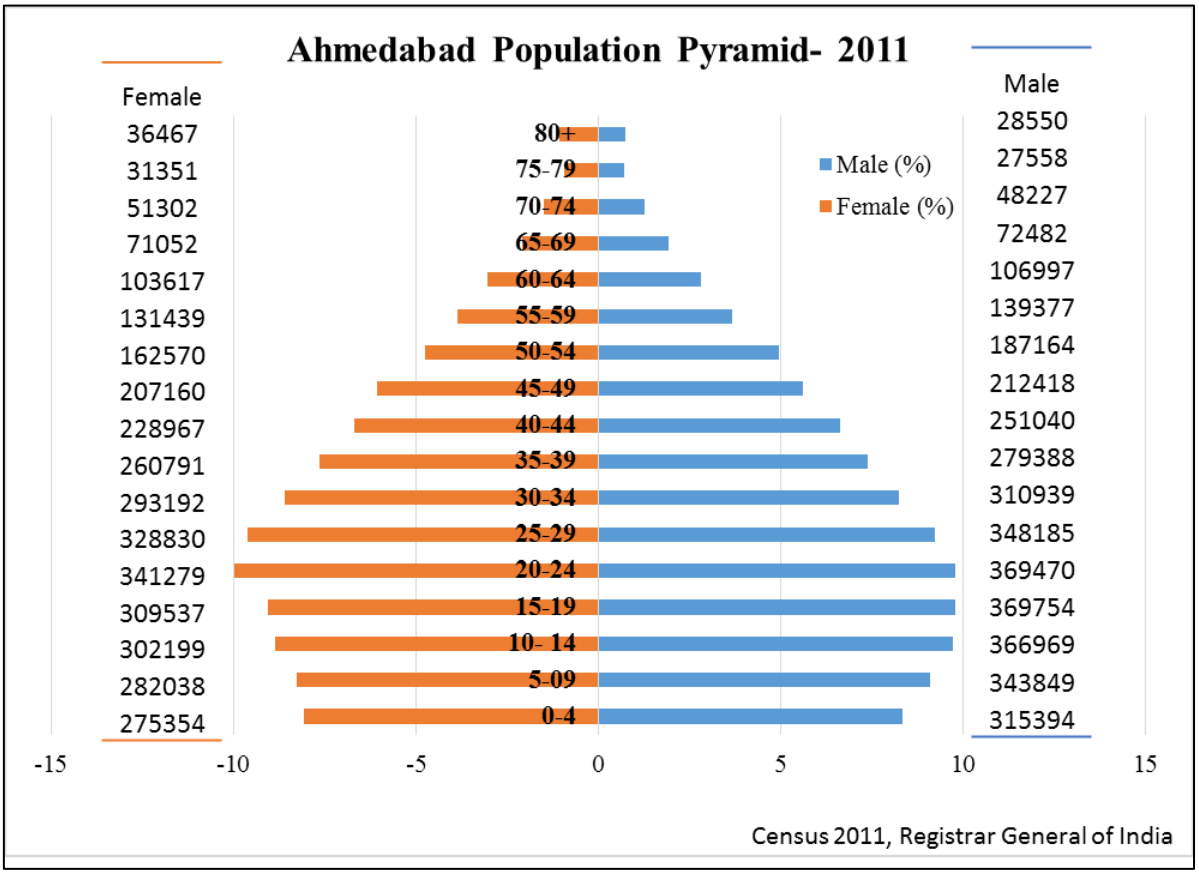
As shown in figure 2.8, most of the population of Ahmedabad district is below the age of 49 years. Greatest bulge is seen for the age-group of 20-24 years, which shows that a large section of the population is young. The pyramid has a large base. The base then contours to create a bulge for age-groups of 15-19 years to 30-34 years age. The contours of the pyramid create a tip which is very narrow as compared to the base. The tip represents the elderly population (above 60 years age).

Table 2.3: Sex ratio of Ahmedabad district

Sex ratio- Ahmedabad	Total	Rural	Urban
All	904	933	839
0-6 years	857	894	848
5-14 years	822	876	810

Sex ratio in the 0-6 age-group was 857 in 2011. In the age group likely pursuing education, the sex ratio was 820 in the 5-9 years age-group and 823 in the 10-14 years age-group. The sex ratio is also skewed in the urban areas for these age-groups indicating a pervasive culture of male-preference resulting in sex-selective abortion and a highly masculine rural-urban migration into the district. For the working age population (15-64 years), the sex ratio was about 798 in Ahmedabad district (Census, 2011).

Figure 2.8: Ahmedabad Population Pyramid, 2011



Source: Created from Age structure table from Census, 2011, through India stats

NOTE: In the population age structure table of the Census of India, age groups from 40-80 are given in 10 year intervals. This was converted to 5 year age group based on standardization using Gujarat Population structure of 2011.

The Dependency Ratio measures the ratio of working population (15-64 years) to the dependent population (0-14 and 65 and above). Due to data limitations we have defined working age as up to 60 years. We calculated the Dependency Ratio using the following formula:

$$\text{Dependency Ratio} = \frac{(\text{Population in the age group } 0-14) \text{ and } (\text{aged } 60 \text{ and above})}{\text{Population in the age group } 15-60} \times 100$$

The dependency ratio in Ahmedabad district was 52.06 in 2011. This figure suggests that the number of people of non-working age was comparable to the number of those of working age. A high ratio indicates that those in the working age population and the overall economy face a greater burden in supporting the dependent population.

2.3.4 Total Child Population 0-6 years

Understanding timely changes in the child population is important as it projects future needs for educational, health and infrastructural services for children. Child population encompasses that proportion of the total population of the country which lies in the age group of 0-6 years.

Country level statistics show that the proportion of population aged 0 to 6 years has declined both in rural and urban areas from 2001 to 2011. In rural areas, the proportion of children (0 to 6 years) was 17.03% which declined to 14.11% in 2011 (Census, 2001; Census, 2011). The urban child population for the age-group 0 to 6 years in the country declined from 13.05% in 2001 to 10.93% in 2011 (Census, 2001; Census, 2011).

2.3.5 Gujarat Child Population

In Gujarat state, percentage decadal change in the child population for the age-group of 0 to 6 years was -0.51% with 8.06% decline in the rural areas and 15.18% increase in the urban child population. The decline in the total boy child population (between 0 to 6 years) was more (0.65%) as compared to the decline in the total girl child population at the state level (0.35%). Looking at the absolute numbers at state level, in rural areas, boy child population reduced from 26.68 lakhs in 2001 to 25.21 lakhs in 2011, however, in urban areas it increased from 13.31 lakhs (1.33 million) in 2001 to 15.93 lakhs (1.6 million) in 2011. The change in girl child population also represents similar rural and urban divide. According to the Census, girl child population in rural areas was 24.17 lakhs (2.42 million) in 2001, which reduced in 2011 by 8.02% (in absolute number, 23.03 lakhs in 2011). In urban areas the percentage decadal change in the girl child population was 16.29%, with the girl child population of 11.14 lakhs (1.11 million) in 2001 and 13.58 lakhs (1.36 million) in 2011 (Census, 2001; Census, 2011).

As shown in table 2.4, in 2011, the total child population between 0-6 years in Ahmedabad was 8.43 lakhs, of which 3.89 lakhs were girls and 4.54 lakhs were boys. The total urban population of children (0-6 years) was 4.21 times that in the rural population in 2011. In 2001, the urban child population was 3.11 times rural child population (0-6 years) with total population of 7.69 lakhs. This indicates that there was approximately 9.46% increase in the total child population in the district over a decade. Out of 7.69 lakhs children in the district, 4.19 lakhs were boys and 3.50 lakhs were girls (Census, 2001).

Figure 2.9: Child Population 0-6 Years (Gujarat and Ahmedabad), 2011

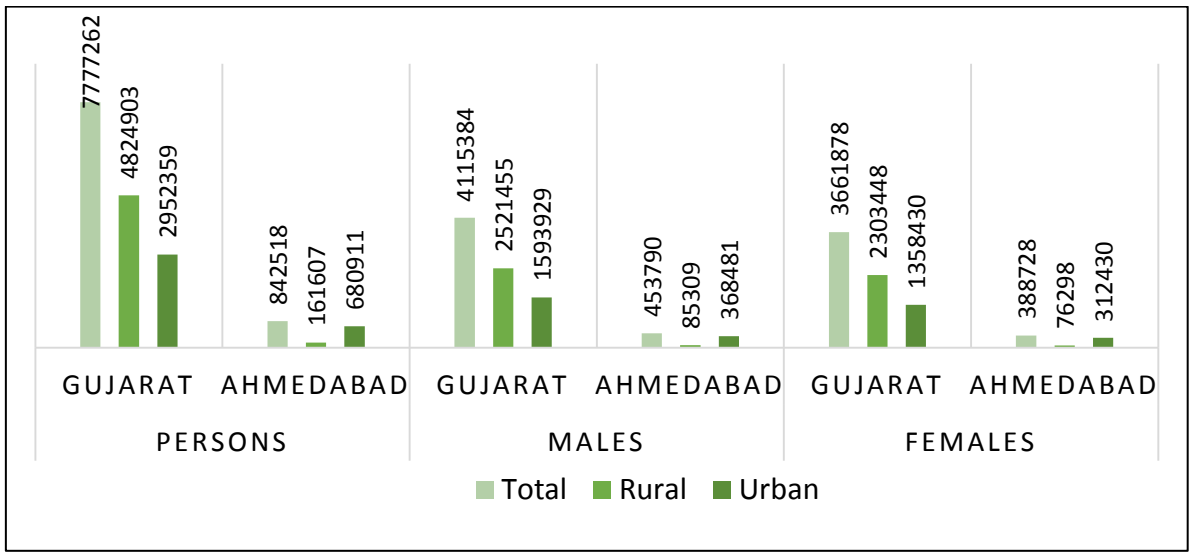


Table 2.4 - Child Population (0-6 yrs) and Decadal Change by Residence & Sex Ratio

State / Dist.	P / M /F	Child Population (0-6 years) in lakhs						% of Decadal Change			Sex Ratio (0-6)	
		Total		Rural		Urban		Total	Rural	Urban		
		2001	2011	2001	2011	2001	2011	2001-2011			2001	2011
GUJARAT	P	75.32	77.77	50.86	48.25	24.46	29.52	-0.51	-8.06	15.18	883	890
	M	40.00	41.15	26.69	25.21	13.32	15.94	-0.65	-8.08	14.26		
	F	35.32	36.62	24.17	23.03	11.15	13.58	-0.35	-8.02	16.29		
AHMEDABAD	P	7.70	8.43	1.87	1.62	5.83	6.81	9.46	-13.49	16.82	835	857
	M	4.19	4.54	1.00	0.85	3.20	3.68	8.23	-14.31	15.26		
	F	3.50	3.89	0.87	0.76	2.63	3.12	10.93	-14.37	18.72		

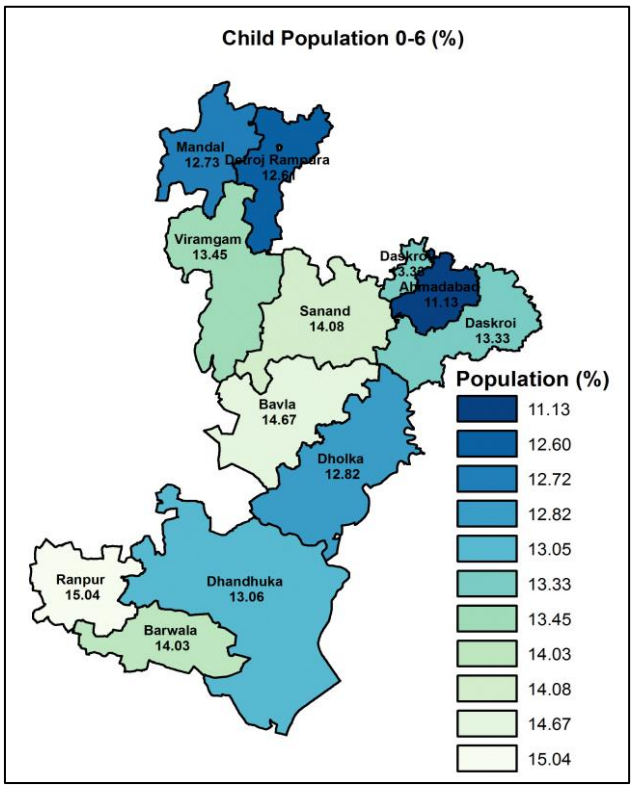
Source : Census:2001 & 2011

Sex ratio among children (0-6 years) has increased over a decade even at the district level. In 2001, there were 835 girls (0-6 years) per 1000 boys aged 0 to 6 years. In 2011, this ratio was increased to 857. Sex ratio among children (0-6 years) is still low as compared to that at the state level. Neglect of the girl child and son-preference are some of the reasons contributing to lower sex ratio (Table 2.4).

2.3.6 Taluka level Child Population

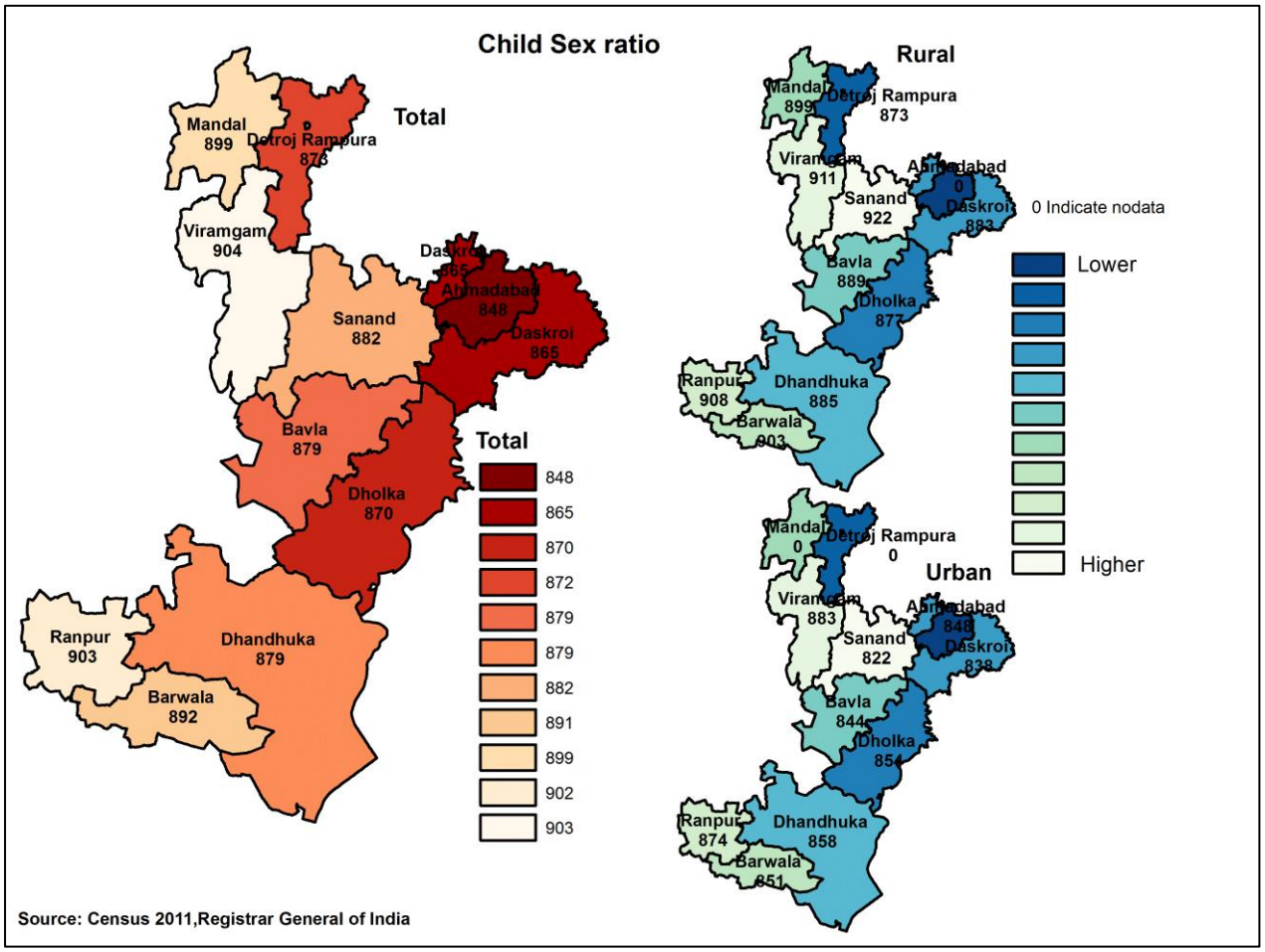
At taluk level, both in 2001 and 2011, Ahmedabad city taluka topped the list with the highest child population in the district. In 2001, it was 5.22 lakhs which increased to 6.21 lakhs in 2011. Sex ratio in Ahmedabad city (848) was far less than that at the state level (890). The second and the third highest child population (0-6 years) at taluk level were seen in Daskroi (42,904) and Dholka (32,034), respectively (Census, 2011) (Map 2.4).

Map 2.4: Child population in Ahmedabad (Census, 2011)



Mandal had the lowest number of children between age-group 0 to 6 years. In 2001, there were about 10 thousand children between age 0 to 6 years in Mandal and in 2011; the number was reduced to about 8.9 thousand . Sex ratio in Ranpur Taluka (903) was the highest among all talukas. It was also higher than the sex ratio at state and district level (Map 2.5).

Map 2.5: Child sex ratio in Ahmedabad (Census, 2011)



2.3.7 Population Diversity

Religion: In Gujarat, the total population of two major religions Hindus and Muslims was 4.51 Crore and 0.45 crores, respectively (Census, 2001). Out of the total population of the state, approximately 89% were Hindus and 9.06% were Muslims (Census, 2001). Percentage-wise distribution of Christian, Sikh, Buddhist, and Jain populations was approximately 0.56%, 0.09%, 0.04% and 1.03%, respectively

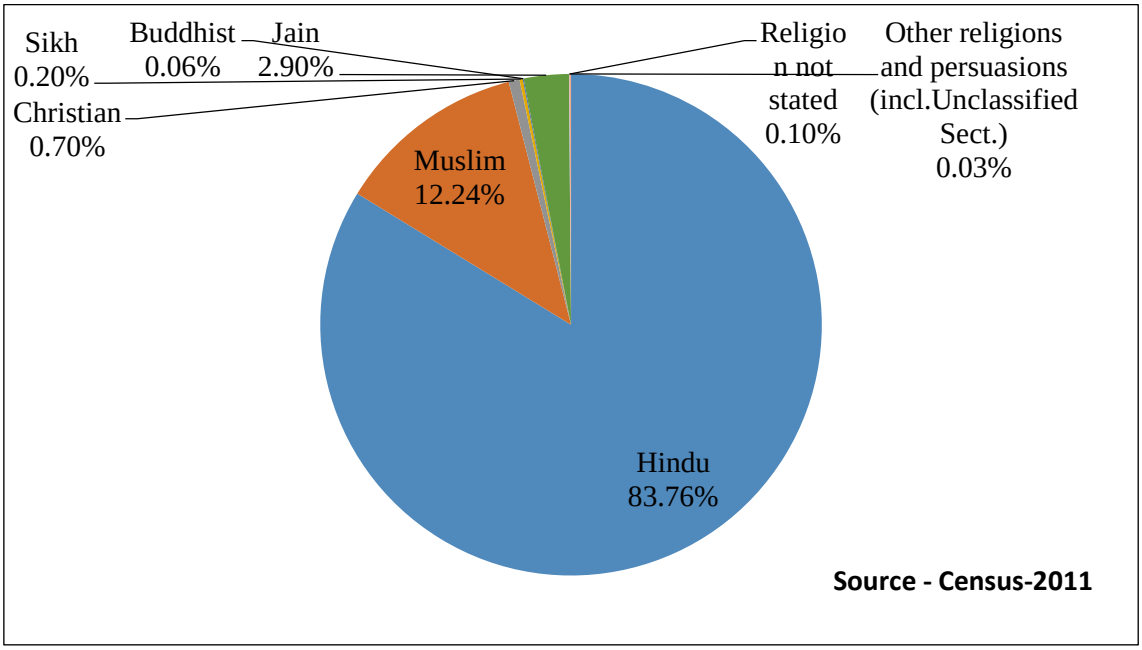
(Census, 2001). About 0.06% of the total population in Gujarat belonged to other religions and persuasions and about 33.5 thousand persons did not state their religion (Census, 2001).

By the recently released Census data (Census 2011), the population proportions for Hindus and Muslims in the state of Gujarat are 88.57% and 9.67%, respectively. The proportion of other religious categories are Christian (0.52%), Sikh (0.09%), Buddhist (0.05%) and Jain (0.95%) (Census, 2011). About 0.02% of the total population in Gujarat belonged to other religions and persuasions and about 0.09% of the population did not state their religion (Census, 2011).

Ahmedabad district is a socially diverse district. About 83.76% of the population was Hindu and 12.24% of the population was Muslim in Ahmedabad district in 2011 (Census, 2011). The proportions of other religious categories are Christian (0.7%), Sikh (0.2%), Buddhist (0.06%) and Jain (2.9%) (Census, 2011). About 0.03% of the population in the district belonged to other religions and persuasions and 0.1% of the population did not state their religion (Census, 2011).

In Ahmedabad city, 81.39% of the population is Hindu and 13.63% of the population is Muslims (Census, 2011). These numbers echo the larger religious composition of the district. The city of Ahmedabad has a slightly higher than district average Jain population of 3.64% (Census 2011). In the Census 2011, the definition of urban area has been expanded to include Cantonment, Urban Agglomeration (UA) and Urban Outgrowth (UO). Based on these new definitions, Ahmedabad cantonment (the urban area that lies between the city of Ahmedabad and the city of Gandhinagar) shows Muslim population that is 25.96% of the total population of Ahmedabad cantonment- the highest proportion of Muslims in an administrative division of the district (Census, 2011). The Ahmedabad Cantonment area also records the highest proportion of the Christian community (~2%) in the district which is higher than the district average of 0.70% (Census, 2011). Additionally, the talukas of Sanand, Detroj-Rampura and Daskroi have a large Hindu population of 92.16%, 98.56% and 96.42%, respectively (Census, 2011). The proportion of Muslims in other talukas of Ahmedabad district range from 1.08 % (Detroj-Rampura) to 13.67% (Dholka). The distribution of religious composition of the district (taluka-wise) has been presented in Appendix 2.C

Figure 2.10: Percentage Population in Ahmedabad District According To Religion



Scheduled Caste Population: In 2011, at the state level, the total scheduled caste (SC) population was 40.74 lakhs, which was about 6.74% of the total population of Gujarat. In 2001, the SC population at the state level was 35.92 lakhs. This shows around 13.40% increase in the SC population over a period of decade (Census, 2001; Census, 2011). The increase in the SC population is because of the increase in SC population in urban areas than that in rural areas of state. Urban SC population in the state increased by 26.9% from 2001 to 2011 whereas rural population increased by about 4.6%. Among SC population at the state level, the sex ratio was 931. In rural areas, there were 940 women per 1000 men and in urban areas there were 919 women per 1000 men among SC population (Table 2.5).

SC population in Ahmedabad district was 10.5% of the total district population (Census, 2011). In Ahmedabad district, the total SC population was 6.20 lakhs in 2001 of which 1.25 lakhs persons belonged to rural areas and 4.95 lakhs belonged to urban areas. That is, about 79.83% of the total SC population lived in urban areas in 2001. In 2011, percentage of SC population living in the urban area in Ahmedabad increased to about 84.39%. In absolute numbers, out of the total SC population of 7.59 lakhs in Ahmedabad, 1.18 lakhs were living in rural areas and 6.40 lakhs were living in urban areas (Census, 2011) (Figure 2.11).

Table 2.5- Scheduled Caste Population in state and district (Source: Census 2001)

	P/ M/ F	Scheduled Caste Population (in lakhs)						% of Decadal Change (SC)			% of SC Population to Total Population			Sex Ratio (SC)		
		Total		Rural		Urban		T	R	U	T	R	U	T	R	U
		2001	2011	2001	2011	2001	2011	2001-2011			2011			2011		
GUJARAT	P	35.93	40.74	21.80	22.82	14.12	17.93	13.4	4.6	26.9	6.7	6.57	6.96	931	940	919
	M	18.66	21.10	11.27	11.76	7.39	9.34	13.0	4.31	26.44	6.7	6.6	6.82			
	F	17.26	19.64	10.53	11.05	6.73	8.59	13.7	4.98	27.5	6.7	6.54	7.12			
AHMEDABAD	P	6.21	7.59	1.25	1.19	4.96	6.41	20	-5.3	26.3	10.5	10.29	10.57	903	912	902
	M	3.28	3.99	0.66	0.62	2.62	3.37	21.5	-6.1	28.56	10.53	10.4	10.55			
	F	2.93	3.60	0.59	0.57	2.33	3.04	23.2	-4.4	30.2	10.5	10.1	10.5			

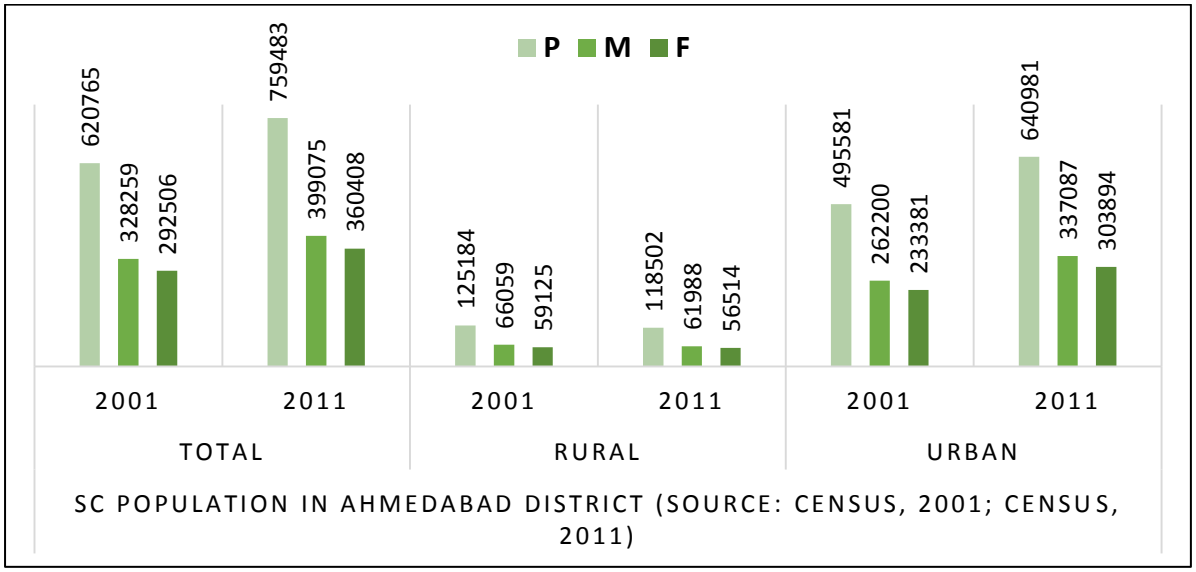
Source: Census, 2001 & 2011

Sex ratio among SC population at the district level was less than that at the state level. The sex ratio amongthe SC population in Ahmedabad district was 903 whereas at the state level the sex ratio among SC population was 931 in 2011. In the sex ratio in urban areas was less (902) than that in rural areas (912). However, this sex ratio of 912 in rural areas of Ahmedabad district was much lower than the what was reported from rural areas at the state level (940).

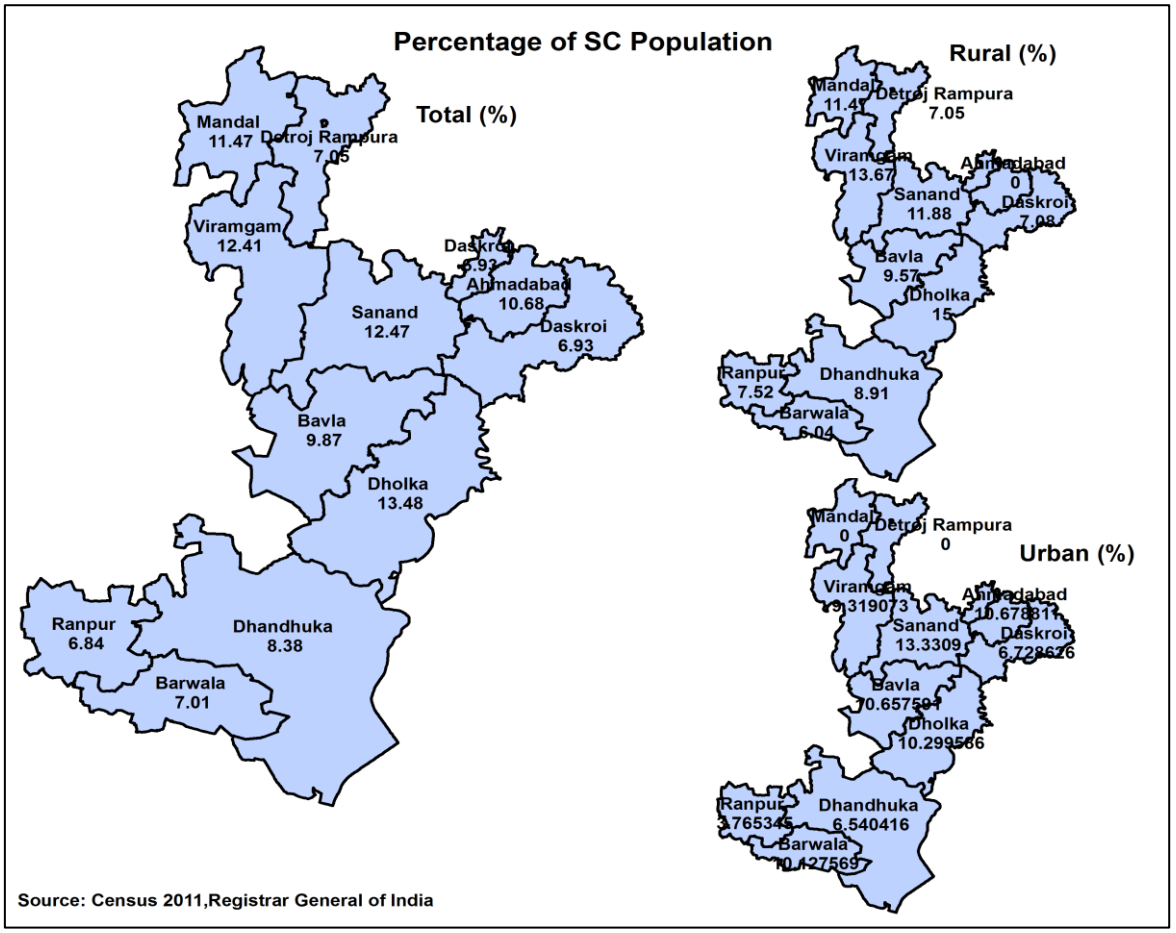
At the taluka level, Ahmedabad city had the highest SC population (5.96 lakhs). Out of the total SC population in Ahmedabad city, 3.13 lakhs were males and 2.82 lakhs were females (Census, 2011). Sanand taluka had the second highest SC population (29,654) in 2011.

A total of 16,871 members of the SC population in Sanand lived in rural areas. Barwala had the lowest SC population (5324) among all the talukas in Ahmedabad district (Census, 2011).

Figure 2.11: SC population in Ahmedabad district (Census, 2011)

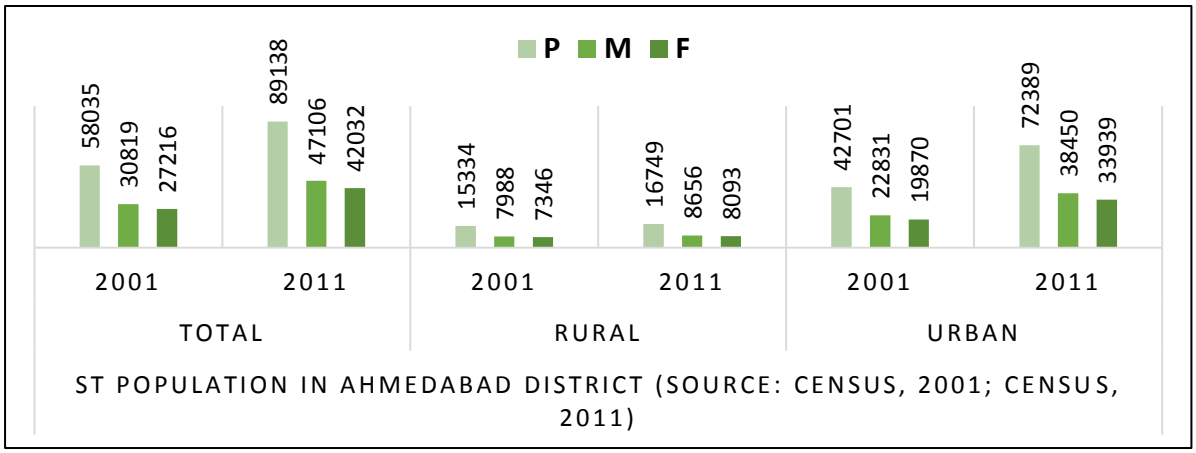


Map 2.6: Percentage SC population in Ahmedabad (Census, 2011)



Scheduled Tribe Population: The total Scheduled Tribe (ST) population at the state level was 74.81 lakhs in 2001 (Census, 2001). In 2011, this increased to 89.17 lakhs with a 19.2% decadal change rate (Census, 2011). The population decadal change for ST population was more in urban areas (45.7%) as compared to that in rural areas (16.8%). In 2011, ST population was 14.8% of the total population in Gujarat.

Figure 2.12: ST population in Ahmedabad District (Census, 2011)



In Ahmedabad district, the total ST population in 2001 and 2011 was 58,035 and 89138, respectively which shows a 53.59% decadal increase in ST population (Table 2.6).

In 2001, total ST population living in rural areas of Ahmedabad district was 15,334, which slightly increased in 2011 to 16,749. The decadal increase in rural areas was about 9.2%. The percentage decadal change in the ST population in urban areas was much higher as compared to rural areas. ST population in urban areas in 2001 and 2011 was 42,701 and 72,389, respectively with decadal change of 69.52% (Figure 2.12).

At the state level, out of the total ST population of 74.61 lakhs, there were 37.90 lakh males and 36.91 lakh females resulting in a sex ratio of 981 in 2011. This ratio was higher in rural areas (984) than in urban areas (952) (Census, 2011). The district level sex ratio in 2011 was much lower at 892 as compared to the state level . Urban areas reported a lower ratio (833) than rural areas (935) in Ahmedabad district.

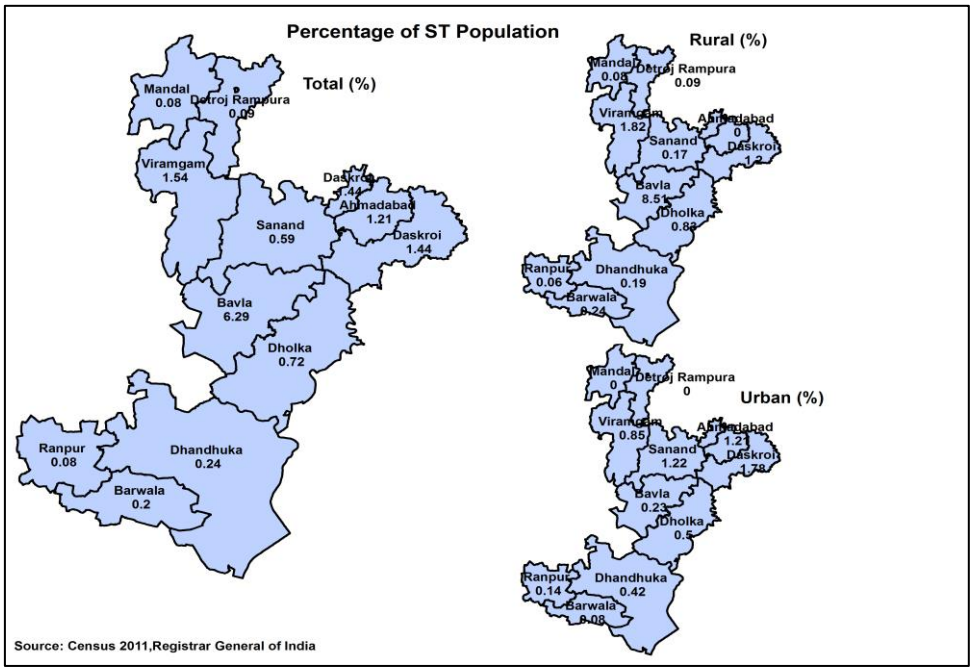
At the taluka level, the highest ST population was seen in Ahmedabad city followed by Bavla with total ST populations of 39,791 and 7725, respectively (Census, 2001). Similarly, in 2011, Ahmedabad city (67,659) and Bavla (9946) had the highest ST population at Taluk level (Map 2.7).

Table 2.6- Scheduled Tribe Population in District

	P/ M/ F	Scheduled Tribe Population (in lakhs)						% of Decadal Change (ST)			% of ST Population to Total Population			Sex Ratio (ST)		
		Total		Rural		Urban		T	R	U	T	R	U	T	R	U
		2001	2011	2001	2011	2001	2011	2001-2011			2011			2011		
GUJARAT	P	74.81	89.17	68.67	80.22	6.15	8.95	19.19	16.8	45.7	14.75	23.1	3.5	981	984	952
	M	37.90	45.01	34.71	40.43	3.19	4.59	18.76	16.47	43.74	14.29	22.71	3.35			
	F	36.9	44.1	33.9	39.7	2.95	4.37	19.6	17.1	47.8	15.2	23.5	3.62			
AHMEDABAD	P	0.58	0.89	0.15	0.17	0.43	0.72	53.5	9.2	69.5	1.2	1.5	1.2	892	935	833
	M	0.31	0.47	0.08	0.09	0.23	0.38	52.8	8.36	68.4	1.24	1.45	1.2			
	F	0.27	0.42	0.07	0.08	0.20	0.34	54.43	10.16	70.8	1.22	1.45	1.18			

Source: Census, 2001 & 2011

Map 2.7: Percentage ST population in Ahmedabad district (Census, 2011)



SWOR ANALYSIS

STRENGTHS

One of the most populous districts in Gujarat with high human resource potential and a possibility to reap the ***"demographic dividend."***

Population is diverse in terms of caste, religion and occupational composition.

WEAKNESSES

Overall adverse female-to-male sex ratio indicating less proportion of women as compared to men. Adverse child sex ratio indicates a "daughter deficit" and points to a pervasive culture of patriarchy and undervaluing the girl child.

OPPORTUNITIES

The district of Ahmedabad is poised to achieve a demographic dividend, given the median age of 27.5 years.

Well-developed physical infrastructure holds promise to further social development and enhancement of human capabilities.

Proximity to the capital city of Gandhinagar provides opportunities for better administrative communication and resources.

RECOMMENDATIONS

Targeted programs to educate people about the social impacts of adverse sex ratio along with the programs to encourage and value the girl child should be taken.

In this direction, the "Beti Vadhaao Andolan" is a right step by GoG and should be strengthened.

Appendix of Tables

Appendix 2.A

Taluka-wise Population as per Census 2011					
Taluka	T/R/U	Number of Households	Population		
			Total	Males	Females
Mandal	Total	15121	70346	36063	34283
	Rural	15121	70346	36063	34283
	Urban	0	0	0	0
Detroj-Rampura	Total	17580	83199	42958	40241
	Rural	17580	83199	42958	40241
	Urban	0	0	0	0
Viramgam	Total	40833	193283	100153	93130
	Rural	28645	137462	71224	66238
	Urban	12188	55821	28929	26892
Sanand	Total	47822	237845	123742	114103
	Rural	27823	141955	73183	68772
	Urban	19999	95890	50559	45331
Ahmedabad City	Total	1181269	5585528	2942922	2642606
	Rural	0	0	0	0
	Urban	1181269	5585528	2942922	2642606
Daskroi	Total	67131	321817	166727	155090
	Rural	37585	186782	95970	90812
	Urban	29546	135035	70757	64278
Dholka	Total	50721	249852	130113	119739
	Rural	34137	168907	88208	80699
	Urban	16584	80945	41905	39040
Bavla	Total	31843	158191	82432	75759
	Rural	22754	115733	60091	55642
	Urban	9089	42458	22341	20117
Ranpur	Total	17277	92926	47717	45209
	Rural	13960	75982	39000	36982
	Urban	3317	16944	8717	8227
Barwala	Total	13615	75986	39440	36546
	Rural	10305	58035	30103	27932
	Urban	3310	17951	9337	8614
Dhandhuka	Total	26922	145252	75784	69468
	Rural	20572	112777	58783	53994
	Urban	6350	32475	17001	15474

Appendix 2.B

Taluka level Child Population as per Census 2011				
Taluka name	**T/R/U**	**Child population (0-6 years)**		
		Persons	**Males**	**Females**
Mandal	Total	8954	4714	4240
	Rural	8954	4714	4240
	Urban	0	0	0
Detroj-Rampura	Total	10490	5601	4889
	Rural	10490	5601	4889
	Urban	0	0	0
Viramgam	Total	25997	13654	12343
	Rural	19493	10200	9293
	Urban	6504	3454	3050
Sanand	Total	33490	17791	15699
	Rural	20662	10749	9913
	Urban	12828	7042	5786
Ahmadabad City	Total	621829	336468	285361
	Rural	0	0	0
	Urban	621829	336468	285361
Daskroi	Total	42904	23004	19900
	Rural	26103	13864	12239
	Urban	16801	9140	7661
Dholka	Total	32034	17130	14904
	Rural	22258	11858	10400
	Urban	9776	5272	4504
Bavla	Total	23210	12352	10858
	Rural	18152	9609	8543
	Urban	5058	2743	2315
Ranpur	Total	13979	7346	6633
	Rural	11803	6185	5618
	Urban	2176	1161	1015
Barwala	Total	10662	5636	5026
	Rural	8470	4452	4018
	Urban	2192	1184	1008
Dhandhuka	Total	18969	10094	8875
	Rural	15222	8077	7145
	Urban	3747	2017	1730

Appendix 2.C

Taluka-wise population according to Religion

Names of the talukas	T/R /U	Hindu	Muslim	Christian	Sikh	Buddhist	Jain	Other	Religion not stated
DIST:Ahmadabad	Total	83.76	12.24	0.70	0.20	0.06	2.90	0.03	0.10
DIST:Ahmadabad	Rural	95.41	4.33	0.08	0.02	0.01	0.09	0.00	0.05
DIST:Ahmadabad	Urban	81.54	13.75	0.82	0.24	0.07	3.43	0.03	0.11
AMD (M Corp. + OG)	Urban	81.56	13.51	0.85	0.24	0.08	3.62	0.04	0.12
Sub-District - Mandal	Total	95.09	4.23	0.10	0.03	0.02	0.50	0.00	0.02
Sub-District - Detroj-Rampura	Total	98.56	1.08	0.04	0.01	0.01	0.26	0.00	0.04
Sub-District - Viramgam	Total	86.52	12.61	0.05	0.05	0.01	0.71	0.00	0.04
Sub-District - Sanand	Total	92.16	7.39	0.12	0.04	0.03	0.20	0.01	0.06
Sub-District - Ahmadabad City	Total	81.39	13.63	0.85	0.24	0.08	3.64	0.04	0.12
Sub-District – Daskroi	Total	96.42	2.29	0.61	0.15	0.02	0.43	0.01	0.07
AMD Cantonment (CB)	Urban	71.35	25.96	1.99	0.20	0.08	0.42	0.00	0.00
AMD (M Corp. + OG) (Part)	Urban	81.41	13.62	0.85	0.24	0.08	3.65	0.04	0.12
Sub-District - Dholka	Total	86.00	13.67	0.10	0.04	0.02	0.11	0.00	0.07
Sub-District- Bavla	Total	95.19	4.51	0.05	0.01	0.00	0.17	0.00	0.07
Sub-District- Ranpur	Total	89.66	9.68	0.06	0.05	0.03	0.48	0.00	0.04
Sub-District – Barwala	Total	96.38	3.11	0.08	0.02	0.01	0.35	0.00	0.05
Sub-District - Dhandhuka	Total	88.46	10.90	0.09	0.01	0.01	0.48	0.00	0.05

Source: Census, 2011

Note: For the sake of parsimony, we have reported only the "Total" proportions of religious composition at taluka levels and have not reported the "Rural" and "Urban" totals for the subdistricts/talukas. For the complete table, please refer to Census (2011), Table #: C-1 *(Population by Religious Community)*

Appendix 2.D: Taluka-wise SC/ST population

Taluka	T/R/U	Scheduled Caste (Census 2011)			Scheduled Tribes (Census 2011)		
		Persons	Males	Females	Persons	Males	Females
Mandal	T	8068	4206	3862	58	36	22
	R	8068	4206	3862	58	36	22
	U	0	0	0	0	0	0
Detroj-Rampura	T	5869	3017	2852	73	35	38
	R	5869	3017	2852	73	35	38
	U	0	0	0	0	0	0
Viramgam	T	23994	12350	11644	2971	1537	1434
	R	18792	9669	9123	2498	1291	1207
	U	5202	2681	2521	473	246	227
Sanand	T	29654	15672	13982	1404	776	628
	R	16871	8886	7985	235	122	113
	U	12783	6786	5997	1169	654	515
Ahmadabad City	T	596468	313630	282838	67659	35902	31757
	R	0	0	0	0	0	0
	U	596468	313630	282838	67659	35902	31757
Daskroi	T	22308	11740	10568	4643	2457	2186
	R	13222	6920	6302	2236	1176	1060
	U	9086	4820	4266	2407	1281	1126
Dholka	T	33672	17799	15873	1802	957	845
	R	25335	13410	11925	1394	730	664
	U	8337	4389	3948	408	227	181
Bavla	T	15606	8166	7440	9946	5108	4838
	R	11081	5794	5287	9849	5051	4798
	U	4525	2372	2153	97	57	40
Ranpur	T	6353	3285	3068	72	40	32
	R	5715	2964	2751	48	24	24
	U	638	321	317	24	16	8
Barwala	T	5324	2765	2559	155	81	74
	R	3506	1823	1683	141	76	65
	U	1818	942	876	14	5	9
Dhandhuka	T	12167	6445	5722	355	177	178
	R	10043	5299	4744	217	115	102
	U	2124	1146	978	138	62	76

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CHAPTER 3: EDUCATIONAL STATUS OF AHMEDABAD

"No country, whatever its stage of economic development, can in the modern world afford to do anything less than provide primary education to all its people. That is essential to survival and development."

Daulat Singh Kothari

EDUCATIONAL STATUS

3.1 Introduction

Education plays a central role in expanding human capabilities, widening choices and enhancing freedom. Education acts as a means for empowerment. Educated people are generally better informed about the world, make better choices, have a healthier family, are more socially aware and politically active and are able to take better control of their destiny. Education of women reduces the gender gap in opportunities, empowers women to make reproductive and career choices, and resist gender violence, and makes children healthier enabling them to live longer. Education enhances human capital, creates skilled labour force, and makes a society better adapted to changing world economy. Globally, the level of education in a society is regarded as a marker of quality of labour force and helps to attract investments (Hirway & Mahadevia, 2004). Economic gains of an educated and productive labour force far outweigh the cost of educating them. No economic growth is sustainable in the long run without a well-educated population.

Indian leaders emphasized the importance of education from the time of Independence. In his "*Tryst with Destiny*" speech, Pandit Jawaharlal Nehru stressed the need for "ending of poverty and ignorance and disease and inequality of opportunity" (Jawaharlal Nehru, 1947). This emphasis on education was enshrined in article 45 (directive principles of state policy) of Constitution in 1950: "*The State shall endeavor to provide free and compulsory education for all children until they complete the age of 14 years*" (Constitution of India, 1950). With a literacy rate of mere 18.33% in 1951, India had a long way to go in order to achieve universal literacy and primary education. The literacy rate did improve substantially over the next 60 years, averaging 10% increase per decade, reaching 74.04% in 2011. However enormous disparities in literacy across states, gender, social groups and religion still persists. India has made phenomenal progress in giving access to primary education, especially in the last decade through government initiatives such as Sarva Shiksha Abhiyan, Right to Education, Mid-day meal scheme etc. Some of these initiatives will be discussed later in this chapter. The rapid changes in education in the last decade can been across different regional levels like

state, district and taluka level. The focus of this chapter is on the education scenario in district and its talukas. We will begin with highlighting the state of education in Gujarat.

(Gujarat University: Photo Credit: http://www.gujaratuniversity.org.in/)

3.2 Education in Gujarat

Gujarat has been an important economic and educational center even prior to independence. Maharaja Sayajirao Gaekwad III of Baroda princely state pioneered educational reforms by making primary education free and compulsory in 1906 (Drèze & Sen, 2013). In the British administered regions of Gujarat, many schools and colleges were set up during the mid-19th century. Education also received primacy during the Gandhian era of freedom struggle. Mahatma Gandhi started Gujarat Vidyapith in 1920 with the aim of creating a nationalistic education system and preparing youths for the task of national reconstruction. Ahmedabad Educational Society (AES) was established in 1935 by a group of Industrialists and philanthropists under the guidance of Sardar Vallabhbhai Patel. Since then AES has set up several schools and colleges teaching arts, science, and commerce and was instrumental in setting up the Gujarat University (GU) in Ahmedabad in 1949. After the formation of Gujarat state in 1960, The Department Of Education and Labour was established. Then education was the primary responsibility of the state (post-independence, education was included in the state list of the seventh schedule of Indian constitution). In 1976, education was moved to the concurrent list- making it a joint responsibility of state and center. This led to states

receiving substantial funding from the center for elementary education. In the same year, a separate Education Department with a secretariat for primary, secondary and tertiary education was established.

Gujarat has been an industrial power house of India, but its educational achievements have been less than spectacular compared to its income level. In 1981, Gujarat literacy was 43.7%, very close to the national average of 43.57%. But gender differences and rural-urban disparity were high. Rural-female literacy was very low at 24.06%, and in urban areas it was more than twice at 51.13%, higher than the national average (Hirway & Mahadevia, 2004). The figures improved substantially in 2011. Overall literacy rose to 78.03% in 2011, slightly higher than the national average of 74.04%; rural female literacy rose by 2.6 times to 61.36 %. The literacy rates for SC and ST communities show even higher disparity. In 1981, the literacy rate for ST women was just 11.64% , but showed dramatic improvements by rising to 36.33% in 2001 and 53.16% in 2011. There are substantial regional differences within Gujarat. Dry regions like Dahod, Banaskanta and The Dangs performing very poorlyin literacy, whereas Gandhinagar and Ahmedabad perform the best (Hirway & Mahadevia, 2004).

3.2.1 Higher Education in Gujarat

Prior to independence the Baroda college of science was established by Maharaja Sayajirao Gaekwad III of Baroda state. In 1949 it became a university which is now named after the Maharaja. Gujarat University was set up in Ahmedabad in 1949. After independence, it became a center for higher education and research. Under the visionary leadership of Vikram Sarabhai several institutes of national importance such as Physical Research Laboratory (PRL), Indian Space Research Organization (ISRO), and Indian Institute of Management -Ahmedabad were set up. Ahmedabad, the financial and industrial capital of Gujarat, has also become home to premier public institutes such as National Institute of Design (NID), Indian Institute of Technology Gandhinagar (IITGN), Public Health Foundation of India (PHFI), Sardar Patel Institute of Public Administration, Mahatma Gandhi Labour Research Institute, B J Medical College, and Gujarat Institute of Developmental Research (GIDR). Gujarat also has pioneering institutes in agriculture and rural development such as the Institute of Rural Management (IRMA) and Anand Agriculture University. Gujarat is also known for several private educational institutes such as Center for Environment and Technology (CEPT), DAIICT, Nirma

University and the Mudra Institute of Communication (MICA). Ahmedabad has remained a center for higher education in Gujarat. In the next section, we provide a summary of state of literacy, elementary education and higher education in Ahmedabad.

3.3 Education in Ahmedabad District

Ahmedabad is a highly literate district of Gujarat. With an 85.37% literacy rate in 2011, it surpasses the national average by 10% and Gujarat by 6%. However, gender differences and urban-rural gap remain high, but the gaps (both gender and regional) show a declining trend. There is a substantial intra-regional disparity among the different talukas of Ahmedabad district. Being a highly urbanized district (84%), Ahmedabad's statistics are weighed heavily by the Ahmedabad city where a majority (77%) of the population lives. Schooling access has increased over time with enrollment figures in primary school shooting up to near 100%. Interestingly, the number of government schools has remained roughly the same over the last decade, but the number of private schools is going up rapidly. A shift towards private schooling is seen even among the poorer sections of society. Enrollment figures for girls are increasing, but gender differences can still be seen due to the skewed sex ratio and other demographic factors. Enrollment gap between Ist and VIIth grade is reducing both for males and females. School dropout rate at the primary level has come down from 3.5% in 2009 to 1.97% in 2013-14. The number of primary and upper primary teachers with graduate and post graduate degrees has been increasing over time. However, a point of major concern is the lack of learning among schools. Government's Gunotsav evaluation of schools has shown a decreasing trend in the number of A and A+ grade schools and ASER survey in rural Ahmedabad has shown a continual decline or stagnation of reading and arithmetic abilities of students at the primary level. Gender parity in secondary and higher secondary remains very high, especially in rural talukas. In the rest of the chapter we will explore literacy, state of elementary education , and learning levels of children in Ahmedabad. We will also discuss educational policies and initiatives by state and central government initiatives to address gaps in school education.

3.3.1 Literacy and Elementary Education

Though education is much more than just the ability to read, write and count, literacy remains one of the most basic indicators of educational attainment of a population. The effective

literacy rate, enumerated by Census, measures the proportion of people aged 7 or above who can read and write. This includes both child and adult literacy. According to the latest census figures (2011), Ahmedabad district has a literacy rate of 85.37%, which is about 11% more than the national average of 74.04% and 7% higher than the Gujarat rate of 78.03% (final figures). The literacy growth has been higher for females (about 8.5%) than males (3.4%).

Figure 3.1: Literacy Rate & Gender Gap in Literacy Rate of Ahmedabad District

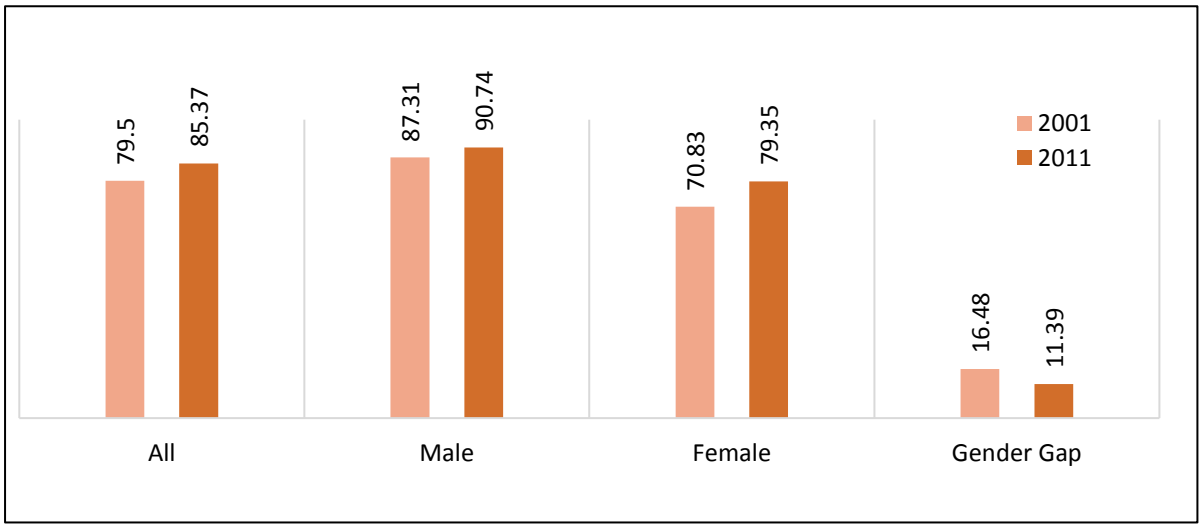
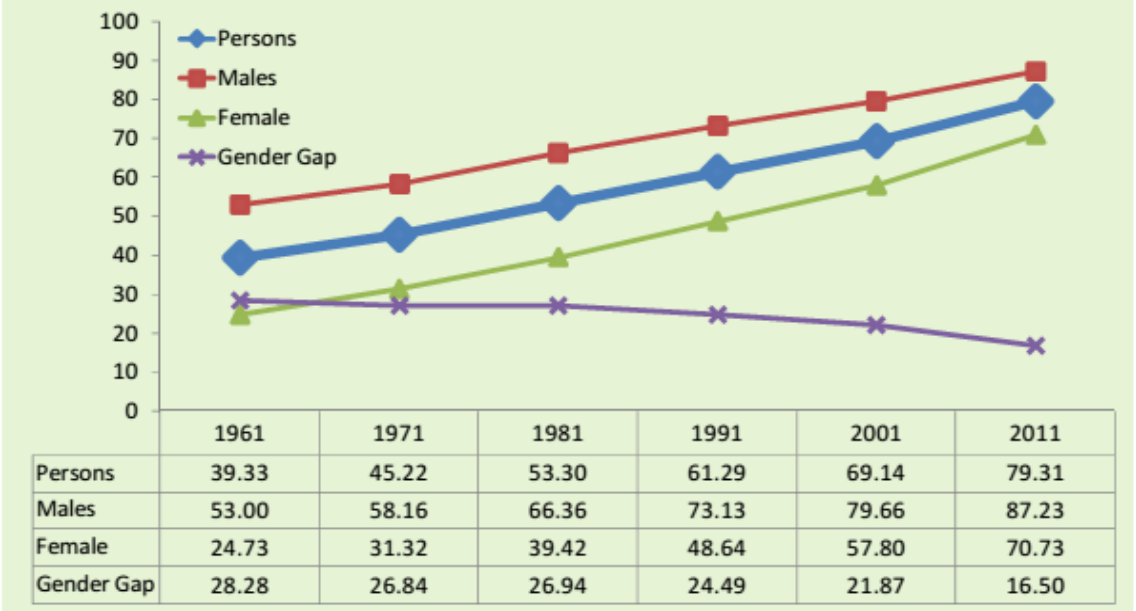


Figure 3.2: Literacy Rate and Gender Gap in Literacy, Gujarat (1961-2011)



	1961	1971	1981	1991	2001	2011
Persons	39.33	45.22	53.30	61.29	69.14	79.31
Males	53.00	58.16	66.36	73.13	79.66	87.23
Female	24.73	31.32	39.42	48.64	57.80	70.73
Gender Gap	28.28	26.84	26.94	24.49	21.87	16.50

***Source**: Provisional Population Totals , Paper 2, Volume 1 of 2011, GUJARAT Series 25. Final figures for 2011 (in %) -Total (78.03), Male (85.75), Female (69.68), Gender gap (16.07)*

The gender gap in literacy, defined as difference between male and female literacy rate, has reduced from 16.48% to 11.39 % (see Figure 3.1). This trend is similar to Gujarat where a steady increase in literacy was observed over the same period across both genders with a declining gender gap (see Figure 3.2).

Ahmedabad is primarily an urban district with 84% of the population living in urban areas. The urban literacy rate in the district in 2011 was 87.93%, while that in rural areas was 71.05 %, reflecting a gap of about 17 percentage points (see Figure 2.3). The total literacy rate (85.37%) primarily reflects that of the urban population.

Over the last decade, rural-urban gap has reduced from 20.69 % to 16.88%. The urban-rural (regional) gap is more severe for females than males at 24.83% compared to 9.27% highlighting the greater gender bias in rural areas than urban. However, the regional gap in female literacy has also marginally reduced from 30.14 % in 2001 to 24.83% in 2011 (see Table 3.1). Since the gender gap is closing in primary education, the literacy gender gap is largely a reflection of historical bias against female education and early child marriage.

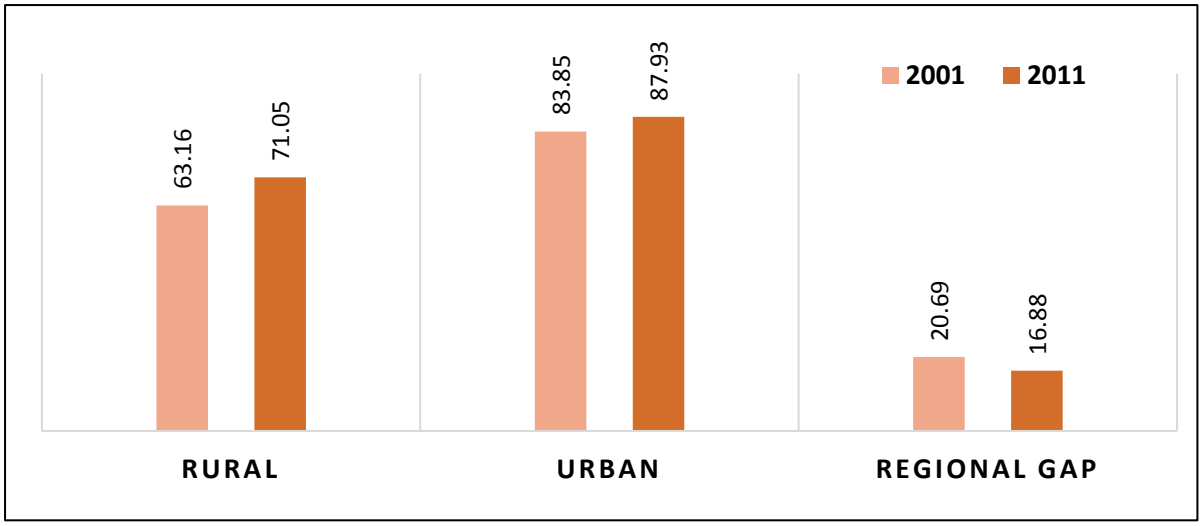
TABLE 3.1 Status of Literacy (%) in Ahmedabad District

	2001				2011			
	Total	**Rural**	**Urban**	**Regional Gap**	**Total**	**Rural**	**Urban**	**Regional Gap**
All	79.5	63.16	83.85	20.69	85.37	71.05	87.93	16.88
Male	87.31	78.26	90.04	11.78	90.74	82.89	92.16	9.27
Female	70.83	46.83	76.97	30.14	79.35	58.44	83.27	24.83
Gender Gap	16.48	31.43	13.07	- 18.34	11.39	24.45	8.89	-15.56

Source: Census 2001 and 2011

Female literacy in rural areas are generally much lower than male literacy rates. Ahmedabad rural women, have a very low literacy rate of 58.44% in 2011 (standing at 20th position in ranking across districts). This rate is slightly greater than the Indian average, but lower than the Gujarat average of 61.36%. The best performing districts of Gujarat are Navsari and Anand with female rural literacy rates of 76.23% and 73.43% respectively

Figure 3.3: Literacy: Rural – Urban Gap

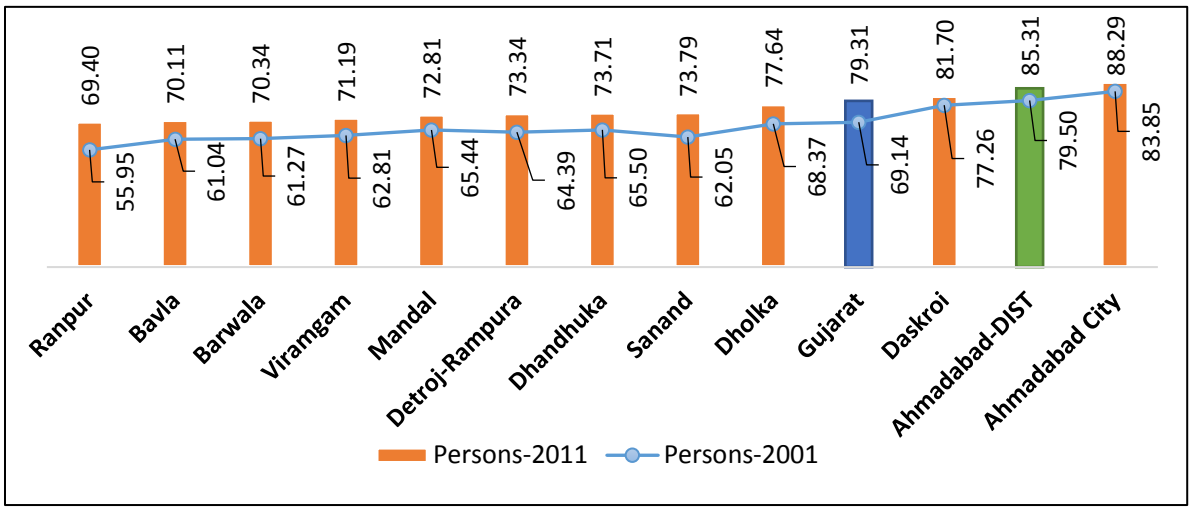


Source: Registrar General of India, Census 2001 and 2011

3.3.2 Regional Variations in Literacy

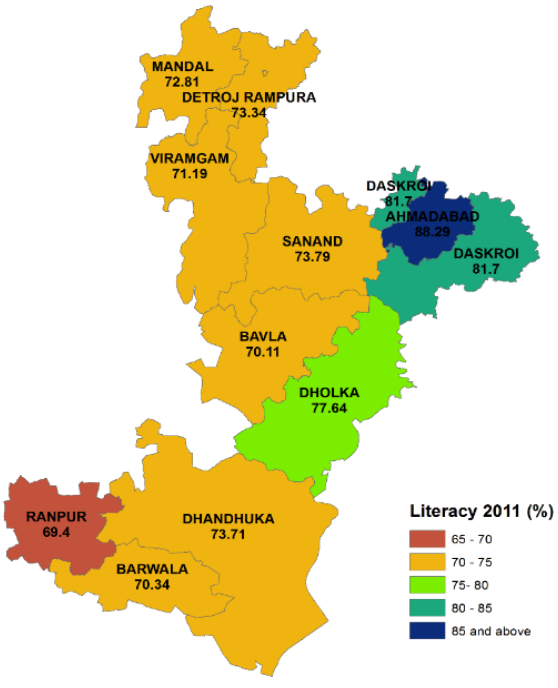
Ahmedabad district shows substantial variation in literacy across its 11 talukas. Ranpur taluka has the lowest literacy rate of about 70%, whereas Ahmedabad city has close to 88% population literate (see Figure 3.4). The district average is heavily weighted by the Ahmedabad city rate. Growth from 2001 is also uneven across the talukas. Ranpur showed the highest increase of about 15 percentage points whereas Ahmedabad city showed the lowest at 4.4%, which is simply a reflection of the fact that when rates approach their ceiling (100%), growth slows down. Region wise analysis (see Map3.1) shows that the north east talukas (Ahmedabad, Daskroi and Dholka) which are more urbanized fare better than southern and western talukas.

Figure 3.4: Literacy Rate in Ahmedabad Talukas: 2001, 2011



Source: Registrar General of India, Census 2001 and 2011

Map: 3.1: Ahmedabad Total Literacy Rate , 2011

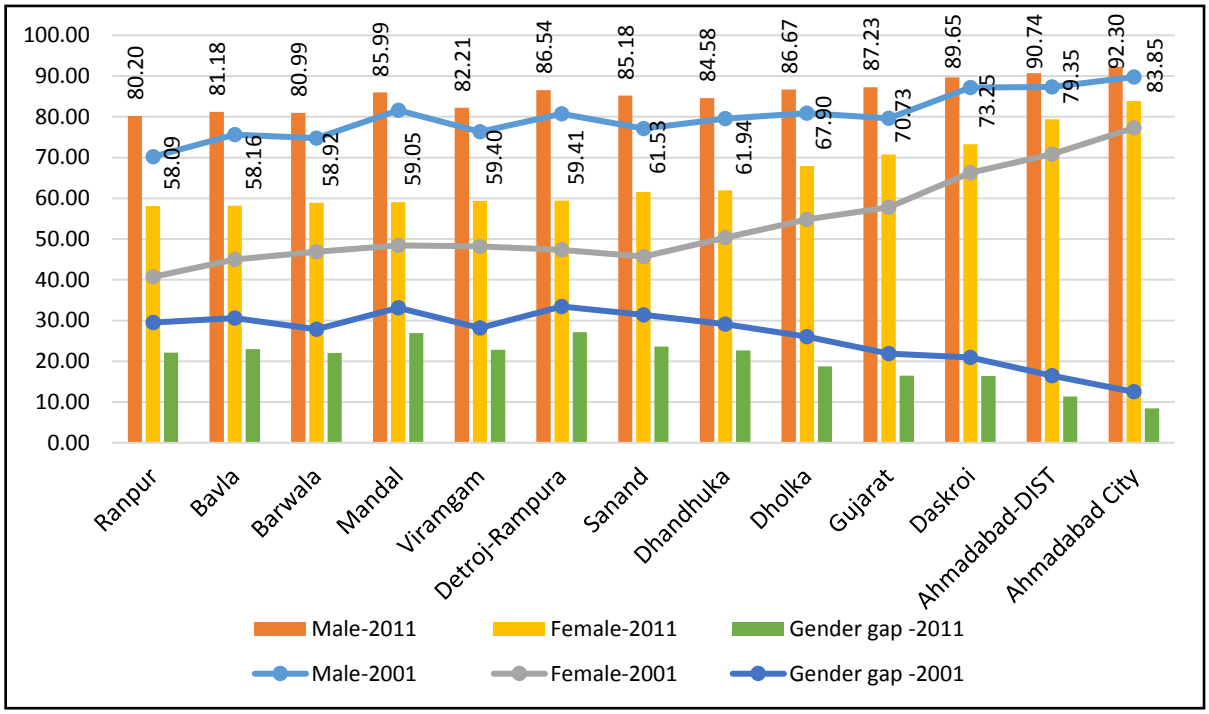


Source: Registrar General of India, Census 2011

3.3.3 Regional Variations by Gender

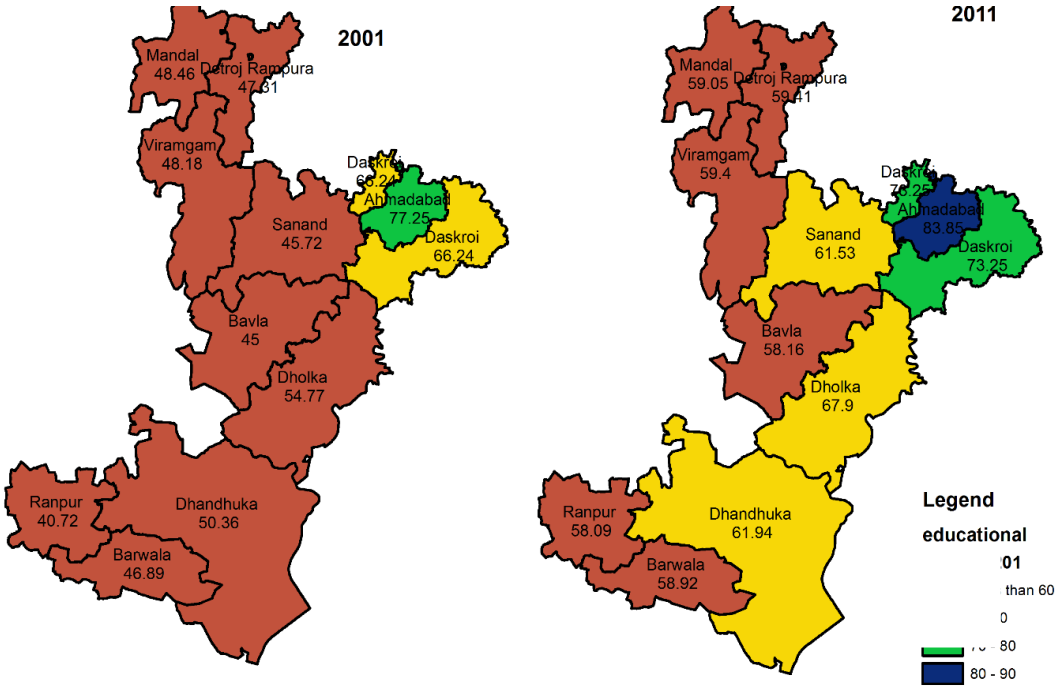
The gender differences in literacy across talukas shows a pattern similar to that of the overall literacy rate. Figure 3.5 shows the literacy rate in different talukas by gender and the differences between 2001 and 2011 rates. Ranpur has the lowest female literacy rate of 58.09%, followed by Bavla (58.16%) in 2011. Ahmedabad city has the highest female literacy rate (83.85%) followed by Daskroi (73.25%). It is interesting to note that all of the remaining 9 talukas (Ranpur to Dholka) have male and female literacy below that of Gujarat state. The pattern is similar in 2001 with a few minor variations. Across all talukas it can be seen that female literacy has increased and gender gap has lowered between 2001 and 2011. The gender gap in 2011 is the highest in Detroj-Rampura (27.13%) and the lowest in Ahmedabad city (8.45%). Ranpur, showed the highest increase in female literacy of 17.37 percentage points in the 2001-2011 period, whereas Sanand showed the highest reduction in gender gap (7.73%) in the same period.

Figure: 3.5 Literacy Rate by Gender



Source: Registrar General of India, Census 2001 and 2011.

Map 3.2: Female Literacy Rate ,2001 & 2011

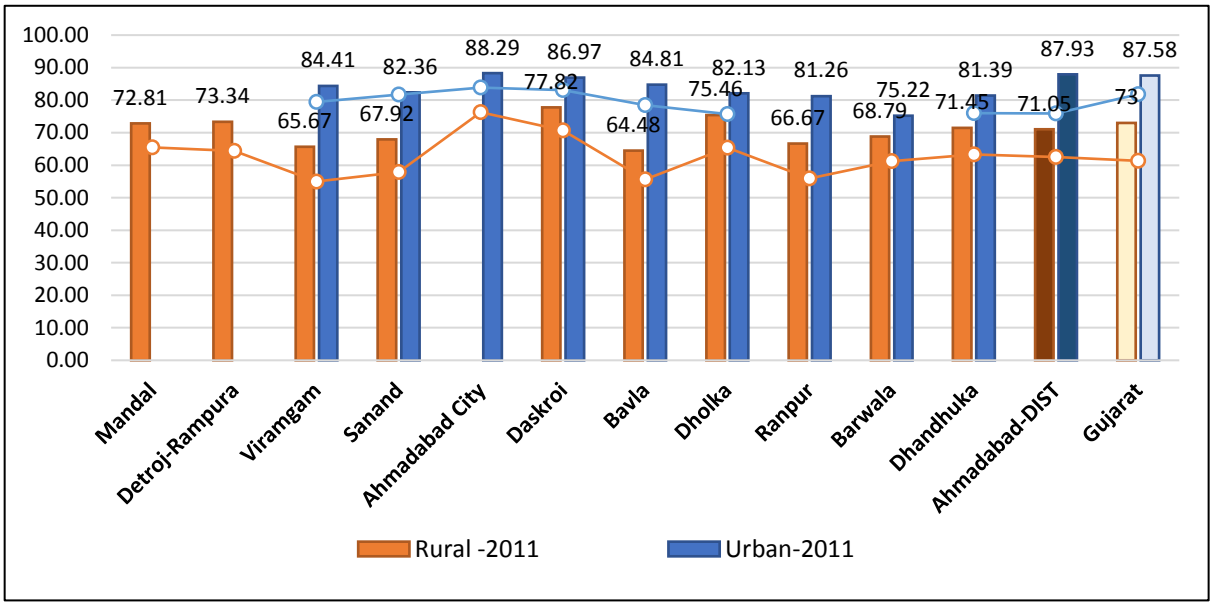


Source: Census 2011,Registrar General of India

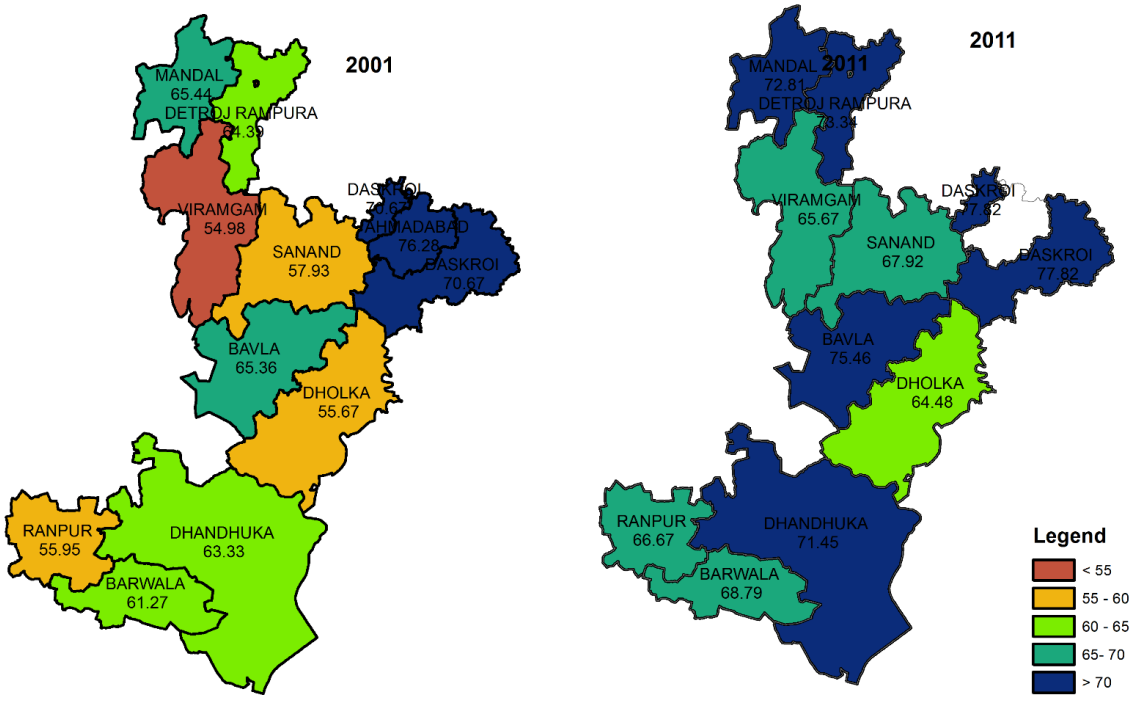
3.3.4 Rural-Urban Gap

Ahmedabad district urban literacy rate (87.93%) is slightly higher and rural literacy rate is (73%) slightly lower than those for Gujarat state. Ahmedabad district has a few talukas which are classified entirely as rural (Mandal, Detroj-Rampura), whereas Ahmedabad city is entirely urban as per the 2011 classification. Notably, Ranpur and Barwala were considered entirely rural and Ahmedabad city also included rural areas as per the 2001 classification. The Rural-Urban (RU) gap has been lowered in all other talukas (see Figure 3.6). In 2001, Viramgam had the lowest literacy of 55%, and had the higher RU gap of 24.45%. Literacy rose by 10 % to 65.67%, and RU gap was 18.74% in 2011. Dholka had the lowest RU gap in 2001, at 10.34%, and it dropped to 6.67% in 2011. The lowest RU gap in 2011 was in Barwala Taluka (6.43%). However, the gap in Ahmedabad district as a whole has widened between 2001 (13.36%) and 2011 (16.88%), which is mainly a reflection of urbanization of rural talukas.

Figure 3.6: Literacy Rate by -Residence (Rural and Urban)



Map 3.3: Ahmedabad Rural Literacy-2001 & 2011



In 2011, Ahmedabad city did not have rural area

Source: Census 2011,Registrar General of India

3.4 Schools and Enrollment

Ahmedabad district has a good mix of public and private schools in roughly equal proportion. These schools have various state (Gujarat State Examination Board, Gujarat Secondary and Higher Secondary Education Board) and central (Central Board of Secondary Education) and private board (Indian Certificate of Secondary Education) affiliation. Public schools in Ahmedabad city are run by the Ahmedabad Municipal Corporation (AMC).

In Gujarat schools are categorized according to the level of education they are providing. Primary classes are from class I-V, upper primary is from class VI-VIII, secondary is from IX to X and higher secondary XI-XII. Prior to 2010 (i.e. before the implementation of RTE-2009), only VI-VII grades were considered as upper primary in Gujarat. From 2012, VIIIth grade was fully integrated into primary school system. Data on schools and enrollment are compiled by Gujarat Council of Elementary Education (under the Sarva Shiksha Abhyan) and integrated with the national level District Information System for Education (DISE). SSA-DISE provides data on five broad classes of schools: schools which have only primary (OP) classes; primary and upper primary (P+UP); only upper primary (OUP); primary, upper primary, secondary/higher secondary (P+UP+S/HS); and, upper primary, secondary and higher secondary (UP + S+HS). Table 3.2 lists the number of schools as per this classification for the years 2009-10 to 2014-15 separately for government and private schools.

Box 3.1: Primary Education for fairness and human security

"Why is it so important to close the educational gaps, and to remove the enormous disparities in educational access, inclusion and achievement? One reason, among others, is the importance of this for making the world more secure as well as more fair … widening the coverage and effectiveness of basic education can have a powerfully preventive role in reducing human insecurity of nearly every kind… The extreme case of insecurity is the certainty of deprivation, and the absence of any chance of avoiding that fate." (Sen, 2003)

Amartya Sen his address at the Commonwealth education conference, Edinburgh in 2003

(Photo Courtesy: Nupur Joshi, IITGN)

Figure 3.8 shows the time trend in the number of government schools teaching at different levels. The total number of government schools in Ahmedabad has declined from 1501 (2009-10) to 1364 (2014-15). In 2012, many schools which had both primary and upper primary shifted to only upper primary. Number of P+UP+S/HS schools have also decreased. The scenario with private schools is quite different from the government schools. There is a rapid increase in the total number of private schools (see Figure 3.9) during this period, which is driven primarily by the Ahmedabad city schools. The number OP schools has more than doubled from 51 to 121 (Table 3.2). A sharp increase can be seen in the number of schools teaching primary and upper primary classes (689 to 1180). The number of private schools with secondary education under the P+OP+S/HS category has also increased, but shows a dip in 2011-12 possibly due to missing data or misclassification.

The decline in government schools and rapid rise in private schools is matter of great concern. The following reasons were cited by Ahmedabad district educational officials (Deputy Administrative officer and District Educational Officer) to explain this trend:

- Parents perceive government schools to be of lower quality than private schools. Even the poor parents now wants to send kids to private schools and their demands are now met by mushrooming of low cost private schools.

- The rise of the aspirational middle class with buoyant income who want to send their kids to private English medium schools
- English as medium of instruction is a major puller for private schools. All state government schools are Gujarati medium and English is taught only from class 5. Parents suppose that lack of English language skills will be a barrier to getting jobs.

Gujarat CM Smt. Anandiben Patel on a surprise visit to school.
Photo Courtesy:http://anandibenpatel.com/)Courtesy:http://anandibenpatel.com/)

3.4.1 Availability of Schools

The Commissionerate of Schools, Gandhinagar looks after the development and management of secondary and higher secondary education in Gujarat.

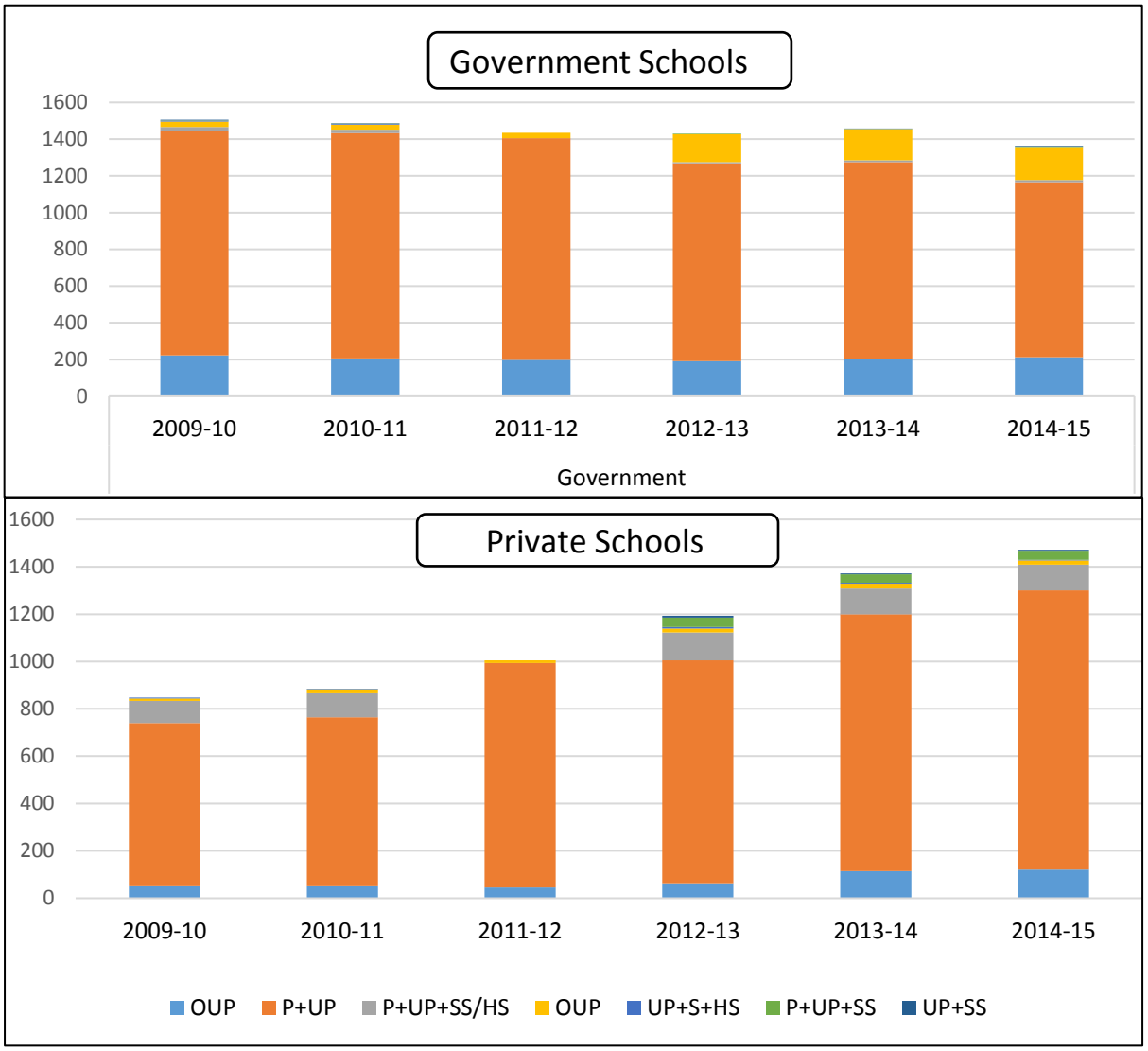
Table 3.2: Number of schools in Ahmedabad

Table 3.2 Number of Schools In Ahmedabad												
	Government						PRIVATE					
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
OP	222	206	198	192	205	213	51	51	46	63	115	121
P+UP	1224	1227	1207	1076	1069	953	689	713	948	942	1084	1180
P+UP+SS/HS	20	19		6	11	11	93	102		117	109	108
OUP	30	28	29	153	169	181	11	16	11	17	20	18
UP+S+HS	5	5					3	2		7	4	3
P+UP+SS	1	1		2	3	3				39	36	38
UP+SS	3	2			1	3		1		8	4	4
DISTRICT TOTAL	1505	1488	1434	1429	1458	1364	847	885	1005	1193	1372	1472
Source: Gujarat Council of Elementary Education (SSA), Gandhinagar												

Note: OP- Only Primary; P-Primary; UP-Upper Primary; SS-Secondary School; HS-Higher Secondary

There is a plan to publically share the data on secondary schools through the recently launched Unified- DISE system (UDISE- 2013-14). The state report card on secondary education for Gujarat is currently available, however district report cards have not yet been released. In later section, we will discuss the secondary enrollment restricted Ahmedabad rural talukas.

Figure 3.7: Number of Schools in Figure



3.4.2 School Enrollment and Gender Parity

Primary and upper primary school enrollment has been steadily increasing in Ahmedabad district, owing to an increase in first generation learners, migration and population growth,

and government policies to increase enrollment especially of girls. Table 3.3 presents annual enrollment data (2005-06 to 2014-15) for boys and girls as well as the percentage change in enrollment over the previous year. In 2005-06, about 6.55 lakh students were enrolled in elementary schools in Ahmedabad district, 46% percent of them girls. Enrollment steadily rose every year (except in 2008-09) and was 9.86 lakhs in 2013-14 out of which 4.52 lakhs were girls. There was a dip in 2014-15 in enrollment to 9.64 lakhs. The biggest change in enrollment (12.67%) was in 2012-13, possibly due to VIIIth grade being moved to the upper primary school category as per RTE norms.

Table 3.3 also shows gender parity and the enrollment gender gap from 2005-06 to 2014-15. The Gender Parity Index (GPI) in education measures the relative access to education. It is a crude indicator given by the ratio of number of girls enrollment to boys enrollment in a given level of education. GPI has been marginally declining from 0.849 to a low of 0.819 between years 2005 to 2007. It again rose back to 0.849 in 2013. The highly skewed sex ratio (all ages: 904 F/1000M, 5-14 years 822 F/1000M; calculated from Census 2011 data) contributes to lower enrollment of girls (See Figure 3.10) contributing dominantly to the low GPI seen in Ahmedabad. The average GPI over 2005-2014 years is 0.831, which is slightly higher than the sex ratio of 0.822.

Table 3.3 Enrollment of Boys and Girls and Gender Parity

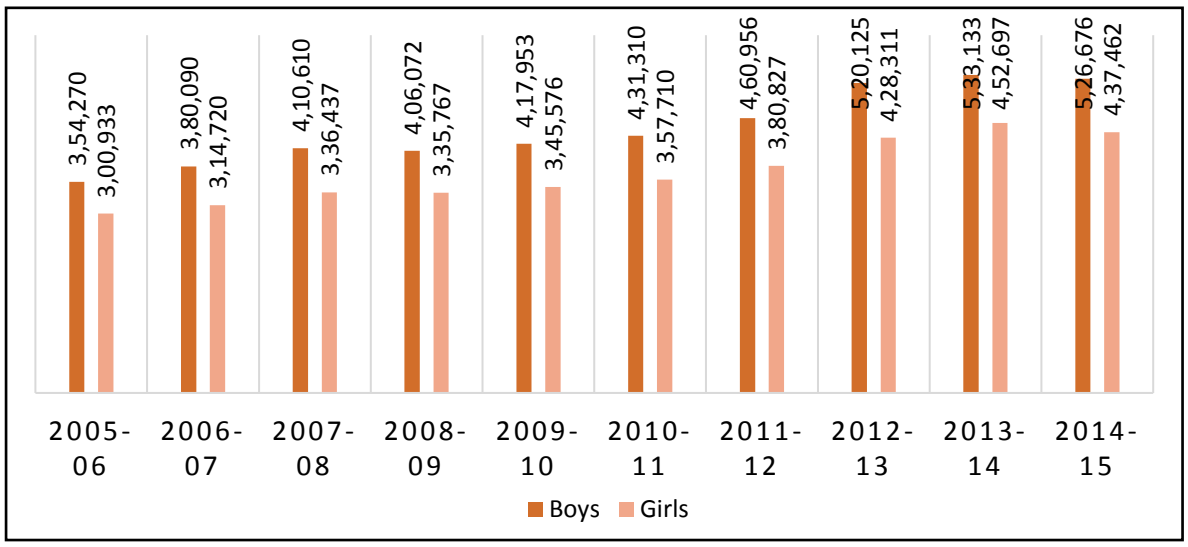
Year	Boys	Girls	Total	% change in enrollment	Gender Parity Index
2005-06	3,54,270	3,00,933	6,55,203	5.14	0.849
2006-07	3,80,090	3,14,720	6,94,810	6.04	0.828
2007-08	4,10,610	3,36,437	7,47,047	7.52	0.819
2008-09	4,06,072	3,35,767	7,41,839	-0.7	0.827
2009-10	4,17,953	3,45,576	7,63,529	2.92	0.827
2010-11*	4,31,310	3,57,710	7,89,020	3.34	0.829
2011-12*	4,60,956	3,80,827	8,41,783	6.69	0.826
2012-13*	5,20,125	4,28,311	9,48,436	12.67	0.823
2013-14*	5,33,133	4,52,697	9,85,830	3.94	0.849
2014-15*	5,26,676	4,37,462	9,64,138	-2.20	0.831

***Includes VIIIth class.**

Source: *Gujarat Council of Elementary Education (SSA), Gandhinagar*

Grade wise Enrollment - Transition and Retentions: Grade wise enrollment of students in different years gives us a good idea about how many students are progressing from class to class, how many are dropping out etc. Table 3.4 shows grade wise enrollment of all students from class I to VII for the 2005-2013 period. Grade VIII is not included as it was not a part of upper primary education until 2010.

Figure 3.8: Gender Differences in Enrollment (I-VIII)



Source: District Information System for Education (DISE) Reports

Table 3.4 Grade wise Enrollment

Grade	I	II	III	IV	V	VI	VII
2005-06	114102	100800	95562	92658	89370	85004	77707
2006-07	112570	107337	102074	97826	96530	91129	87315
2007-08	119654	112151	112006	106635	103794	98917	93890
2008-09	117156	109738	109162	108401	103475	99286	94621
2009-10	121525	112225	109733	109482	109352	101928	98199
2010-11	126370	115848	111327	109061	108965	107546	99573
2011-12	126495	119433	115533	111887	109815	107564	105291
2012-13	125310	126341	124792	123967	118096	114548	112182
2013-14	123416	127331	130876	129680	127703	120511	115418

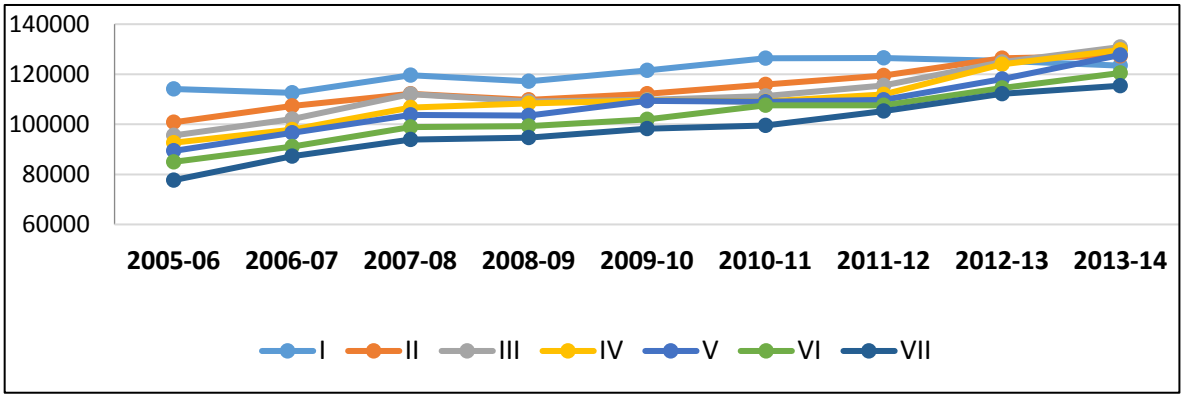
Source: District Information System for Education (DISE)

The Grade-wise enrollment figures from 2005 to 2013 are plotted in Figure 3.11. As expected, lower grade enrollments are generally greater than the higher grades. In 2005, the ratio of VII grade to I grade enrollment was 0.68. This largely reflects the lower enrollment and higher

dropout of students who started their educational journey seven years earlier. This ratio has converged to 0.94 in 2014. From 2012 onwards we see Ist grade enrolment slowly decreasing compared to other grades. Here too age structure plays a role. A quick look at the population pyramid of Ahmedabad in the Introduction chapter reveals that the 5-9 age group (primary) children are fewer than the 10-14 year (upper primary) old children due to fertility decline.

Combined with the near universal enrollment in primary schools, this contributes to convergence and eventual decline in the ratio of enrolment in primary to upper primary schools.

Figure 3.9: Grade wise Enrollment 2005-2013



Source: District Information System for Education (DISE) 2013-14 report

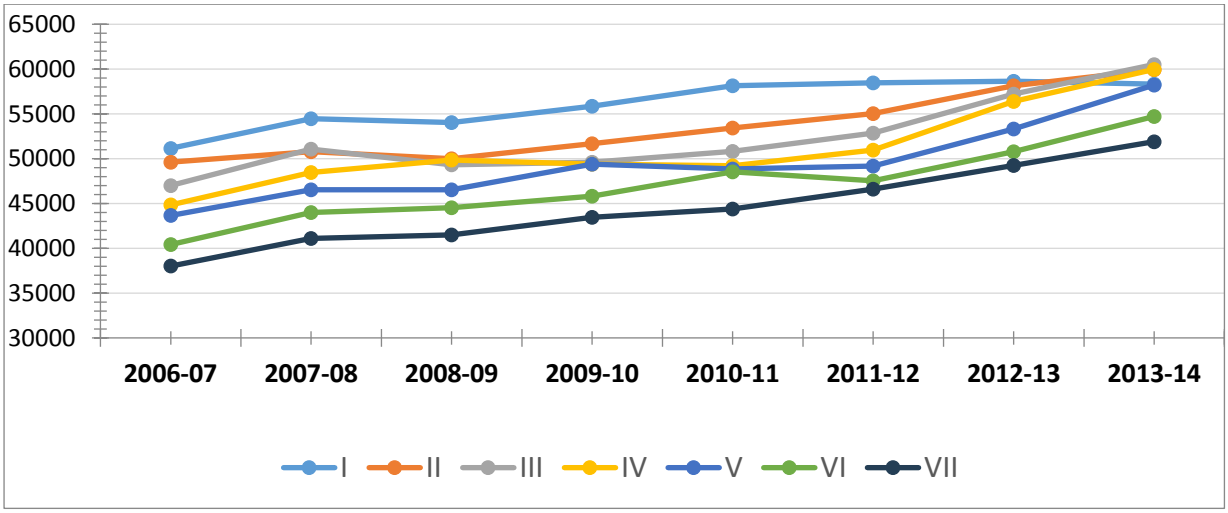
Grade-wise Enrollment by Gender: In Table 3.5 we see the enrollment figures for girls at different grades from 2005-2013. In Figure 3.12, the same is plotted. Enrollment figures are increasing every year in almost all grades, but the growth rates are slowing down. As expected, lower grades have generally greater number of children enrolled than higher grades. But, convergence in enrollment from grades I to VII can be seen just as in total enrollment (figure 3.11), although the degree is smaller. In 2005, the ratio of VII grade to I grade enrollment was 0.64 and it rose to 0.89 in 2013, indicating improvement, but not to the same level as boys and girls combined (0.94).

Table 3.5 Ahmedabad Girls grade wise enrollment

Grade/Year	I	II	III	IV	V	VI	VII	Total
2005-06	53348	46990	44371	42867	40925	38214	34218	300933
2006-07	51152	49617	47006	44839	43660	40415	38013	314702
2007-08	54466	50775	51083	48473	46529	44006	41105	336437
2008-09	54033	50010	49302	49863	46538	44528	41493	335767
2009-10	55849	51669	49618	49379	49403	45807	43475	345200
2010-11	58131	53410	50810	49201	48851	48523	44372	353298
2011-12	58453	55043	52840	50973	49170	47542	46616	360637
2012-13	58646	58138	57228	56400	53312	50780	49244	383748
2013-14	58333	59927	60509	59967	58222	54712	51904	403574

Source: District Information System for Education (DISE) 2013-14 report

Figure 3.10: Ahmedabad Girls Grade wise enrollment I-VII



Source: District Information System for Education (DISE) 2013-14 report

Enrollment Rates: Enrollment ratios like Gross Enrollment Ratio (GER) and Net Enrollment Ratio (NER) are used to track educational access over time. GER gives the ratio of students enrolled in a given education level (like primary) to the number of eligible students in that education level, expressed as a percentage. GER can be greater than 100%, as it also includes enrollment of students of higher age group, but studying in lower grade levels. NER corrects this problem by considering only those enrolled children who are in the official age group for that grade.

In Table 3.6, GER and NER at primary and upper primary level from 2006 to 2013 is given (Figure 3.13 plots the same). GER at the primary level has consistently risen from 83% in 2006 to 102.3%. NER (primary) also rose from a low figure of 67% in 2006 to 82.2% in 2013,

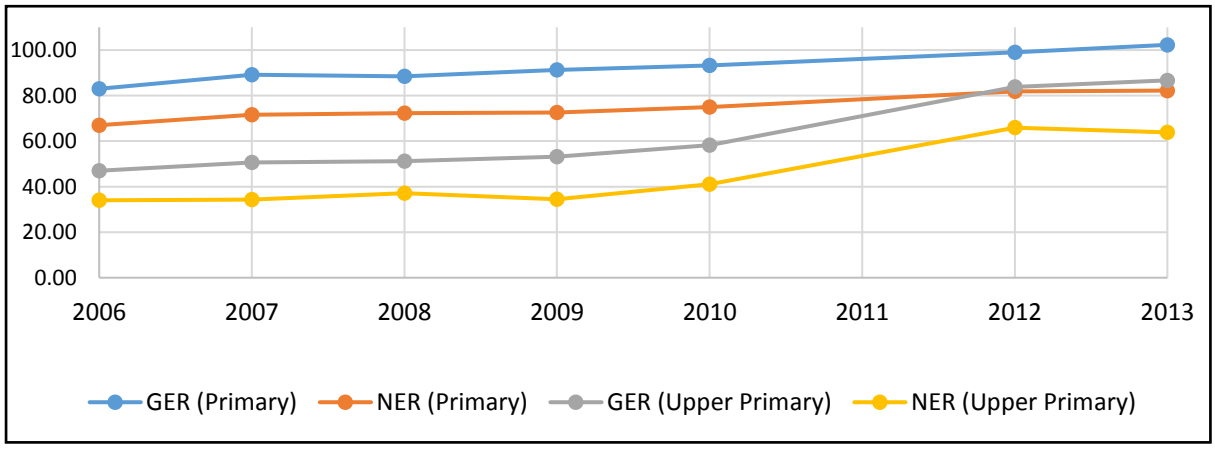
indicative of a truly expanding education access at the primary level. However it also shows that 17.8 % of the students in the primary school age group are still out of school- who have either never enrolled or dropped out before finishing primary education. The situation worsens at the upper primary level where the 2014 GER stands at 86.7% and NER for the same year is low at 63.8%, indicating a far higher number of out of school children in 11-14 year age group.

Table 3.6 : GER and NER at primary and upper primary level from 2006 to 2013

Year	GER (Primary)	NER (Primary)	GER (Upper Primary)	NER (Upper Primary)
2006-07	83.00	67.00	47.00	34.00
2007-08	89.20	71.60	50.60	34.30
2008-09	88.50	72.30	51.20	37.20
2009-10	91.30	72.50	53.10	34.50
2010-11*	93.20	75.00	58.20	41.10
2011-12#	100.73	86.74	101.12	84.19
2012-13*	99.00	81.80	83.80	65.90
2013-14*	102.30	82.20	86.70	63.80

** Includes VIII grade , #Data from DEO Ahmedabad City/Rural;* *Source: DISE*

Figure 3.11: Gross & Net Enrollment Ratio 2006-13



3.4.3 Flow Rates

Flow rates are defined in student cohorts to study the expected future trajectory of children in schools. The commonly used flow rates are defined (Singh & Raju, 2006) below and are tabulated for Ahmedabad in Table 3.7 for the 2009 to 2014 period.

Retention rate (primary level): It is the proportion of enrolled students, expressed as percentage, in grade V (barring repeaters) in a given year to the number of students enrolled in grade I, four years earlier.

Transition rate (primary to upper primary): It is the number of students admitted to the VI grade in a given year, expressed as a percentage of the number of students enrolled in the V^{th} grade in the previous year.

Repetition rate (primary): Total number of students in class I-V, who are enrolled in the same grade as in a previous year, expressed as a percentage of the total enrolment in class I-V.

Dropout rate (primary): It is the sum of the dropout rates across grades I-V. The dropout rate for a given grade 'g' is defined as the proportion of students, dropping out of grade g, expressed as a percentage of the total enrolled students in grade g.

Table: 3.7 Trends in Educational Flow Rates (Ahmedabad)

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Retention rate (Primary)	96.50	97.55	96.59	96.72	98.03	98.35
Transition rate(Primary to Upper Primary)	95.51	98.18	98.78	96.28	97.44	94.21
Repetition Rate (Primary)	4.5	6.34	4.02	0.69	1.84	NA
Drop out rate (Primary)	3.50	2.45	3.41	3.28	1.97	1.66

Source: Gujarat Council of Elementary Education (SSA), Gandhinagar

Primary retention rate was 96.50 % in 2009, and increased to 98.35% in 2014. and has remained about the same in the last four years. Transition from primary to upper primary has been consistently above 95% since 2009(with a marginal dip in 2014-15), reaching a maximum of 98.78% in 2011-12, indicating substantial progress in preventing dropouts at primary school. Repetition rate at primary level has come down from 4.5% in 2009 to 1.84% in 2013-14. This may be partially be due to the RTE rule of no detention policy.

Dropout rates indicate the retaining capacity of the system (lower, the better). However, calculating reliable dropout rates based on enrollment and repeaters data is difficult as it does not represent true cohort of students passing through various grades with differential risk of dropping out (Mehta, 2007). In Table 3.7, we see that drop-out rates in Ahmedabad have come down and are hovering from 1.66% to 3.5 %.

3.4.4 Dropout and Retention Rates by Gender

More detailed data on dropout rates (calculated from DISE data) are available for boys and girls at both primary and primary plus upper primary level and are shown in Table 3.8. The dropout rate trends have been plotted in Figures 3.14 and 3.15 for these level.

A common trend across all years is that girls have higher drop-out rates than boys. This trend is more pronounced in upper primary classes. At the primary level, the highest dropout rate was seen in 2009-10 at 3.13% for boys whereas for girls it was 3.95%. For primary and upper primary classes the dropout rates were 5.58% and 6.47% in 2011-12. A steep fall in dropout rates for both boys and girls, at both primary and upper primary levels in 2013-14 and rise in 2014-15 (especially in P+UP category) needs further investigation.

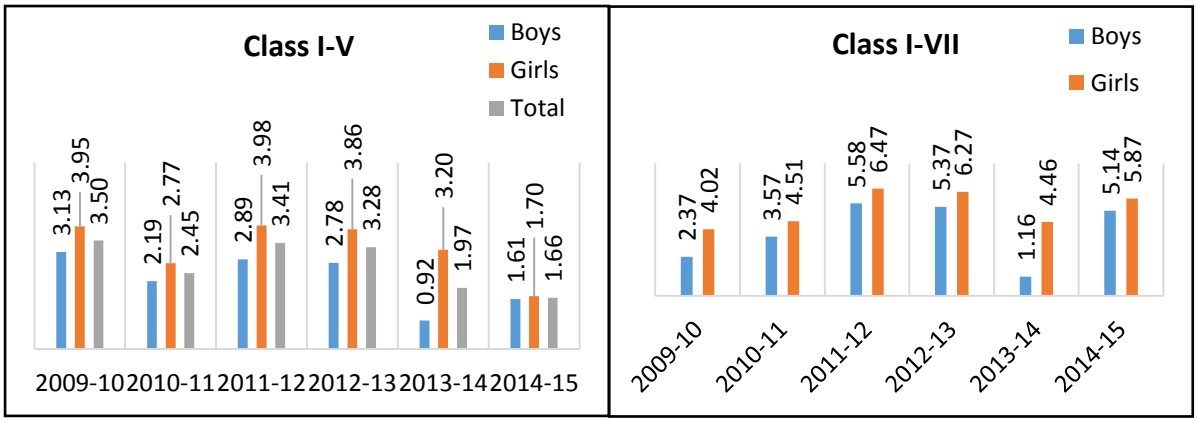
Retention rate have been more or less stable over the years 2009-2014, varying between 96% and 98% for both boys and girls at the primary level. At P+UP level, retention rate varied from 94.5% to 96.5% during this period. Girls retention rates are marginally lower than the boys, especially at P+UP level.

Table 3.8: Dropout and Retention rate of children

	Dropout rate						Retention Rate					
	Primary (Std. I to V)			Primary and upper primary (Std. I to VII)			Primary (Std. I to V)			Primary and upper primary (Std. I to VII)		
Year	B	G	T	B	G	T	B	G	T	B	G	T
2009-10	3.13	3.95	3.50	2.37	4.02	3.49	96.87	96.05	96.50	97.63	95.98	96.51
2010-11	2.19	2.77	2.45	3.57	4.51	3.99	97.81	97.24	97.55	96.43	95.49	96.01
2011-12	2.89	3.98	3.41	5.58	6.47	6.03	97.11	96.02	96.59	94.42	93.53	93.97
2012-13	2.78	3.86	3.28	5.37	6.27	5.80	97.22	96.14	96.72	94.63	93.73	94.20
2013-14	0.92	3.20	1.97	1.16	4.46	2.66	99.08	96.80	98.03	98.84	95.54	97.34
2014-15	1.61	1.70	1.66	5.14	5.87	5.51	98.39	98.30	98.35	94.86	94.13	94.50

Source: *Gujarat Council of Elementary Education (SSA), Gandhinagar*

Figure 3.12: Dropout Rates – Class I-V & Class I-VII



Source: Gujarat Council of Elementary Education (SSA), Gandhinagar

3.5 Status of Teachers

Teachers form the core of the educational system delivery. Appointment of teachers and their transfer are the regular exercise of the education departments. These appointments can be regular or contractual. The number of teachers working in different school categories from 2009 to 2013 is shown in Table 3.9. In Figure 3.16, number of teachers in government schools under different categories is shown. There has been a general dip in the total number of teachers appointed in government schools. The biggest decrease is in schools which have both primary and upper primary grades, with many of them having shifted to only upper primary schools.

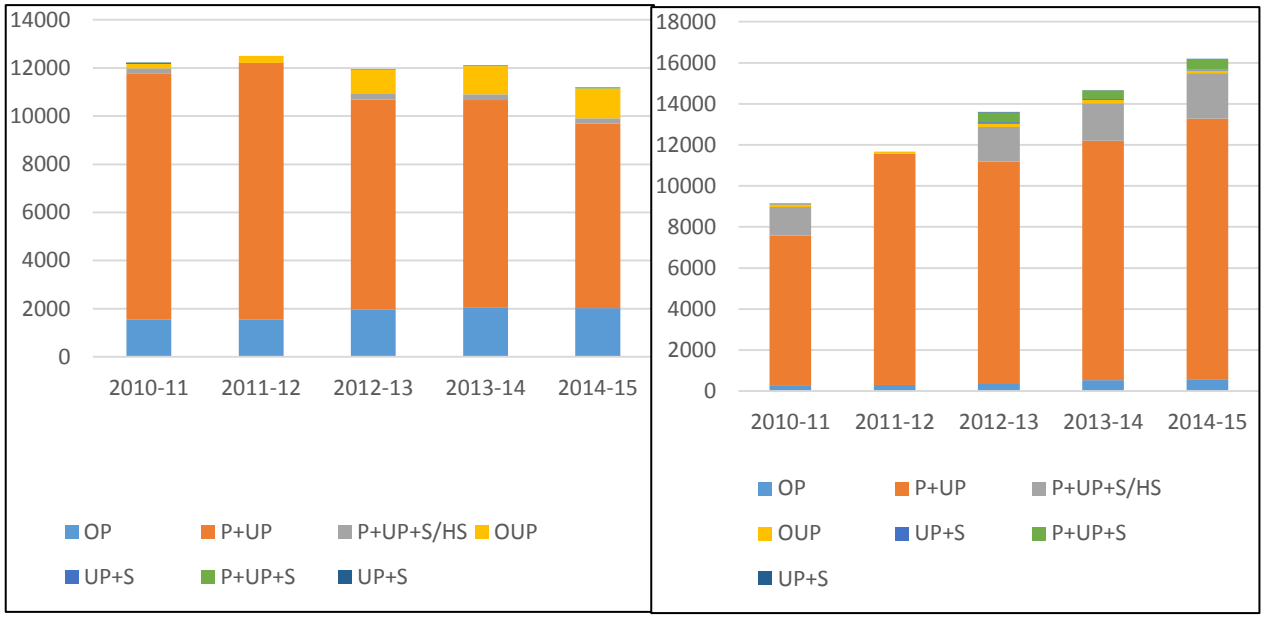
Table 3.9: Number of Teachers in schools

	Government						Private					
School Category	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**
OUP	2429	1557	1562	1969	2042	2025	286	258	304	347	533	579
P+UP	11135	10198	10649	8706	8629	7663	8114	7324	11269	10848	11665	12707
P+UP+SS+HS	252	228		247	231	221	1435	1399		1686	1830	2202
OUP	286	202	287	1007	1168	1235	101	125	105	152	152	135
UP+SS+HS	27	29					39	29		79	51	44
P+UP+SS	5	5		12	26	39				461	423	510
UP+SS	26	14		4	4	5		8		38	19	20
Total	14160	12233	12498	11945	12100	11188	9975	9143	11678	13611	14673	16197

Source: Gujarat Council of Elementary Education (SSA), Gandhinagar

The situation is different in private schools (Figure 3.17), where the total number of teachers has increased commensurate with the increase in the number of private schools. From 2009 to 2014, private schools rose from 9,975 to 16,197, an increase of 62.4%. The largest increase is in number of schools which have both primary and upper primary classes. A drop in the size of P+UP+S/HS school category in 2011-12 is possibly due to misclassification or missing data. In 2013-14, even this category had more teachers than in 2009-10. With increasing demand for private schools even from poor families in Ahmedabad, it is possible that many qualified and semi qualified teachers have filled the private schools.

Figure: 3.13: Number of Teachers in Government & Primary School



Source: Gujarat Council of Elementary Education (SSA), Gandhinagar and NUEPA

The Ahmedabad district education officials (Deputy Administrative officer and District Educational Officer), cited the reasons for declining number of teachers in government schools:

- Number of government schools are decreasing in the last six years. Many schools are being shut down due to lack of students.
- Teacher post have not been filled up for long time. Many government school headmasters are not serious about pushing the authorities for filling vacant posts in their schools.
- There is scarcity of mathematics and science teachers. Most of the RMSA schools don't have single mathematics or science teacher.

- Existing teachers are often reshuffled to take alternative classes. An English teacher may be asked to take up mathematics or history.

The pupil to teacher ratio (PTR) in primary schools is mandated to be less than 30:1 and in upper primary 35:1. Table 3.10 shows DISE data on pupil teacher ratio in all schools under different categories. From 2010 onwards, proportions of schools with PTR greater than 30 (primary) and PTR>35 (upper primary) are also tabulated. In 2010, more than 60% of schools had primary PTR>30. There was a decline of 6 percentage points the next year, but it again rose to 59.5% in 2012. From then on there was a drastic decline in the share of schools with PTR>30, to 27.1%. This is possibly due to a strict RTE rule which mandates that schools can be shut down if they don't maintain the PTR norms specified in the act. The situation is similar in the upper primary category. In 2010, 42.7% of schools had PTR>35 in upper primary classes. After declining next year, it again rose back in 2012. In 2013, there was sudden decline to 8.4%. Government schools generally tend to maintain the mandated PTR through regular appointments. Private schools, especially low cost ones, generally reduce the number of teachers to cut down costs. After RTE norms were strictly enforced, private schools were forced to recruit more teachers in 2012-13.

Table 3.10: Pupil Teacher Ratio

Year	P	P+UP	P+S/HS	OUP	UP+S	Primary PTR>30	Upper Primary PTR>35
2008-09	31	34	35	32	36	NA	NA
2009-10	27	33	32	26	33	NA	NA
2010-11	40	36	39	36	41	61	42.7
2011-12	39	34	NA	36	NA	54.3	36.2
2012-13	37	37	35	37	**31***	59.47	43.43
2013-14	35	37	38	35	**34***	27.05	8.41

***Taken P+UP+S** *Source: DISE reports*

3.5.1 Qualification of Teachers

Quality of teachers is key to an effective educational system. Quality of a teacher depends on multiple factors like knowledge of subject, motivation, understanding of children's psychology and behavior, and experience. Persons recruited as teachers should have the necessary aptitude and ability to meet the challenges of teaching in elementary schools. Educational and professional qualification acts as a proxy for gauging the ability of teachers.

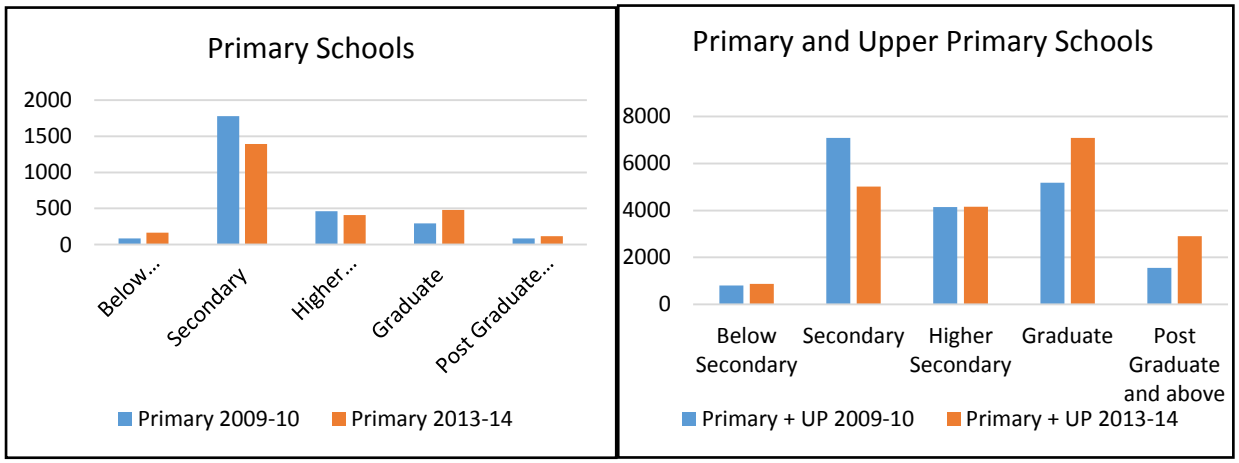
Qualifications of teachers in primary and upper primary for years 2009-10 and 2013-14 are shown in Table 3.11. The plot of the same for primary schools is shown in Figure 3.18. In 2013, the majority (54.3%) of teachers in primary schools have only secondary school qualification. However, the number of teachers with secondary and higher secondary has decreased, whereas the number of teachers with graduate and postgraduate degrees has increased in the last five years. The number of teachers with a graduate degree saw a sharp rise (63%) from 295 to 482 between 2009 and 2013. The same trend was seen in schools with primary and upper primary classes (See Figure 3.19). There were over 7000 Teachers with only secondary education in 2009, but it decreased to about 5000 in 2013. Whereas teachers with a graduate degree have risen by 37% and those with post graduate degree by a large margin 86% between 2009 and 2013. Teachers with a graduate or post graduate degree constituted 49.9% of the total teachers in primary plus upper primary category schools in 2013. RTE Act now mandates certain minimum qualifications for teachers in primary and upper primary schools and requires passing of the Teacher Eligibility Test (TET) set by state governments (see Box 3.2 for Gujarat TET criteria advertised in 2015).

Table 3.11: Showing Qualification of Teachers

Level of education	Primary		Primary + UP	
	2009-10	2013-14	2009-10	2013-14
Below Secondary	85	164	811	880
Secondary	1,775	1,393	7,092	5,009
Higher Secondary	463	411	4,146	4,160
Graduate	295	482	5,176	7,086
Post Graduate and above	88	115	1,564	2,911

Source: *DISE District Report Cards*

Figure 3.14: Qualification of Teachers in Primary and Upper Primary Schools



3.6 Quality of Education

Ensuring universal enrollment, checking dropouts, providing school amenities and improving teachers' qualifications— are all essential parts of a good educational system. Ahmedabad, like the rest of India, has made substantial progress on these fronts in the last decade. But education cannot be complete without achieving its primary aim— learning. Poor learning has many long term consequences such as lower completion rate, lower skills levels upon entry into labour force, and lesser support for the second generation. Many governmental and private assessments of learning outcomes have consistently reported very low learning levels in primary and upper primary school children.

Historically, the focus of educational departments was mainly on increasing access. However, rapid expansion of mass education systems severely challenges the quality of education provided and in many instances adversely affects learning outcomes (Oza & Bethell, 2014). The magnitude and scale of the problem of poor learning levels in India came to be widely recognized after the nationwide survey by the Non-Governmental Organization (NGO) Pratham, called the Annual Status of Education Report (ASER) in 2005 (Pratham, 2005-14). Since then, ASER reports are being published every year, measuring the basic learning outcomes such as reading and arithmetic among children (6 to 14 years) in rural areas across all districts in India. Apart from these, National Council of Education Research and Training (NCERT) conducts National Achievement Survey (NAS) every four years, and Student Learning Study conducted across 18 states by Educational Initiatives and Google (EI and Google, 2010)

The Government of Gujarat started the Gunotsav programme in 2009 to assess the quality of government schools based on students' scores on curricular and co-curricular activities.

In part due to these initiatives, there is widespread recognition of the importance of sound assessment of learning outcomes for robust monitoring and evaluation of the education system (Oza & Bethell, 2014). The 12th Five year Plan has also laid strong emphasis on learning outcomes- where it states "(*Government*) *will place greatest emphasis on learning outcomes at all levels…. Improve learning outcomes that are measured, monitored and reported independently at all levels of school education with a special focus on ensuring that all children master basic reading and numeracy skills by Class 2 and skills of critical thinking, expression and problem solving by Class 5*" (Planning Commission (GoI), 2013).

ASER : ASER surveys are conducted by NGO Pratham along with a large network of NGOs, educational institutes, government and private agencies throughout India. Pratham believes that three R's (Reading, Writing and Arithmetic) are essential skills that every child should acquire in elementary school. The ASER survey tests the basic and arithmetic abilities of children in *rural India* and publishes national and state level reports along with district level estimates.

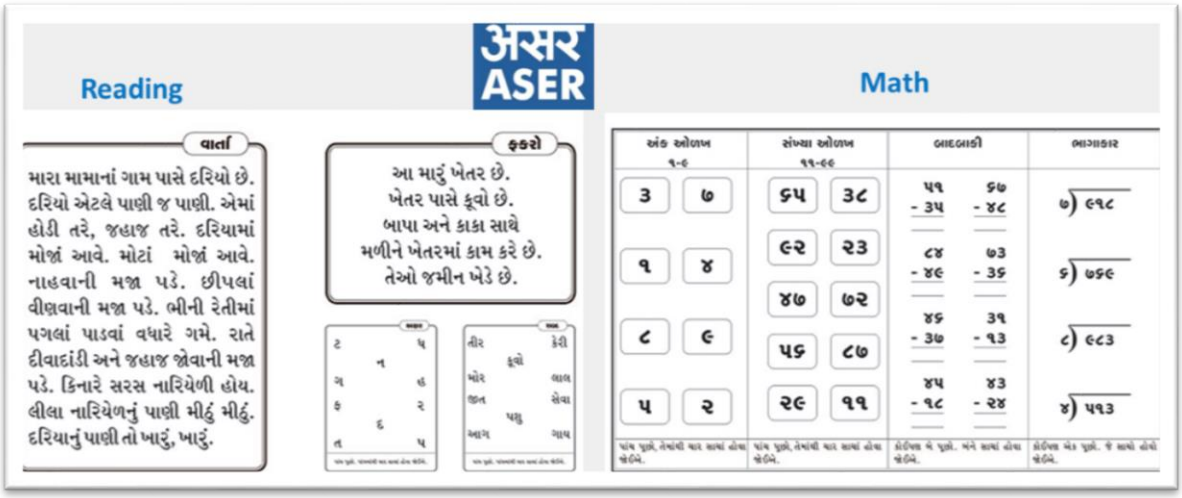


Table 3.12 Learning levels of children in Ahmedabad District (Rural)- ASER Survey

	READING		Numbers and Arithmetic		Private School Enrollment	Out of School children
	%Std I-II	%Std III-V	%Std I-II	%Std III-V	6- 14 year Children	
Year	Can Read letters or more	Can Read Std 1 Text or more	Can recognize numbers 1 to 9 or more	Can do subtraction or more	In private school	Out of school
2006	57.3	34.9	51.3	34.4	6.6	7.4
2007	75.3	63.3	28.1	49.7	10.2	4.6
2008	58.3	51.5	65.8	40.1	5.1	4.1
2009	88.1	63.3	85.3	59.0	4.4	6.0
2010	69.9	55.3	70.2	40.7	5.3	9.5
2011	74.4	64.5	79.7	37.6	19.0	3.4
2012	67.4	56.7	70.1	30.2	7.5	3.7
2013	59.0	56.7	65.5	21.8	15.9	4.8
2014	56.5	55.0	60.9	20.5	14.9	4.5

Source: *ASER District Data Sheets*

Figure 3.15: ASER: Ahmedabad (Rural) Reading Level

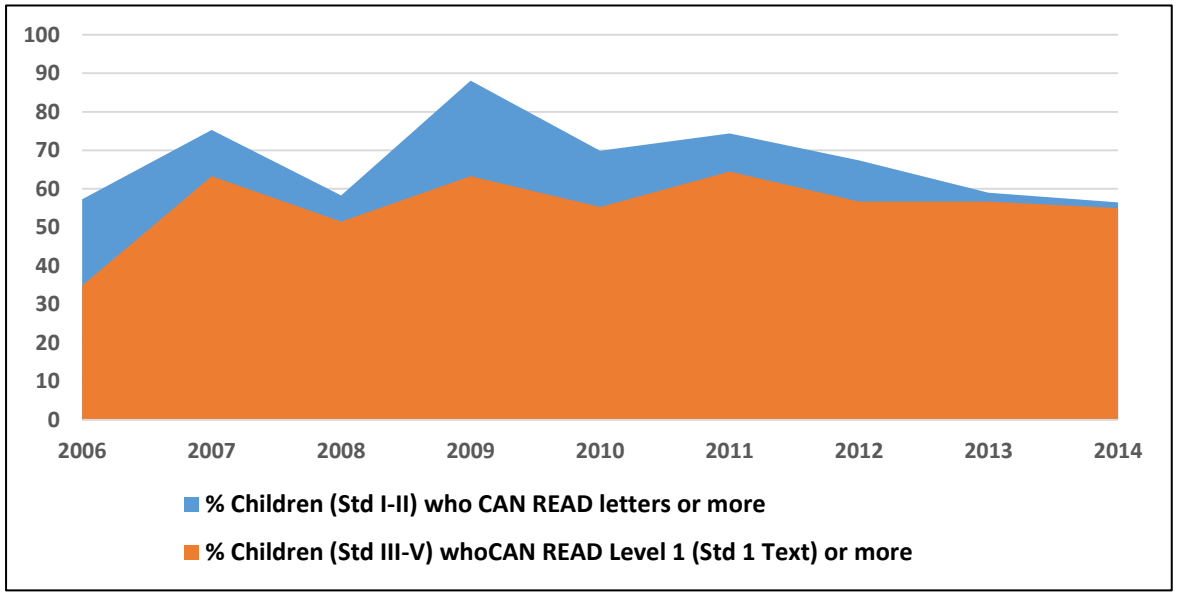
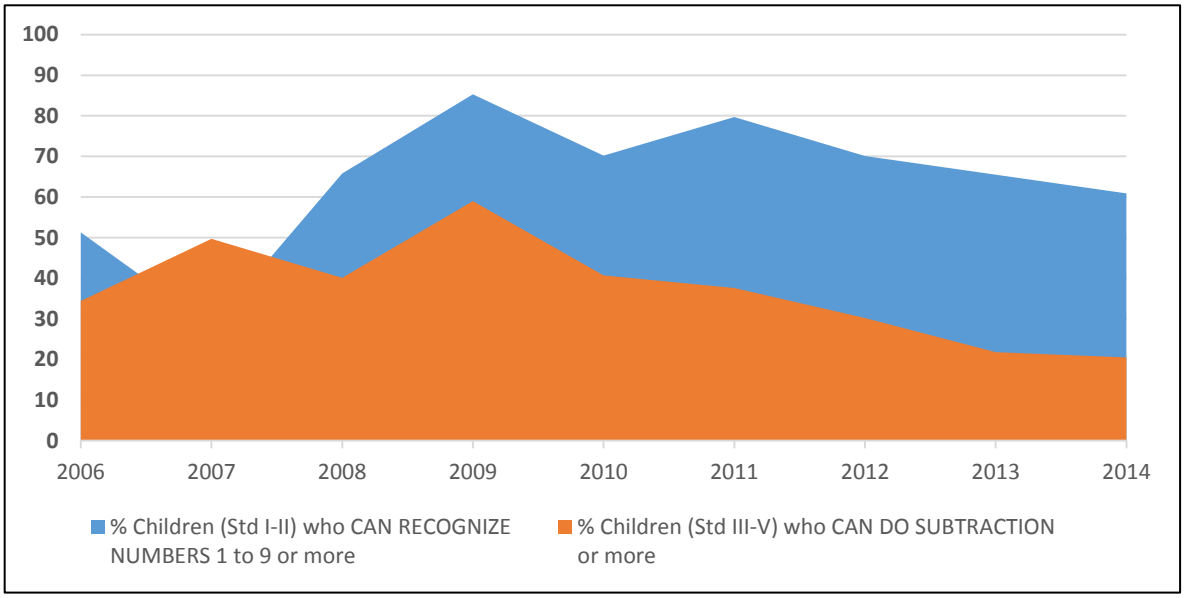


Table 3.12 shows learning level of children in rural areas of Ahmedabad district, categorized according to tests of learning outcomes such as reading letters and numbers for standard I and II kids ; reading of level 1 text and subtraction of simple numbers for standard III-V kids.

The table also gives the percentage of children out of school and, the proportion of those in private schools. Reading and arithmetic test are conducted in Gujarati.

Figure 3.16: ASER: Ahmedabad (Rural) Arithmetic



Source: ASER District Data Sheets

In Figure 3.14 reading levels from ASER are plotted in an area diagram to clearly illustrate the magnitude and flow. While no clear trend can be found in the initial years 2006-2011, later from 2011-2014 we see a clear decreasing trend in reading abilities level both for class I-II and III-V students. In 2014, 43.5% of kids in Class I-II could ***not*** read letters, and 45% of kids in class III-V could not read standard I text or more.

In Figure 3.15 the numeric and arithmetic abilities of class I-V children are plotted. No clear trend emerges between 2006 and 2009. However, the proportion of class III-V kids who can do subtraction is continually decreasing from 2009 to 2014. In fact, only 20.5% of them could

do subtraction in 2014. Number recognition by Class I-II students is also decreasing from 2011 onwards. Such systematic trends of declining learning levels are evidence of a crisis in primary education and call for an in-depth investigation. Similar trends have been observed at the state and national levels, especially with arithmetic ability (see Figures 3.16 and 3.17).

It is quite likely that changes in government policies led to a huge influx of first generation learners in the last decade and this forced a trade off between access and attainment. Lack of strong parental educational background and the poor capacity of the educational system to effectively absorb students from diverse backgrounds may have contributed to the decline. The RTE clause which forbids holding back students in any class till the completion of elementary education might have created incentives to promote transition of students to higher grades without ensuring adequate learning at lower levels.

Figure 3.17: Percentage of Children in Std V who can read a Std II level text 2006-2014

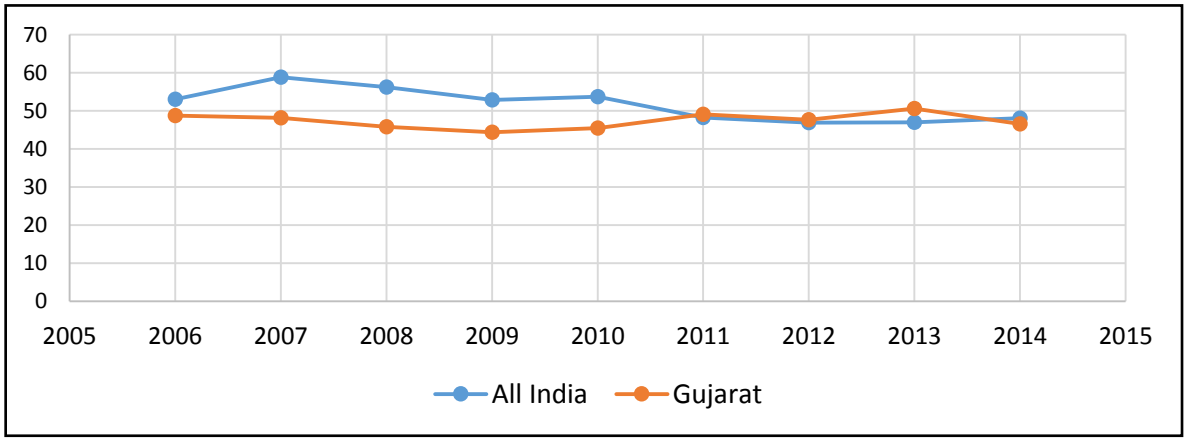
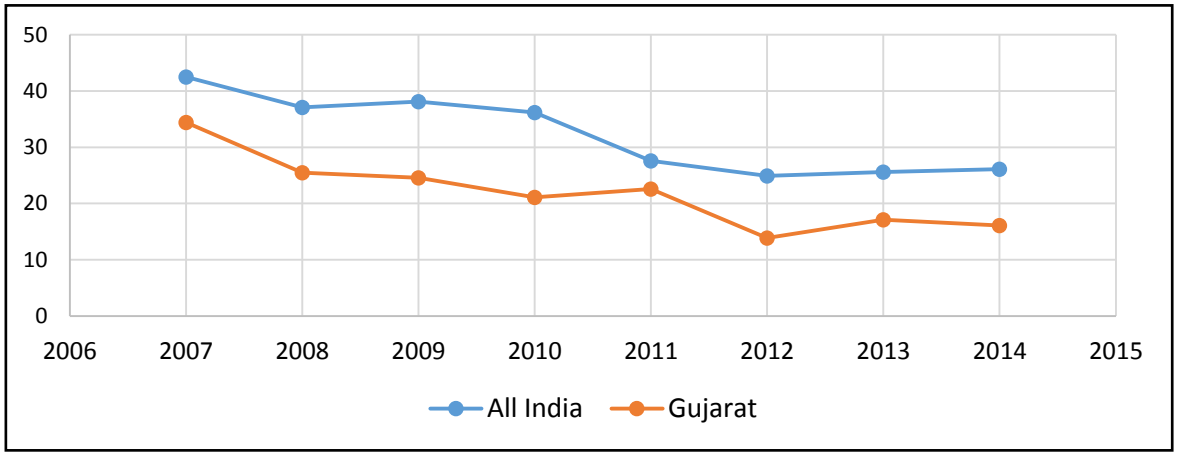


Figure 3.18: Percentage of Children in Std V who can do division. 2007-2014



Source: ASER District Data Sheets

Gunotsav: Gujarat government initiated the Gunotsav (meaning 'Celebrating Quality') programme in 2009 to evaluate the primary education scenario and grade school teachers. The programme aimed to bring awareness among teachers and the public about quality of education. It provides an accountability framework for analyzing the quality of primary education which includes learning outcomes of children as well as co-scholastic activities, use of resources and community participation (Department of Education, GoG, 2015). The aim is to ensure that Gujarat will be among the top three states of the country in terms of student learning outcomes over the next 5 years.

Guntosav is carried out in two phases. In the first phase, all schools conduct self-assessment based on the evaluation papers and parameters set by the Department of Education. In the second phase 25% of schools (about 9000 schools), randomly selected, are visited by government officials to reassess them and check for any discrepancies. From 2010 onwards all students from class 2-8 are tested based on papers set by DIET and GCERT and a few advanced tests by a private assessment company -Educational Initiatives. Assessment looks at scholastic (reading, writing, maths, science etc.) and co-scholastic activities (sports, cultural activities, etc.), utilization of infrastructure (for instance, buildings library, toilet) and community participation (for e.g. SMCs and Mid Day meals (Department of Education, GoG, 2015). This composite measure captures multiple dimensions of functioning of School system. Table 3.13 shows the performance of Ahmedabad district in Guntosav for the years 2009-2014. Assessment tools and grading schemes from 2011-14 are different from 2009 and 2010, hence findings for 2009 and 2010 cannot be directly compared with those from later years. Results for Gunotsav 2012 were not available for comparison.

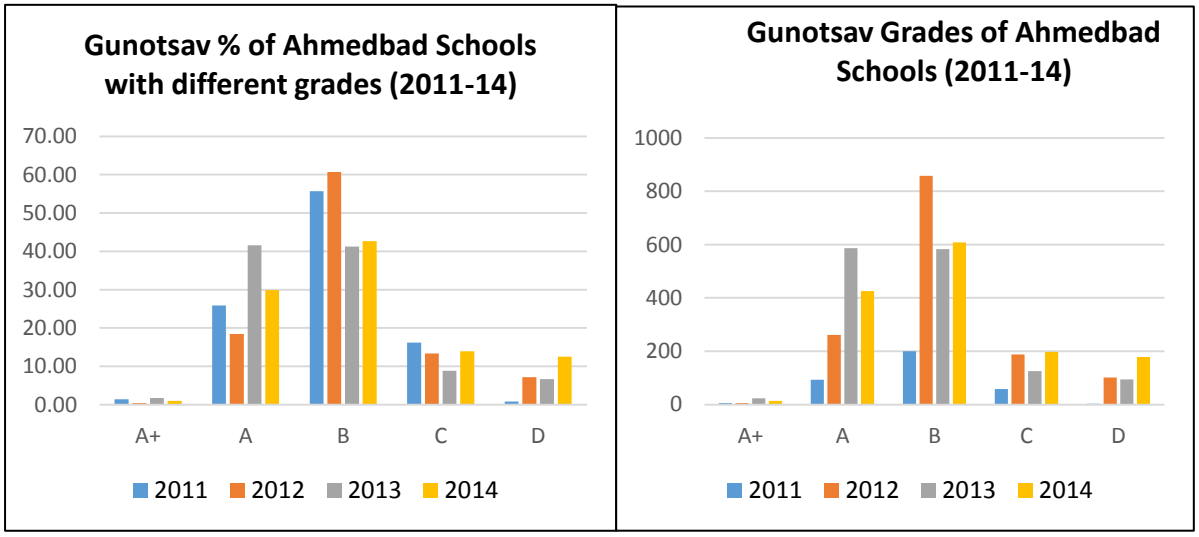
Table 3.13 Gunotsav : Grade of schools

		Number of schools						% of Schools		
Grades	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**		**2011**	**2013**	**2014**
A+	NA	NA	5	5	24	14		1.39	1.70	0.98
A	0	2	93	261	587	426		25.91	41.54	29.92
B	3	16	200	858	583	608		55.71	41.26	42.70
C	154	511	58	188	125	198		16.16	8.85	13.90
D	926	1045	3	101	94	178		0.84	6.65	12.50
E	192	62								
F	32	10								

Source: Gunotsav Portal

Analysis of 2011-14 Gunotsav data (Figure 3.18) for Ahmedabad does not paint a rosy picture. Schools securing A and A+ grades have fallen both in numbers and percentage between 2013 and 2014. Many of the schools have fallen to B, C and D grades. The district education officials do not think that situation has become worse. According to them, the number of E and F grades schools have been brought to zero from 2011 onwards, and number of A and A+ schools are decreasing, which is an indicator of the progress in the average performing category. The criteria for evaluation such as weightage given infrastructure, teaching, student performance, and type and difficulty of student questions have changed over time, making it difficult to compare across time. They also opined that Gunotsav should be conducted for private schools, which will give a fair comparison of the performance of government and private schools.

Figure: 3.19: Performance of Gunatsav



This issue of falling quality, supported by government's own assessment data, needs to be addressed with priority. Improving learning outcomes on a large scale requires the intervention to be simple, effective, and proven to work even when scaled up. Many educationalists and NGOs in India have been working on educational reforms at various scales and capacities (see readings from (Azim Premji Foundation, 2015)). A few of the initiatives are exclusively focused on improving learning level such as the Learning Guarantee Program of the Azim Premji foundation (Azim Premji Foundation, LGP, 2008) , the Read India program of Pratham (Pratham, 2015) and Teaching at the Right Level (TaRL) by Pratham-JPAL (Banerjee, 2012). Some of these can be adopted by government schools on large scale such as TaRL,

which has been tested effectively through several randomized controlled trials and scaled up in several schools across India (A brief description of TaRL is shown in Box 3.3).

(Prime Minster Narendra Modi, visiting schools for Gunotsav as CM of Gujarat in 2010 , http://www.narendramodi.in/gunotsav-infusing-life-into-education)

3.7 Physical Amenities in Schools

RTE mandates certain minimal infrastructural needs (building, toilets, playground etc.) without which a school would be derecognized and shutdown. School amenities have been given a strong push in Gujarat during the last decade. Taluka wise details on availability of electricity, computer lab, compound wall and play ground in 2013-14 are given in Table 3.14. Almost 100% of the schools in Ahmedabad have electricity and a compound wall. The *availability* of computer laboratories varies a lot across the talukas. Detroj-Rampura has the lowest percentage (47.22%) of schools with a computer lab whereas Dhandhuka has the highest fraction at 83.33% . Ahmedabad district as a whole has 55.34% of schools with a computer lab, largely a reflection of Ahmedabad city (58.15%). Playground facilities also vary considerably. Bavla has the lowest at 74.39% and Detroj-Rampura has the highest at 93.06% of schools with playground.

Toilet facilities have improved and became universal feature in all schools. In Table 3.15 we see the percentage of schools with a separate girl's toilet in different categories of schools. In 2008, 82% of the primary only schools had a separate girl's toilet, whereas 95% and above schools teaching at secondary level had separate girl's toilets. By 2013, every school had toilets, complying with the norm of RTE.

Table 3.14: Taluka wise % of physical amenities available at primary schools, 2013-14

Talukas	Total No. of Schools	Electricity	Computer Lab	Compound Wall	Play Ground
BARVALA	46	100.00	78.26	100.00	84.78
BAVLA	82	100.00	52.44	100.00	74.39
AHMEDABAD CITY	356	99.44	58.15	99.44	84.27
DASKROI	399	100.00	61.90	100.00	82.71
DETROJ-RAMPURA	72	100.00	47.22	100.00	93.06
DHANDHUKA	108	100.00	83.33	100.00	82.41
DHOLKA	148	100.00	62.84	100.00	83.78
MANDAL	57	100.00	78.75	100.00	77.19
RANPUR	48	100.00	75.00	100.00	79.17
SANAND	142	100.00	69.01	100.00	88.03
VIRAMGAM	123	98.37	65.85	98.37	85.37
AHMEDABAD		99.86	55.34	99.86	90.85
GUJARAT	43176	93.63	55.18	93.76	75.68

Source: District Primary Education Office

Financial incentives are given to schools for building toilets. In Ahmedabad (Urban) areas, Rs 50,000 were given to each school for building toilets, and Rs 1,00,000 is provided to each school for getting learning aids and developmental skills such as of books, calculator, uniform and for hiring yoga and karate instructors (District Education Officer, Ahmedabad -Urban).

BoX 3.2: Ensuring the Basics: Teaching at Right Level

The TaRL programme by Pratham-JPAL focuses on improving basic reading, writing and arithmetic skills, through learnings with students grouped according to their learning levels, rather than the class they are studying. Thus a student in Vth grade can be sitting with a second grade student. Grouping according to student's learning level helps in giving focused support to a more homogenous group and tracking their progress. Several RCTs on TaRL have shown substantial gains in learning at a relatively short time, and has been implemented in several states including about 310 schools in Dehgam-Gandhinagar and Vijaynagar-Sabarkantha talukas in Gujarat.

Typical TaRL process may follow as below :

- Assessment tool tests to categorise students into learning level groups for maths and for state language Gujarati.
- Learning activities and resources to move students up to the next learning level (2hrs daily, in school hours).
- Mid-way assessments to move students up to higher-level groups.
- In-classroom mentoring and regular refresher training.
- Monitoring with spot-checks and formats, followed by feedback for improvement.

Table 3.15 : Schools with separate girl's toilets

Year	OUP	P+UP	P+S/HS	OUP	UP+Sec
2008-09	82.4	90.2	95	94.9	95.2
2009-10	91.2	93	97.3	95.1	100
2010-11	94.2	96.5	97.5	90.9	91.7
2011-12#	95.10	96.80	98.79	93.5	95.10
2012-13	95.9	97	99.2	98.7	100
2013-14	100	100	100	100	100

#From DEO Ahmedabad City/Rural *Source: DISE reports*

3.8 Higher Education in Ahmedabad

We have already discussed the prominent role of Ahmedabad colleges, Institutes and Universities in the higher education of Gujarat. However, a close look reveals that higher education is primarily urban centric and dominated by Ahmedabad city. Table 3.16 provides a summary of (government) higher education and technical colleges in Ahmedabad. We observe that almost all the higher education colleges are in the main city. Girls enrollment is lower than boys and their enrollment ratio of 0.76. Technical institutes Ahmedabad city has highest number (35) , followed by Daskroi (8), Viramgam (3), Sanand (1) and Ranpur (1).

Table 3.16: Higher education and technical Institutes in Ahmedabad, 2013-2014

		Higher Education Colleges				Other Technical Institutes			
Sr. No.	**Taluka**	**No**	**Students**		**Teachers**	**No**	**Students**		**Teachers**
			Boys	**Girls**			**Boys**	**Girls**	
1	Ahmedabad city	14*	32246	24494	1370	35	14905	3963	805
2	Mandal	0	0	0	0	0	0	0	0
3	Detroj	0	0	0	0	0	0	0	0
4	Viramgam	0	0	0	0	3	30	0	17
5	Sanand	0	0	0	0	1	41*	49*	14
6	Daskroi	0	0	0	0	8	8425	2023	555
7	Dholka	NA	802	495	15	0	0	0	0
8	Bavla	0	0	0	0	0	0	0	0
9	Ranpur	0	0	0	0	1	1103	21	51
10	Barvala	0	0	0	0	0	0	0	0
11	Dhandhuka	0	0	0	0	0	0	0	0
	Total	**14**	**33048**	**24989**	**1385**	**48**	**24504**	**6056**	**1442**

*2012-13 Data *Source: District Statistical Outline- Ahmedabad 2012-13,13-14*

Again proximity to city plays a dominant role. Gender ratio is highly skewed as only 20% of the enrolled students in technical colleges are women. Priority should be given to address these regional disparity and gender gap in higher education in Ahmedabad talukas.

3.9 Education Policies

The first major initiative in education came with the setting up of *The Education Commission* - popularly called the Kothari Commission- in 1964. Its purpose was to advise the Indian government on the national pattern of education and on the general principles and policies for the development of education at all stages (Kothari, 1966). The Commission called for standardization of education across the country and educational reconstruction in all stages and sectors of education. It proposed recommendations regarding improvements in curriculum, teaching methods, broadening educational opportunity, universalizing primary education and evolving common school system. Based on this report, resolutions on free and compulsory primary education up to age 14, teacher education, equalization of educational opportunity, science education and research, and vocational education was taken up by the Indian parliament in 1966 (Government of India, 1966) . However, these resolutions did not lead to any major policy changes until twenty years later when the National Policy on Education was formulated (NPE 1986, and revised in 1992). NPE called for a national system of education with a common educational structure and kick started several educational reforms in India (Minsitry of Human Resource Development, GoI, 1986, 1992) such as: setting up of the National Literacy Mission for Total Literacy Campaign, endorsing the concept of Universal Elementary Education (UEE), and the establishment of residential Jawahar Navodaya Schools for rural children in all districts.

3.9.1 SSA

In 2001, Sarva Shiksha Abhiyan (SSA) was started with the objective of achieving UEE by 2010. SSA gave additional funds to state schools and a clear mandate to achieving UEE (Ministry of Human Resource Development, GoI, 2001). Support from SSA and the universalization of the mid-day meal (in 2004) led to a huge surge in enrollment in primary schools across India, including Gujarat.

All the policies described so far were in line with the directive principles of state policy on education. In 1993, the Supreme Court declared that “Education is a fundamental right that

follows from the Right to Life in Article 21 of the Constitution." This ruling made the "Right to Education" justiciable. A decade later, in 2002, the 86th constitutional amendment added Article 21A to the Constitution. This states that "The State *shall* provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine." Seven years later, the right to education was put in letter and spirit with the passing of "The Right of Children to Free and Compulsory Education Act, 2009" (Minsitry of Human Resource Development, GoI) popularly called RTE Act (See Box 3.3). The RTE, hailed by some as a game changer in elementary education, has its fair share of praise as well as criticism. While the country is close to achieving universal enrollment, and seeing substantial reduction in dropout rates and an improvement in school infrastructure, there has been a significant drop in learning levels. There have been many challenges in the implementation of a "one size fits all' policy of 25% reservation in private schools. In many private schools, this policy has led to segregation of students according to socio-economic backgrounds rather than integration towards achieving a common school system.

Apart from these, many programmes, both by central and state governments, have been launched since 2002 to address the problems of access, equity and quality in elementary and secondary education. A few examples are described below.

Box 3.3. Salient Features of RTE Act 2009

- Every child of the age of six to fourteen years, shall have a right to free and compulsory education in a neighborhood school till the completion of his or her elementary education.
- Appropriate government shall ensure availability of a neighbourhood school for every child
- No child admitted in a school shall be held back in any class or expelled from school till the completion of elementary education.
- No child shall be liable to pay any kind of fee or charges or expenses which may prevent him or her from pursuing and completing the elementary education.
- School shall conform to the minimal infrastructure , pupil teacher ratio specified in the Act
- All schools shall admit in class I, to the extent of at least twenty-five per cent of the strength of that class, children belonging to weaker section and disadvantaged group in the neighbourhood and provide free and compulsory education till its completion.

3.9.2 Kanya Kelavani Nidhi : Bridging the Gender Gap

The Government of Gujarat (GoG) focused especially on the enrollment and retention of girls. The *Kanya Kelavani* scheme was started in 2003 to bridge the gender gap in primary education and prevent girls from dropping out (see Box 3. 4). A special *Kanya Kelavani Nidhi* (fund) has been allocated for this campaign based scheme. Through *Kanya Kelavani* several model schools were started in Ahmedabad rural district, in Rajoda (Bavla), Sanand (Sanand), Bhojva (Viramgam) and Ranpur (Ranpur). Free hostels have also been set up at Rajoda, Sanand and Bhojva for girls so that they have to commute long distance daily.

Box 3.4: Bridging the Gender Gap: *Kanya Kelavani*

Kanya Kelavani a campaign based model, where Team Gujarat comprising of minsters, parliamentarians, bureaucrats at all levels are involved in bringing awareness about importance of sending girl child to school. A special fund *Kanya Kelavani Nidhi* (KKN) has been created to provide financial support to those girl-students who interested in pursuing education. Prime Minsister Narendra Modi auctions off the various gifts he had received and donates it to the *Kanya Kelavani Nidhi* fund. Many individuals and organizations also contribute to KKN (Admin, Narendramodi.in, 2012). This is considered one of the factors for reducing dropout rate of girls from 20% in 2001 to 2% in 2011.

GoG has introduced a financial incentive scheme for the education of the girl child called *Vidyalakshmi Bond.* It covers villages having a women literacy ratio of less than 35% and aims to ensure that girls continue education at least till standard VII. Under this scheme girls enrolling in standard I are given a Vidyalakshmi Bond worth Rs. 1000-2000. The bond is redeemable when the girl completes VIII grade. Until now over seven lakh girls in Gujarat have received Vidyalakshmi bonds grossing Rs. 70 crores (Department of Education, GoG). In Ahmedabad (Urban) district, Rs 10.56 lakhs were distributed between 528 beneficiaries under this scheme in 2014-15.

3.9.3 Getting the Basics Right

Annual ASER surveys and National Achievement surveys of NCERT have revealed alarmingly poor reading, writing and arithmetic abilities of children. For a large majority of children in India, primary schools are the first to introduce reading and writing to children. This prompted the government to start the *Padhe Bharat Badhe Bharat* (PB) scheme in 2014 (MHRD, GoI, 2014). PB has two key tracks: Early Reading and Writing with Comprehension, and Early Mathematics (Details of PB scheme are highlighted in Box3.5). Unfortunately PB initiative focuses on only classes I and II. The rationale given is that children who fail to learn to read in the first two grades of school are likely to fall behind and have difficulty in learning other subjects as well, and that poor readers cannot develop proper writing skills and are vulnerable to drop out of the education system (MHRD, GoI, 2014). However, the problem of poor learning levels is prevalent through all grades in elementary school. Over 50% of class V students could not read class II level text (ASER center, 2014)! Many such children will enter higher classes with minimal learning. This could be a huge bottleneck for secondary education.

3.9.4 Pragna Classrooms: Activity Based Learning

Government of Gujarat started took cognizance of some of the existing problems of current schooling such as: teaching same materials to students at multiple learning levels, multi-grade classrooms, pervasive rote learning, and poor learning levels and started *Pragna Varg* in 2010-11 (SSA-Gujarat, 2014). Pragna aims to correct and overcome these difficulties and to open the classroom to a more holistic and learner based way of working with children. Pragna has unique approach to providing child friendly classrooms, group formation according to stages of learning, creating subject specific classrooms rather than grade specific ones, and designing child friendly, and activity based classrooms. In 2012-13, about 3748 schools have Pragna classrooms and there is a plan to scale it up further. Due to these initiatives, performance of children in Pragna classes have increased. According to some teachers, students with lower learning level like Prgana very much and show greater interest and involvement in learning. Whereas students who area already performing better find it to be little boring. They also felt that Pragna makes it difficult to teach regular curriculum.

Pragna Approach :

3.9.5 Smart Schools

In order to integrate ICT in school education Government of Gujarat started a smart school in Chharodi village, near Nirma University, Ahmedabad. In this school, regular curriculum is taught with the aid of digital tools like presentation slides, educational videos, virtual demonstrations etc. They are equipped with good computers, LED Tvs, projectors, internet facility, and an excellent library. School also has taken many green initiatives like rain water harvesting, electricity generation through solar power, and planting and maintenance of several trees in the campus. Smart school teachers are well trained in ICT usage by SSA officials, and are provided with laptop. The headmistress and teachers were enthusiastic about changes that were brought with the smart school. Students find the digital method very attractive and show keen attention to video materials even when the teachers are away on other duties. Parents show greater enthusiasm to participate in school events, and take active role in SMCs. Around two hundred students are currently enrolled in Chharodi smart school. This year, the school saw more than 20 students migrate from private school. The image of public school has changed under this initiative.

3.9.6 Towards Universal Secondary Education

With gross enrollment ratio approaching near 100%, India is very close to achieving universal access to elementary education. The focus has now shifted to ensuring universal secondary education (USE). The *Rashtriya Madhyamik Shiksha Abhyan* (RMSA) was started by GoI in 2009 with an objective to universalize secondary education by enhancing access and to improve quality of education at the secondary stage, all while ensuring equity (Ministry of Human Resource Development, GoI, 2015). Some of the key targets of RMSA are (Commissionerate of Schools, GoG, 2014):

- **Neighborhood Secondary School**: To provide a Secondary / Higher Secondary School within a reasonable distance i.e. 5 kilometer for Secondary Schools and 7 -10 kilometers for Higher Secondary Schools.
- **Access**: To ensure universal access to Secondary Education by 2017.
- **Retention**: To ensure universal retention by 2020.

- **Equity**: To ensure that no child is deprived of Secondary Education of a satisfactory quality due to gender, socio-economic, disability and other barriers.
- **Quality**: To improve the quality of Secondary Education resulting in enhanced intellectual, social and cultural learning.

Box 3.5: Padhe Bharat Badhe Bharat (MHRD, GoI, 2014)

Padhe bharat badhe bharat scheme for class I and II students for improving early reading and writing with comprehension and early mathematics. It is planned in a twin track approach. (i) to improve language development by creating an enduring interest in reading and writing with comprehension; and (ii) to create a natural and positive interest in mathematics related to the physical and social world. In 2014, Rs 460 crores was approved to states for this scheme.

Objectives of the scheme are:

To enable children to become motivated, independent and engaged readers and writers with comprehension possessing sustainable and lasting reading and writing skills and achieve learning levels appropriate to the class of study.

2. To make the children understand the reasoning in the domains of number, measurement and shapes; and enable them to become independent in problem solving by way of numeracy and spatial understanding skills.

3. To associate reading and writing with the experience of joy and real life situation.

4. To recognize social perspective of home- school transition and the role of children's literature in the process of building independent and engaged readers and writers.

RMSA was allocated Rs 5000 crore in 2014-15 across India. In Gujarat the Commissionerate of Schools, which looks after secondary education in the state, is also the implementing agency of RMSA. Another important initiative towards of USE under RMSA is the Model Schools Scheme (MSS) which was begun in 2011. The main aim of MSS is to provide quality education to talented rural children through the setting up of 6,000 model schools at the rate of one school per block as a benchmark of excellence (Minstry of Human Resource Development, GoI, 2015). The scheme was supposed to be executed with central and state governments and public private partnerships. However, in 2015, the MHRD delinked from the funding MSS thus placing the entire funding burden on the states and UTs.

3.9.7 Initiatives for Secondary and Higher Secondary Education in Ahmedabad Rural

The secondary and higher secondary schools are under the control of DEO office Ahmedabad (Rural) which includes areas like Barwala, Ranpur, Dholka, Dhandkula, Viramgam, Mandal and Detroj-Rampura. Till 2005, there was not a single Government secondary (SS) or higher secondary (HS) school in Ahmedabad rural district. Most of the schools SS and HS schools present were either grant in aid or self-financed schools. Due to large distance between villages and grant in aid schools, many children especially girls were deprived of secondary education. Taking note of this situation DEO office approved the first Government secondary school in Nanodara (Bavla) in 2005. Later in secondary schools were started at Sodhi (Barwala) and at Pipli (Dhandhuka). The Government took a policy decision to start government secondary schools under RMSA (Rashtriya Madhyamik Shiksha Abhiyan) in areas where there was no secondary grant in aid schools within a radius of 5 kms. The villages were decided through the mapping of villages by BISAG (Bhaskaracharya Institute for Space Applications and Geo-informatics). On the lines of the survey, 6 government secondary schools and 11 secondary schools under RMSA were started in 2011. During the period of six years a total of 20 Government secondary schools were set up (see Table. 3.17).

With the start of the government secondary schools in Ahmedabad (Rural) district, the need for higher secondary schools arose. The government took a policy decision that wherever there is a secondary school, within a radius of 15 kms there should be one higher secondary school. In June 2009 Government HS schools were started at Upardal (Sanand), Bavliyari (Dhanduka) and Shiyal (Bavla). In the beginning, these schools had only general stream (Arts and Commerce). Later Government decided to have at least one science stream higher secondary school in each block head quarters. As per this initiative Mandal and Detroj Talukas got science stream colleges in 2010 and 2014 respectively. Details on secondary and higher schools and enrollment in Ahmedabad are given in Table 2.16.

Enrollment figures for the secondary and higher secondary schools across all Ahmedabad talukas are given in table 3.18. For granted secondary and higher secondary schools, gender wise enrollment is also shown in the table. Enrollment in granted SS and HS schools far out number the enrollment government schools. Enrollment is highest in Ahmedabad city due its

large population, Daskroi comes second. The Gender gap in secondary education is much higher than the primary education. In Figure 3.26 GPI index for the SS and HS granted schools are plotted. The GPI ranges from 0.46 (Barvala) to 0.59 (Daskroi) for secondary schools and for HS secondary it is much lower, and range from 0.23 (Bavla) and 0.51 (Dholka). Drastic drop in enrollment figures in secondary and higher secondary schools is a matter of concern.

Table 3.17: Government secondary and higher secondary schools in Ahmedabad (Rural)

	Government Secondary Schools		RMSA Secondary Schools		Government Higher Secondary Schools	
Year	Number	Enrollment	Number	Enrollment	Number	Enrollment
2009-10	3	123	-	-	4	86
2010-11	3	189	-	-	4	89
2011-12	9	340	11	379	5	202
2012-13	9	562	11	694	5	207
2013-14	9	759	11	758	5	210
2014-15	9	789	11	845	5	255

According to Ahmedabad district officials this drop is primarily due to the following reasons.

- Many girls in rural areas get married at early ages 14-18 years, especially in Thakor, Rabari and Koli communities
- Girls have to take care of household chores and are unable to attend the classes.
- Secondary schools are not present in every village and distance becomes a major factor. Parents are reluctant to send girls to school which are distant from home.
- There are very few government secondary schools in villages.

These factors among others needs careful thought of and remedial measures need to be put in place.

Figure 3.20: Gender Parity in Secondary and Higher Secondary grant in aid Schools- Ahmedabad (Rural)

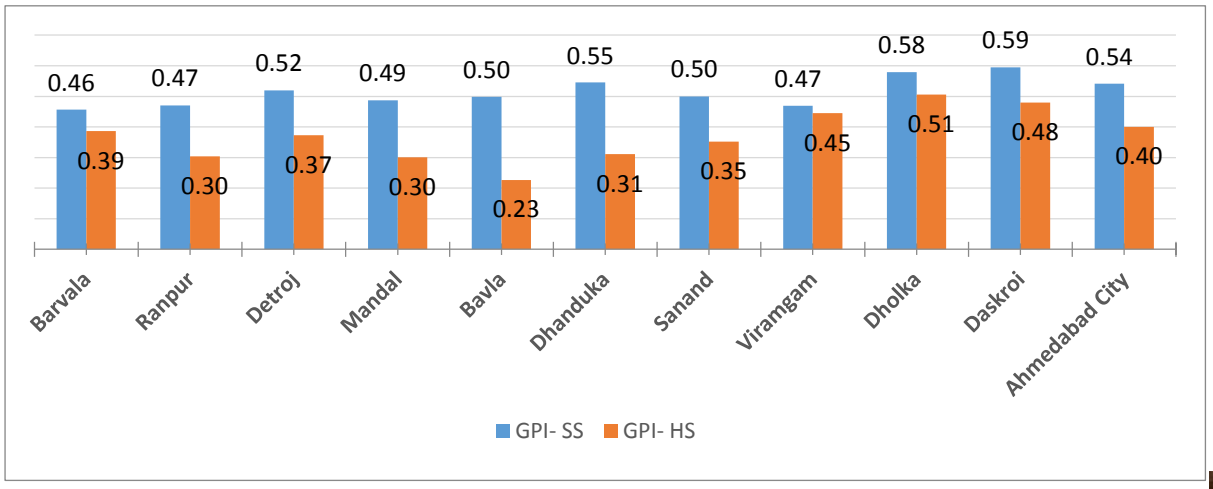


Table 3.18: Enrollment in Primary, Secondary and higher secondary schools in Ahmedabad (Rural) : 2013-14

Sl no	Taluka	Government Schools-	Granted private Primary schools	Grated Secondary Schools		Granted Higher Secondary Schools	
				Boys	Girls	Boys	Girls
1	Mandal	-	178	2101	1022	1128	339
2	Detroj	7	129	1851	961	918	279
3	Viramgam	-	956	3821	1793	1385	314
4	Sanand	106	937	3445	1722	2138	753
5	Ahmedabad City	521	630	25653	13888	21337	8541
6	Daskroi	277	1312	9260	5509	4793	2299
7	Dholka	-	954	5091	2946	3405	1722
8	Bavla	217	1015	2490	1242	1422	443
9	Ranpur	247	-	1536	723	673	260
10	Barvala	-	58	1279	584	964	359
11	Dhanduka	155	65	2840	1548	3019	1345
	Total	1530	6234	59367	31938	41182	16654

Source: District Educational Officer Ahmedabad (Rural)

3.9.8 Educating the Under Privileged Sections

Under the aegis of department of social justice and empowerment, Gujarat state, various social welfare initiatives for the deprived sections such as socio-economically backward classes, minorities, and nomadic and de-notified tribes (DNT) are taken up.

To encourage school enrollment and retention of these deprived sections of society pre matric scholarship is provided to students based on the income level of parents, class in which student is studying and whether the school is in rural/urban area. The type of beneficiary, eligibility criteria and amount of scholarship are listed in Table 3.19 . The year wise number of beneficiaries and total amount spent on pre-metric scholarship from 2010 to 2015 is summarized in the Table 3.20.

Table 3.19 Pre-metric scholarship scheme: implementing agency, beneficiary, eligibility an annual benefits.

Agency	Beneficiary	Eligibility	Annual Benefits given
Gujarat state	Students of SEBC and economically backward class	Annual Income of Father/Parent below Rs. 47000 For rural areas and below Rs.67000 For urban areas	Std 1-4: Rs. 250
Gujarat State	Students of SEBC,Economically Backward class, Minority, nomadic and De-notified tribes	Annual Income of Father/Parent below Rs. 47000 For rural areas and below Rs. 67000 For urban areas.	• Std 5-8: Rs 250 • Std. 9-10: Rs 400 • Girls: Std. 6-10: Rs 750 • Exam fees for Std. 10.
Government of India	Students of Extremely backward class among SEBC		• Std. 1-5: Rs 750 • Std. 6-8: Rs. 900 • Std: 9-10: Rs. 1000

Table 3.20: Pre-metric scholarship for the deprived classes (Beneficiaries)

Sr. No.	Year	Number of students	Amount spent (in Lakh Rs.)
1	2010-11	392514	532.22
2	2011-12	444074	1004.87
3	2012-13	445400	1340.63
4	2013-14	437539	1294.85
5	2014-15	354081	1619.63

Along with this, several other educational schemes are running with the support of department of social justice and empowerment. The Saraswati Sadhana provides bicycles to girls, and government grant in aid hostels provide free boarding and lodging facilities, and loans are provided for higher education abroad. The eligibility criterion and benefits are given in Table 3.20.

Table 3.21: Educational schemes for the deprived classes (Benefits)

Sr. No.	Name of the scheme	Beneficiary	Eligibility	Benefits given
1	Saraswati Sadhana Bicycle Scheme	Girl students of SEBC and Economically backward class enrolled in Std. 9th.	Annual Income of Father/Parent below 47000 Rs. For rural areas and below 67000Rs. For urban areas.	A bicycle.
2	Government hostel scheme	Students of Std. 11-12, graduate, post-graduate, medical, engineering and diploma of SEBC, Economically backward class nomadic and De-notified tribes, on caste and faculty wise merit basis	Annual Income of Father/Parent below 47000 Rs. For rural areas and below 67000Rs. For urban areas.	Free boarding and lodging in total four government hostels in Ahmedabad district.
3	Grant in aid hostel	Students of std. 9-12 of SEBC, Economically backward class nomadic and De-notified tribes	Annual Income of Father/Parent below 47000 Rs. For rural areas and below 67000Rs. For urban areas.	Free boarding and lodging in Government approved NGO run Grant in aid hostels in Ahmedabad district
4	Loan for Higher studies in abroad	Bright students of SEBC who have achieved exceptional success their respective faculty of study and wish to pursue higher studies abroad.	No limitation of family income	Low interest rate loan (4% annual interest rate) of maximum Rs. 15 lac

SWOR ANALYSIS

STRENGTHS

Ahmedabad is primarily an urban district with a highly literate population.

Enrolment in elementary schools is near universal, retention rate is high and dropout rates are significantly low.

Access to schools is not a problem as ample number of public and private schools are available in the district.

Significant improvements are seen in schools infrastructure. Most schools now meet the infrastructure norms of RTE.

There is a high demand for an educated and skilled labour force due to the presence of industries and service sector jobs in Ahmedabad city and neighbouring talukas

OPPORTUNITIES

Effective use of school data platforms such as DISE-UDISE, school report cards and Gunotsav can be helpful to track the school performance

Individual child progress can be mapped and analyzed with innovative digital platforms like child tracking and migration monitoring.

Presence in large numbers of private schools gives an opportunity for strong public private partnership in education.

Funding for schools is increasing which can be used for improving learning outcomes.

Opportunity to learn from success of existing government initiatives like Pragna and Smart schools in scaling activity based learning and digital learning.

Consultations for New Education Policy which promises comprehensive reforms in education is underway.

WEAKNESSES

Ahmedabad has a high level of rural-urban gap in literacy.

In rural areas, female literacy is significantly low and gender gap is high.

Gender parity in secondary and higher secondary schools is very high in Ahmedabad rural talukas.

Government school enrollment is declining and the poor are shifting to private schools.

Learning levels of school children (reading and arithmetic) is quite low and showed no significant improvements in the past five years.

Proportion of schools with top ranking (grades A and A+) under Gunotsav is declining.

RECOMMENDATIONS

Learning outcomes of children should be prioritized over physical infrastructure when evaluating schools.

Arrest the decline in government school enrollment by making them perform better than private schools, introducing English as language of study in the first grade itself.

Move towards universalizing secondary education. Model Schools on par with KVs and Navodaya Vidyalyas should be started in each taluka.

Government can partner with NGOs who have demonstrable expertise in improving learning outcomes at large scale.

Hiring of qualified teachers, especially in science and mathematics, and retaining them should be prioritized. Teacher appointments should be frequent.

Social norms about early marriage needs to be changed through awareness programs in communities and ill effects child marriage needs to be emphasized in the curriculum itself.

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Appendix of Tables

Table A2.1 Taluka wise Male -Female Literacy Rate and Gender Gap

	Persons		Male		Female		Gender Gap	
	2001	2011	2001	2011	2001	2011	2001	2011
Mandal	65.44	72.81	81.57	85.99	48.46	59.05	33.11	26.94
Detroj-Rampura	64.39	73.34	80.76	86.54	47.31	59.41	33.45	27.13
Viramgam	62.81	71.19	76.35	82.21	48.18	59.40	28.17	22.81
Sanand	62.05	73.79	77.10	85.18	45.72	61.53	31.38	23.65
Ahmadabad City	83.85	88.29	89.76	92.30	77.25	83.85	12.50	8.45
Daskroi	77.26	81.70	87.18	89.65	66.24	73.25	20.94	16.40
Dholka	68.37	77.64	80.85	86.67	54.77	67.90	26.08	18.77
Bavla	61.04	70.11	75.59	81.18	45.00	58.16	30.59	23.02
Ranpur	55.95	69.40	70.21	80.20	40.72	58.09	29.49	22.10
Barwala	61.27	70.34	74.75	80.99	46.89	58.92	27.86	22.07
Dhandhuka	65.50	73.71	79.52	84.58	50.36	61.94	29.16	22.64
Ahmadabad-DIST	79.50	85.31	87.31	90.74	70.83	79.35	16.48	11.39
Gujarat	69.14	79.31	79.66	87.23	57.8	70.73	21.86	16.50

Source: Registrar General of India, Census 2001 and 2011

Table A2.2 Ahmedabad Literacy Rural-Urban Gap

	Persons		Rural		Urban		Rural Urban Gap	
	2001	2011	2001	2011	2001	2011	2001	2011
Mandal	65.44	72.81	65.44	72.81	NA	NA	NA	NA
Detroj-Rampura	64.39	73.34	64.39	73.34	NA	NA	NA	NA
Viramgam	62.81	71.19	54.98	65.67	79.43	84.41	24.45	18.74
Sanand	62.05	73.79	57.93	67.92	81.70	82.36	23.77	14.44
Ahmadabad City	83.85	88.29	76.28	NA	83.86	88.29	7.58	NA
Daskroi	77.26	81.70	70.67	77.82	83.13	86.97	12.46	9.15
Bavla	61.04	70.11	55.67	64.48	78.49	84.81	22.82	20.33
Dholka	68.37	77.64	65.36	75.46	75.70	82.13	10.34	6.67
Ranpur	55.95	69.40	55.95	66.67	NA	81.26	NA	14.60
Barwala	61.27	70.34	61.27	68.79	NA	75.22	NA	6.43
Dhandhuka	65.50	73.71	63.33	71.45	76.05	81.39	12.72	9.94
Ahmadabad-DIST	79.50	85.31	62.52	71.05	75.88	87.93	13.36	16.88
Gujarat	69.14	79.31	61.29	73	81.84	87.58	20.55	14.58

Source: Registrar General of India, Census 2001 and 2011

Table A2.3: Primary, Secondary and Higher Secondary Schools (2013-14)						
Sl no	**Taluka**	**Government Schools**	**Granted Private Primary schools**	**Grated secondary Schools**	**Granted Higher Secondary Schools**	**Total**
1	**Mandal**	1	1	10	4	16
2	**Detroj**	-	1	8	3	12
3	**Viramgam**	1	2	13	8	24
4	**Sanand**	8	3	16	11	38
5	**Ahmedabad City**	2	2	124	122	250
6	**Daskroi**	-	6	60	41	107
7	**Dholka**	5	3	22	15	4
8	**Bavla**	4	3	10	5	22
9	**Ranpur**	3	-	5	4	12
10	**Barvala**	-	1	3	5	9
11	**Dhanduka**	-	1	14	10	25
Total		24	23	285	228	**560**
Source: District Educational Officer Ahmedabad (Rural)						

CHAPTER 4: STATUS OF HEALTH & NUTRITION

"It is Health that is real wealth and not pieces of goal and silver"

Mahatma Gandhi

Status of Health & Nutrition

शरीरमाद्यं खलु धर्मसाधनम्

Shareeramaadyam khalu dharmasadhanam, which translates to "*The body is the means for performing good deeds*" is an ancient Indian saying attributed to Manu and quoted by many including Kalidasa. This could be interpreted as viewing physical health as a means of fulfilling social and spiritual responsibilities, thus emphasizing the role of health beyond the care of the physical body. The World Health Organization (WHO) definition of health arguably fits with this idea where health is defined as "a state of complete physical, mental and social wellbeing and not merely the absence of disease of infirmity" (WHO, 2015). This definition, a part of the preamble to the constitution of the WHO, changed the approach to health as a positive outcome rather than merely on negative concepts such as the "absence of disease."

4.1 Health and Human Development

Viewing human development from Sen's capabilities perspective (Sen, 1999) and Haq's holistic development paradigm (Haq, 2009), it is very clear that health is an inextricable part of human development. Similar to other aspects of human development, health is necessary to achieve, and yet is a goal of, human development. A healthy society is able to produce more and thus contribute to a greater extent towards economic growth (Grosse & Harvaky, 1980). A community that does not lose resources to addressing health-related challenges can potentially make greater progress towards social development. At the individual level, poor health restricts the freedom to choose a way of living by sapping individuals' physical abilities, draining their finances, inflicting mental and emotional trauma, disrupting the fabric of their social life, and reducing their ability to contribute to society.

Health and development are interdependent. Effective developmental policies such as regulation of the labor market, social security programs, and public transportation policies can all help achieve better community health (Marmot et al., 2008). In addition to health benefits accruing to individuals, interactions between health and education have a great impact on the social and economic development of the population. For instance, if people are healthy, they are likely to be interested in investing financially in education—healthy parents

are likely to be interested in educating their children, and healthy children are likely to show better education outcomes. This interdependence of health and education needs to be borne in mind while developing economic policies. Notably, it is not only the child's health that is important in enabling him/her to attend school but the health of the parents, other family members, and the health of the that teachers contribute to making society's investment in education a fruitful one. Thus, there are multiple players and multiple angles to the relationship between health and development (Bloom, 2015). Development is ultimately concerned with reducing poverty. Achievement of this goal needs investment in health and prioritizing health in overall developmental plans and policies (World Health Organization (WHO), 2015).

4.2 Health in India

In India, public health is the concern of state governments since health is a state subject; however, a few health-related programs are funded by the central government. Health policies in India have focused on multiple issues such as infectious disease control, improvement in nutrition as well as maternal and child health, mental health awareness and care, health care accessibility, health care affordability, and employees' insurance programs. The public health system in India is designed to not only provide curative medical care but also preventive and promotive health services. One of the most important tasks is to enable the public health system to effectively deal with any new health problems that might emerge in the future.

In this report on human development of Ahmedabad District, we focus on the progress achieved by the district in addressing important health issues. Just as there are multiple ways to conceptualize health there are several ways to measure health. Despite the aspirational tone of the WHO definition, health is usually measured using indicators of absence of health. As health is a complex phenomenon, it is measured using various indicators which, taken together, provide a comprehensive picture of the health situation of the district.

4.3 Health Indicators

4.3.1 Mortality

Death is a unique incident, a universal event and can be defined clearly and easily. Data on the cause of death may provide important information about the health status of the deceased. In a population where a certain disease is highly prevalent, cause-specific mortality rates can give a clear picture about the impact of a health intervention aimed at reducing the prevalence of that disease. Different mortality indicators such as infant mortality rate (IMR), neonatal mortality rate (NMR), maternal mortality ratio (MMR) are used to measure population health. Census data, household surveys and a few longitudinal surveys are potential sources of data on mortality in populations.

4.3.2 Morbidity

Although mortality is a clear and robust health indicator, it does not give an adequate picture of population health status. Not all ill health is life-threatening. Therefore, prevalence and incidence of diseases, for instance, prevalence of chronic diseases and incidence of newly emerging diseases, are important indicators of population health. Moreover, survival from formerly life-threatening diseases is now common with improved medical knowledge, facilities and modernization. Tracking the performance of morbidity measures over time can give an indication of such changes. Data on morbidity can be routinely collected by active or passive surveillance programs.

4.3.3 Healthcare Infrastructure and Utilization

Availability of adequate healthcare infrastructure could be a marker of a population's access to healthcare. Health service utilization can be used as an indicator of the demand placed on public health infrastructure, and the accessibility, affordability and availability of the health services to the population. It could also represent productivity, comprehensiveness and operationalization of the health care system (Da Silva, Contandriopoulos, Pineault, & Tousignant, 2011). Indicators such as the number of primary health centers in a district or the number of doctors enrolled in a health scheme shed light on the "supply side" of health care provision. While these are highly informative from a health systems perspective, indicators of healthcare infrastructure are indirect and weak measures of the health of a population.

4.4 Birth and Death Rates in Ahmedabad District

4.4.1 Crude Birth Rate

Crude birth rate (CBR) is the number of live births occurring among the population of a given geographical area during a given year, per 1,000 mid-year total population of the given geographical area during the same year. CBR can be calculated from the birth registration data provided by the civil registration system (CRS). Completeness of birth registration ensures better accuracy of CBR estimates. Percentage of birth registration under CRS increased from 2005 to 2010 due to better and more meticulous birth registration process Gujarat has achieved 100 percent birth registration since 2008 (CRS Gujarat, 2011).CBR for Gujarat state has increased marginally from 20.9 in 2005 to 21.6 in 2011 (CRS Gujarat, 2011). In 2013, the CBR remained almost the same (20.8) (Figure 4.1).

Table 4.1: Crude Birth Rate (CBR) and Crude Death Rate (CDR) for Ahmedabad District and Gujarat, 2013

District/State	Registered births	CBR	Registered deaths	CDR	NRGP (Calculated as CBR-CDR)
Ahmedabad	146719	20.2	57897	8	12.2
Gujarat	1266047	20.8	342612	5.6	15.2

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14,CRS, 2013

As shown in Table 4.1, the total number of births was about 1.4 lakhs in Ahmedabad district in 2013-14 (CRS Gujarat, 2013). The CBR at district level was 20.2/1000 in 2013 which was slightly less than that at the state (20.8) level (CRS Gujarat, 2013).

Other districts in Gujarat such as Bhavnagar (22.8), Gandhinagar (19.5), Vadodara (31.4) and Katch (23.8) had CBR higher than that in Ahmedabad in 2013 (CRS Gujarat, 2013). Anand (18.5), Surat (16.2), and Jamnagar (16.8) had lower CBR as compared to Ahmedabad (CRS Gujarat, 2013).

Measuring Health:

Crude Death Rate (CDR): Number of deaths in a given year per 1000 mid-year population

$$CDR = \frac{Number\ of\ deaths\ in\ a\ given\ year}{mid-year\ population} \times 1000$$

Infant Mortality Rate (IMR): Number of deaths of infants under age 1 per year per 1000 live births in the same year

$$IMR = \frac{Number\ of\ deaths\ of\ infants\ between\ in\ a\ given\ year}{Total\ live\ births\ in\ that\ year} \times 1000$$

Maternal Mortality Ratio (MMR): 'Maternal death' is death of a woman while pregnant, or within 42 days of termination of pregnancy, irrespective of the duration or site of the pregnancy, from any cause related to, or aggravated by the pregnancy or its management and not from accidental causes. Maternal mortality ratio is measured per 100,000 women of childbearing age. Thus, (MMR) is defined as the number of women who die as a result of complications of pregnancy or childbearing in a given year per 100,000 live births in that year.

$$MMR = \frac{Number\ of\ maternal\ deaths\ in\ a\ given\ year}{Number\ of\ women\ of\ childbearing\ age\ in\ that\ year} \times 1000$$

Neonatal mortality rate: Infant deaths within the first 28 days from birth is counted as neonatal deaths. *Neonatal deaths may be subdivided into early neonatal deaths, occurring during the first seven days of life, and late neonatal deaths, occurring after the seventh day but before the 28 completed days of life. Neonatal mortality is defined as the Number of deaths during the first 28 completed days* of life per 1 000 live births in a given year or period.

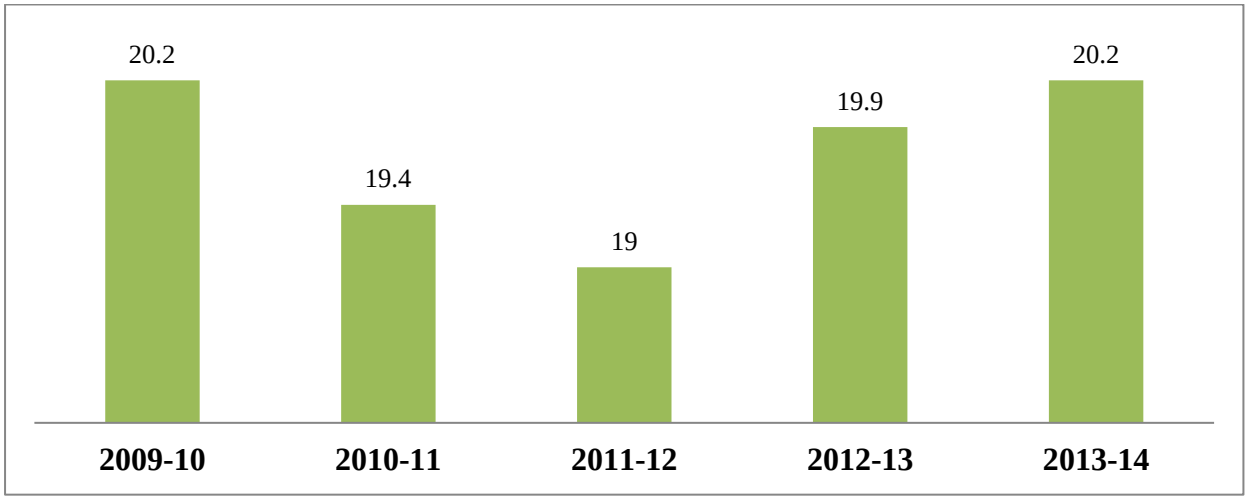
$$NMR = \frac{Number\ of\ neonatal\ deaths\ in\ a\ given\ year}{Total\ number\ of\ live\ births} \times 1000$$

Disease Incidence Rate : Number of persons contracting a disease during a given time period per 1000 population at risk.

Disease Prevalence: Number of persons who have a particular disease/condition at a given point in time per 1000 population.

Sources: http://ocw.jhsph.edu/courses/populationchange/PDFs/Lecture6.pdf
http://www.who.int/whosis/whostat2006DefinitionsAndMetadata.pdf?ua=1

Figure 4.1: Crude Birth Rate (CBR) in Ahmedabad District (2009 to 2014)



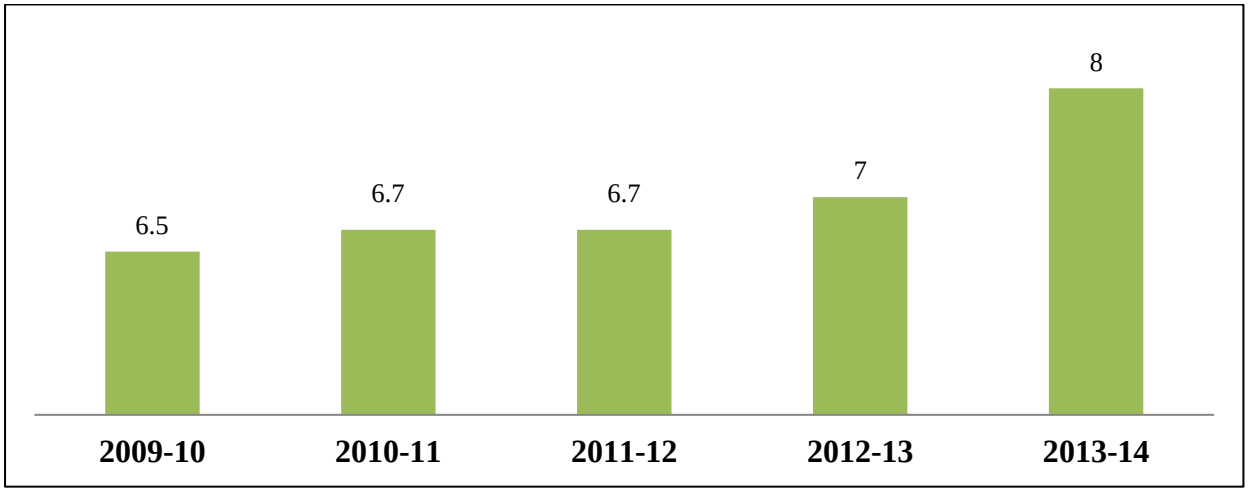
Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14)

4.4.2 Crude Death Rate

The crude death rate (CDR) is the number of deaths occurring among the population of a given geographical area during given year, per 1,000 mid-year total population of the given geographical area during the same year. The CDR for the state of Gujarat was 5.6 in 2013. Similar to the CBR, CDR too has been declining over years. In 1951, CDR of Gujarat was 24.9 which further declined to 10.7 in 1991 and 7.8 in 2001 (Health Statistics, 2012-13).

CDR of Ahmedabad district was 8.0 in 2013, which is higher than the Gujarat state (5.6) (CRS Gujarat, 2013). The CDR declined in 2010 and 2011 as compared to 2009 but again increased in 2012 and 2013 (See Figure 4.2). Among other districts in Gujarat Dohad had the lowest CDR (2.2) whereas Ahmedabad district had the highest CDR (8.0) in 2013 (CRS Gujarat, 2013). Assuming similar age structures across all districts, this might reflect better reporting practices in Ahmedabad City, however the reasons for this pattern need to be investigated.

Figure 4.2: Crude Death Rate (CDR) in Ahmedabad District (2009 to 2014)



Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14

4.5 Maternal and Child Health Indicators

One of the biggest and long-standing public health challenges in India is assuring the health of mothers and young children. Ahmedabad district is no different. The conventional method of assessing maternal health in an area is to examine levels of uptake of preventive services such as ante-natal care (ANC), and tetanus toxoid (TT) vaccination. Similar indicators used to measure child health are vaccination of children against tuberculosis using Bacille Calmette Guerin (BCG) and against diseases such diphtheria, pertussis and tetanus (DPT).

More informative are indicators of health outcomes such as successful birth outcomes, incidence of diseases among mothers, prevalence of undernutrition and infection among children. This section presents an overview of such indicators for Ahmedabad district. Data on most health outcomes were unavailable and our analysis relies primarily on uptake of preventive health services

4.5.1 Registration for ante-natal care (ANC)

As shown in Table 4.2, district level ANC registration data shows that around 42 thousand pregnancies were registered early in 2013-14 (Health Statistics , 2013-14). Although the registration was much higher as compared to the registration in 2010-11 when about 37 thousand pregnancies were registered early, the percentage of early registration was higher (78.2%) in 2010-11 (Health Statistics, 2012-13). In Ahmedabad municipal area (city) (AMC),

about 80 thousand pregnancies were registered early. The percentage of early registration was much lower in AMC (67.03%) as compared to the district performance. In 2013-14, percentage of early registration was about 77.69% of the total ANCs registered in Ahmedabad indicating that about 22% pregnancies registered were after the first trimester. In 2013-14, according to Health Statistics report, Porbandar, Mehsana and Narmada districts did extremely well in early ANC registration with more than 80% registrations completed early in pregnancy.

Table 4.2: Frequency (2013) and proportion (%) (2009-2013) of early registration for ANC among all registered for ANC, Ahmedabad district

Total no of expectant mothers registered for ANC (2013-14)	***Early registration (2013-14)***	**Early registration of ANC (%)**				
		2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
For Ahmedabad district (excluding Ahmedabad City (AMC))						
54647	42454	76.70	78.27	76.74	77.59	77.69
For AMC						
120409	80705	53.05	69.83	74.63	74.00	67.03

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14

When compared over time, the performance of Ahmedabad district has stayed the same while that of AMC has worsened. The Commissionerate of Health, Medical Services, Medical Education and Research (CDHO) team shared that the data on early registration of ANC is monitored using the Health Management Information System (HMIS) which uses data entered at each health facility (and not data from each expectant mother). They posited that under-reporting by a few health facilities might have lowered the average for the entire district (See Table 4.C in the appendix).Moreover, a few districts are underserved by health staff due to challenges with hiring personnel.

While the exact reasons for the low proportion of early registration of ANC at AMC is unavailable, it is possible that the AMC data are from facilities which attract mothers from under-privileged strata of society who may not have taken time away from their multiple work and home responsibilities to seek early ante-natal care. Also, it is not known if such mothers had registered for ANC at a different facility but that was not recorded by AMC facilities.


તા.૦૭/૦૮/૨૦૧૩ ના રોજ માણકોલ, તા.સાણંદ જિ.અમદાવાદ ખાતે યોજાયેલ સ્તનપાન સપ્તાહ નિમિત્તે સગર્ભા માતાનું બી.પી. માપતા પ્રા.આ.કેન્દ્ર ઉપરદલના ડૉક્ટર શ્રીમતી પુનમબેન ગોંભવા

Early registration is considered crucial as it helps early diagnosis and management of pregnancy related ailments. It also helps provide pregnancy related counseling. It is also linked to perinatal morbidity and mortality among women. It is clear that district level early ANC registration needs utmost attention.

4.5.2 Tetanus Toxoid (TT) Vaccination among Expectant Mothers

As shown in Table 4.3, out of the total registered for ANCs in Ahmedabad (about 54 thousand), about 46 thousand mothers received tetanus toxoid in 2013-14, which covered almost 85% registered mothers (Health Statistics , 2013-14). This coverage is far better than that at the state level (about 83%) (Health Statistics , 2013-14) but at the district level, the percentage of registered mothers receiving TT was reduced in 2014 as compared to 2010-11, when the coverage was almost 96% (Health Statistics,2010-11).

While there appeared to be some improvement with higher rates in 2011-12 and 2012-13, the fall in 2013-14 is troubling. This decrease in the coverage needs immediate attention as this increases the chance of higher case rate of tetanus, a potentially deadly disease. This takes on even more importance in the light of the recent WHO declaration that India has eliminated maternal and neonatal tetanus (WHO, 2015).

Table 4.3: Frequency (2013-14) and proportion (2009 to 2013) of TT immunizations among registered expectant mothers, Ahmedabad district

No of expectant mothers registered for ANC	No of mothers vaccinated with TT among all registered for ANC	Proportion (%) of mothers vaccinated with TT among all registered for ANC				
2013-14	*2013-14*	2009-10	2010-11	2011-12	2012-13	2013-14
For Ahmedabad district (excluding AMC)						
54647	46835	88.69	96.14	90.34	91.56	85.7
For AMC						
120409	111982	59.61	93.62	94.23	91.32	93

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14

Table 4.4: Frequency (2013-14) and proportion (2009 to 2013) of 3 ANC registration among all registered expectant mothers, Ahmedabad district

Proportion (%) of mothers who received 3 ANC					*Total no of expectant mothers registered for ANC (2013-14)*	*Total no of registered mothers who received 3 ANC*
2009-10	2010-11	2011-12	2012-13	2013-14		
For Ahmedabad district (Excluding AMC)						
86.25	81.00	80.46	78.68	78.58	*54647*	*42939*
For AMC						
68.48	72.12	73.13	72.67	74.53	*120409*	*89736*

Source: *Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.*

4.5.3 Completion of Three ANC Visits by Expectant Mothers

As shown in Table 4.4, out of the total registered mothers for ANC, 78.58% mothers received three ANCs (ANC3) in 2013-14. This indicates that 21.32% mothers did not complete three ANC checkups. In AMC, too, the percentage of ANC3 completion was only about 74% (Health Statistics , 2013-14). The district performed better as compared to Gujarat as the state-wide percentage of mothers receiving three ANCs was only 74% in 2013-14 (Health Statistics , 2013-14). Also, there appears to be decreasing time trend in the proportion of expectant mothers who received ANC3 in the district in the 2009-2013 period which is troubling. Table 4.D in the Appendix shows the taluka-wise distribution of completion of 3 ANC visits by expectant mothers. The reason that partially explains the low proportions is the reduced number of health personnel in a few under-performing talukas, according to the CDHO team. When

compared to other districts Ahmedabad is lagging behind. One reason for this pattern in the AMC data could be a high proportion of late ANC registration (see Table 4.2) leading to non-completion of ANC3. Ahmedabad is lagging behind other districts in this regard. Porbandar and Dang districts reported about 90% mothers receiving three ANCs (Health Statistics , 2013-14). Thus, it is clear the government needs to put in more efforts to promote completion of ANC visits along with the incentives for early registration.

4.5.4 Institutional Deliveries and Home Deliveries

The 5th Millennium Development Goal of the United Nations aims to reduce maternal mortality ratio by three quarters by 2015. To achieve this goal, skilled attendance during delivery is one of the most essential criteria as complications arising during delivery, a common cause of maternal mortality, can be managed effectively. Of all the factors that improve maternal health, ensuring institutional deliveries is considered to be the single largest contributor to the health of pregnant women and neonates.

Institutional deliveries accounted for about 93.55% of all the registered deliveries in Ahmedabad district in 2010-11 (Health statistics , 2010-11). As per the data for 2013-14, the percentage of institutional deliveries increased to 97.74% of all the registered deliveries in Ahmedabad district (CDHO, 2013-14). It is heartening to see such high proportions of institutional deliveries. However, the district could aim for 100% performance in this regard. The reasons behind women choosing to have home deliveries need to be investigated. If needed, steps such as health education disseminating the benefits of institutional deliveries and the risks involved in home deliveries; provision of transport facilities for women who live in remote areas; and effective diagnosis and management of the danger signs during pregnancy and delivery might need to be taken to promote institutional deliveries.

Table 4.5: Distribution of site of delivery among all registered deliveries (2013-14)

	Institutional delivery			Home delivery	Total delivery registration
Region	Government	Private	Total		
Gujarat State	457946	629223	1087169	41785	1128954
Ahmedabad district (excluding AMC)	15479	28139	43618	1010	44628
AMC	50984	60618	111602	4886	116488

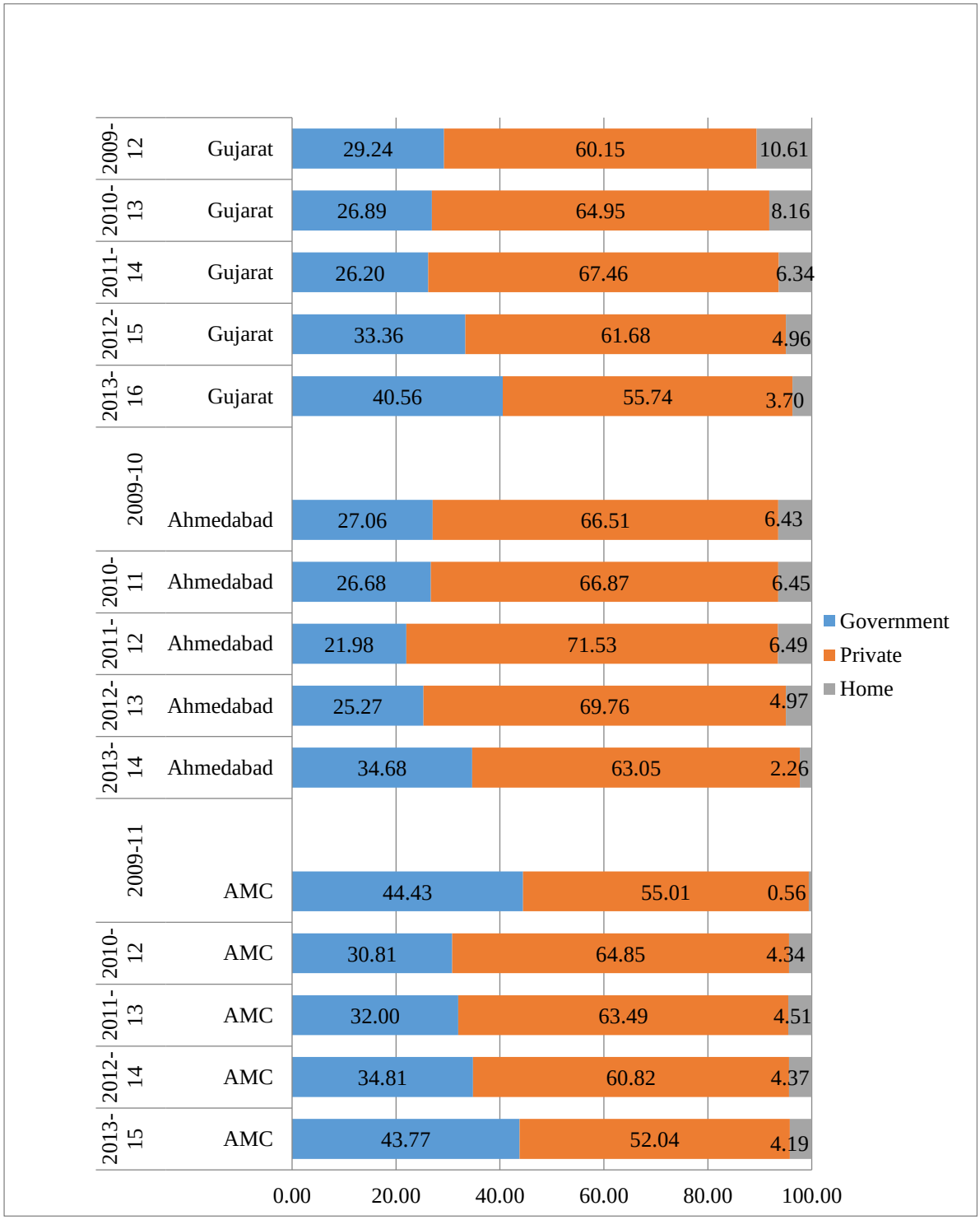
Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14

As shown in Table 4.5, an overwhelming proportion of the deliveries in Gujarat were institutional (10.9 lakh out of 11.3 lakh). Out of the total institutional deliveries in Gujarat, about 6 lakh deliveries occurred at private institutions (Health Statistics , 2013-14). Out of the total (about 44.6 thousand) registered deliveries in Ahmedabad district,about 43 thousand deliveries were institutional of which 15 thousand occurred at the government institutions and about 28 thousand occurred at the private institutions (Health Statistics , 2013-14).

This shows that almost 63% deliveries out of the total registered deliveries occurred at the private institutions and around 34% deliveries are carried out at the government institutions and around 2% of the deliveries are home deliveries (Health Statistics , 2013-14). In AMC, out of the total registered deliveries (about 1.16 lakh), 4% deliveries were home deliveries. Out of about 1.11 lakh institutional deliveries, about 54% deliveries occurred at private institutions (Health Statistics , 2013-14).

As is shown in the figure 4.3, over time the trend is moving towards institutional deliveries in the state, district and Ahmedabad city, with less than 5% of registered deliveries occurring at home in all three. We also see that while the proportion of home deliveries are decreasing over time, private institutions account for the majority of institutional deliveries. However, the trend also suggests that the proportion of deliveries in government institutions in the district is slowly increasing. As compared to Ahmedabad district, Amreli (42%), and Kutch (65%) districts performed well in government institutional deliveries (Health Statistics , 2013-14). Easy availability of private practitioners in the city could be one of the reasons for lower percentage of government institutional deliveries in Ahmedabad district.

Figure 4.3: Proportion of Deliveries In Government Institutions, Private Institutions And Homes, Gujarat And Ahmedabad District, 2009-2013



Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14

Table 4.6: Taluka-wise proportion of institutional deliveries among all registered deliveries (%)

		2009-10	2010-11	2011-12	2012-13	2013-14
Gujarat state		89.39%	91.84%	93.66%	95.04%	96.30%
Ahmedabad District (Excluding AMC)		93.57%	94%	94%	95%	97.73%
Talukas						
1	Daskroi	Not available (NA)	97%	98%	99%	100%
2	Viramgam	NA	94%	95%	96%	98%
3	Mandal	NA				
4	Detroj	NA				
5	Sanand	NA	95%	95%	96%	99%
6	Bavla	NA	91%	93%	96%	99%
7	Dholka	NA	98%	97%	96%	99%
8	Dhandhuka	NA	83%	81%	88%	94%
9	Barwala	NA	84%	84%	86%	92%
10	Ranpur	NA				
11	AMC	99.44%	95.66%	95.49%	95.63%	95.81%

Source: Taluka data shared by the CDHO; Government of Gujarat. State, District and AMC data from Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.

The picture of institutional deliveries (both government and private) at the taluka level (Table 4.6) is satisfactory. Daskroi had the highest percentage (100%) of institutional deliveries in 2013-14 whereas Ranpur and Barwala had the lowest (92%). AMC shows 95% of the deliveries occurring in government or private institutions (Health Statistics , 2013-14). Proximity of Daskroi to Ahmedabad city might be a reason for high number of institutional deliveries as compared to other talukas. One of the positive signs is that the percentage of institutional deliveries is slowly and steadily increasing in almost all of the talukas in Ahmedabad district (Table 4.6). The CDHO team shared that one of the reasons for low proportion of institutional deliveries in Dhandhuka, Barwala and Ranpur talukas is that there are fewer health staff in those talukas due to challenges in hiring. Moreover, the CDHO team added that Barwala and Ranpur talukas do not have any specialists empaneled in Chiranjeevi Yojana and that this too might have contributed to lowering these figures.

The institutional delivery rate appears to be stuck at 95% in Ahmedabad City since 2010. The reasons for the lack of increasing uptake of government services, especially in Ahmedabad

City warrant investigation. Perhaps there is a need to provide assured quality healthcare access to pregnant women in the government healthcare units.

4.5.5 Immunization of Children

Effective immunization against common diseases such as polio, diphtheria, tetanus and measles is one of the most important preventive measures to prevent child mortality. In Table 4.7, we observe that in Gujarat, out of the total live births reported (about 11.51 lakh) BCG and DPT3 vaccination coverage achieved great success (Health Statistics , 2013-14).

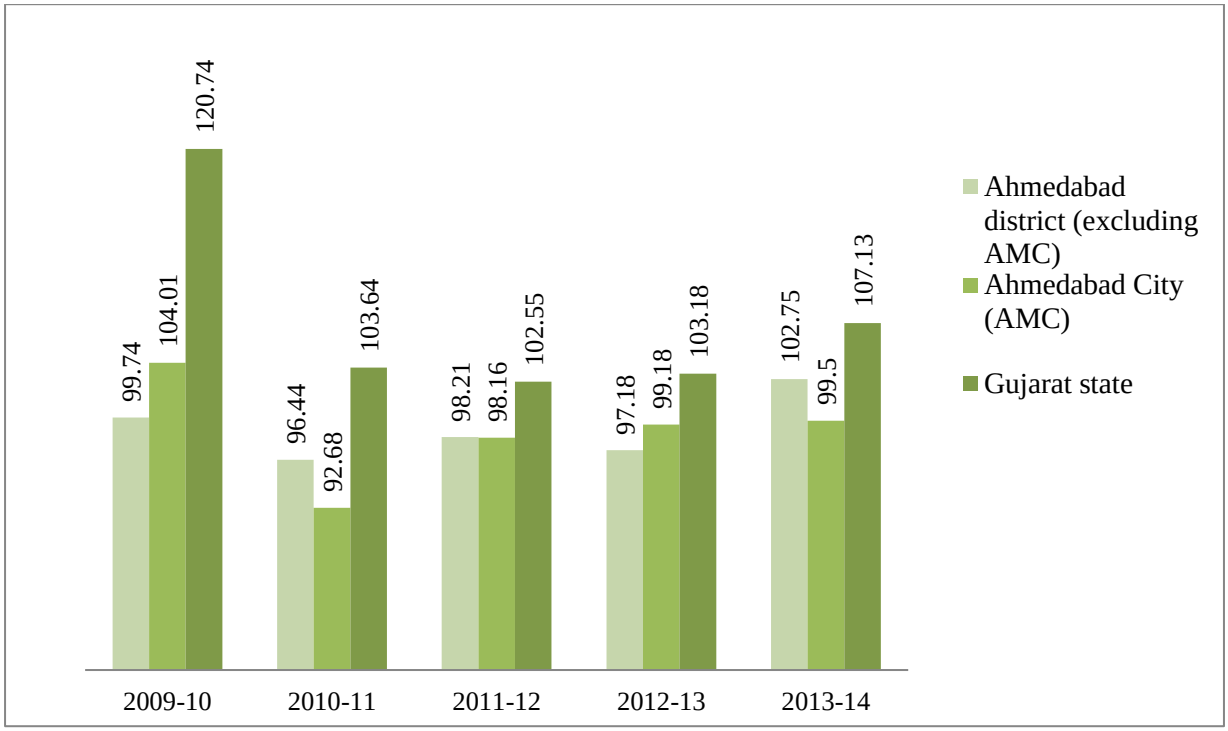
Table 4.7: Number of live births and their BCG and DPT immunization status in Gujarat and Ahmedabad District, 2013-14

Total Live Births Reported	BCG		DPT/Pentavalent 3rd dose	
	Achievement	Percentage Against Live Birth	Achievement	Percentage Against Live Birth
For Ahmedabad district (Excluding AMC)				
44362	45580	102.75	42886	96.67
For AMC				
106907	106373	99.50	98187	91.84
For Gujarat				
1151467	1233543	107.13	1233347	107.11

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14

In Ahmedabad district, some amount of variation is seen in the percentage immunization for various diseases. BCG vaccination (against TB) had the highest annual coverage with 107% of the live births immunized with BCG dose in 2013-14. In absolute numbers, around 44 thousand children were given BCG dose in Ahmedabad district. Figure 4.4 depicts time trend for BCG vaccination coverage in Ahmedabad district.

Figure 4.4: Proportion of Total Live births Reported that received BCG

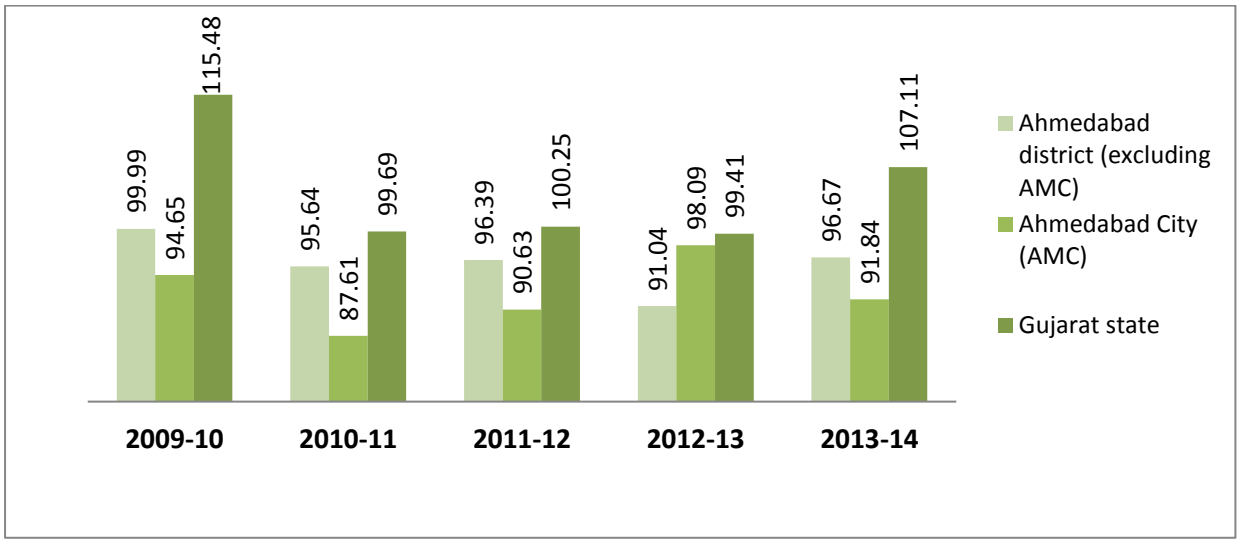


Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.

DPT3 vaccination (against diphtheria, pertussis and tetanus) coverage was good at 96.67%. However, Ahmedabad City reported only 92% DPT3 coverage and needs to direct efforts towards improving performance on this indicator. This statistic is of special concern because the coverage of DPT3 in Ahmedabad City in 2012-13 was about 98% (see Figure 4.5).

A number of other districts in Gujarat have reported 100% complete coverage for both BCG and DPT3 vaccination in 2013-14: Amreli, Anand, Bharuch, Gandhinagar, Jamnagar, Junagadh, Kheda, Kutch, Porbandar, Rajkot, Surat, Surendranagar, Tapi and Vadodara (Health Statistics , 2013-14). This indicates that Ahmedabad district as well as AMC has been lagging behind in achieving 100% immunization, especially with DPT3.

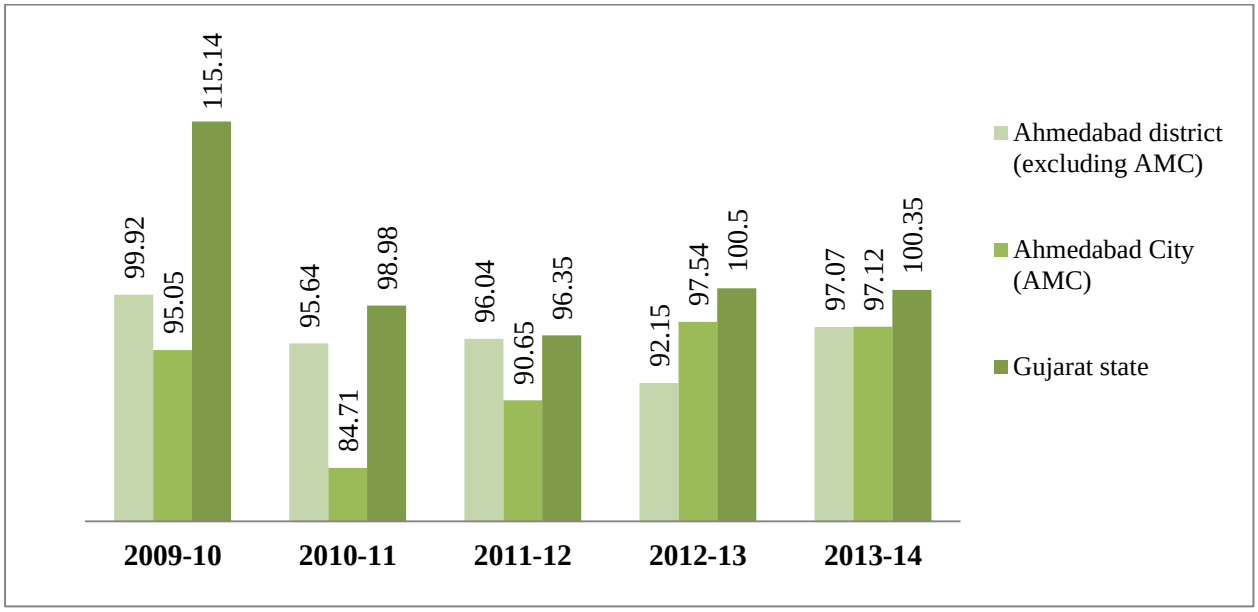
Figure 4.5:Proportion of Total Live Births Reported that Received Three Doses of DTP



Source: *Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.*

As shown in the figure below, polio vaccine coverage in Gujarat has been satisfactory. Except for 2010-11 and 2011-12, the polio vaccination coverage has been 100%. The performance of Ahmedabad district has been satisfactory (about 97%) in the polio vaccination coverage but not 100% (Health Statistics , 2013-14). Figure 4.6 shows time trend for Polio vaccination coverage for Ahmedabad district. Ahmedabad city too, has fallen short of achieving the 100% coverage for Polio vaccination in 2013-14. In Ahmedabad city, the percentage of children receiving polio dose was dissatisfactory in 2010-11, when the coverage was only about 84%. The coverage increased gradually in 2011-12 (about 90%), 2011-12 (about 97%) and 2013-14 (about 97%).

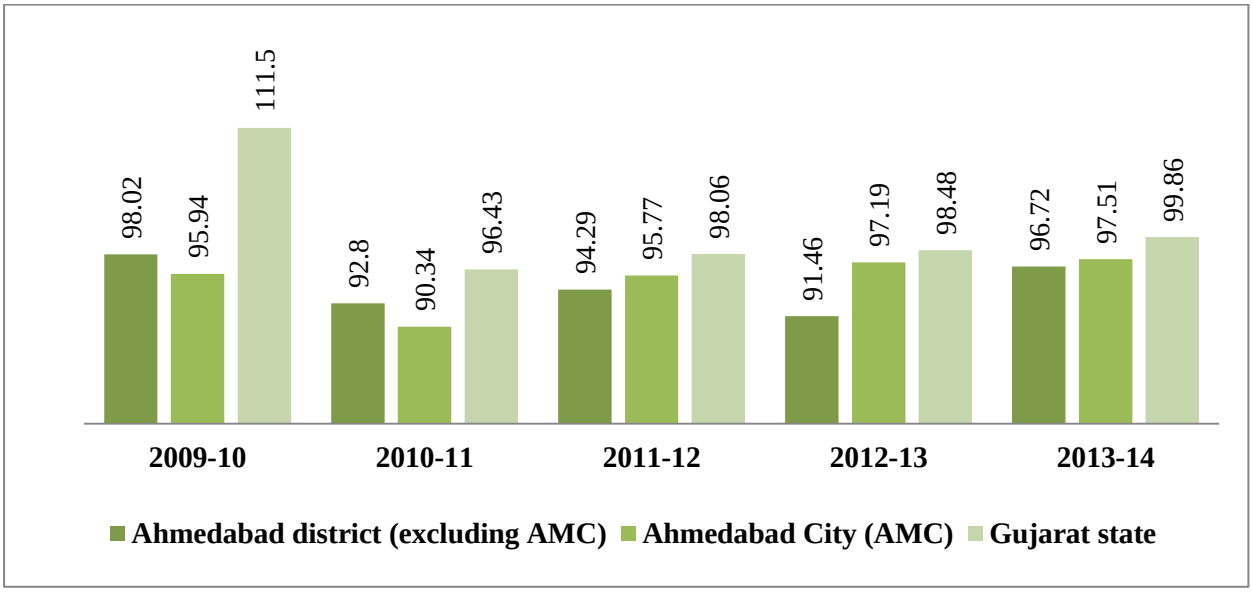
Figure 4.6: Proportion of Total Live Births Reported that Received Polio Vaccine



Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.

Coverage for measles vaccine has been satisfactory in Gujarat from 2009 to 2013. In Ahmedabad district, the coverage of measles vaccine has increased over time but has remained less than the state level coverage. In 2009-10, the measles vaccine coverage was about 98% which reduced to 92% in 2010-11. In 2012-13, the coverage reduced to about 91%, which was the least in the last five years. In 2013-14, about 96% children in Ahmedabad district received measles vaccine (Health Statistics , 2013-14). See Figure 4.7 for the time trend depicting coverage of Measles vaccine in Ahmedabad district. In AMC too, the measles vaccine coverage increased gradually from about 90% in 2010-11 to 97% in 2013-14.

Figure 4.7: Proportion of Total Live Births Reported that Received Measles Vaccine



Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.

4.5.6 Vitamin A First Dose Coverage

The coverage of Vitamin A first dose supplementation was satisfactory (95%) in Ahmedabad district as well as at the state level (93%). Time trend for Vitamin A dose coverage in Ahmedabad district is shown in Figure 4.8. Coverage of Vitamin A first dose supplementation was much lower in AMC (68%) as compared to the rest of the district (Health Statistics , 2013-14).

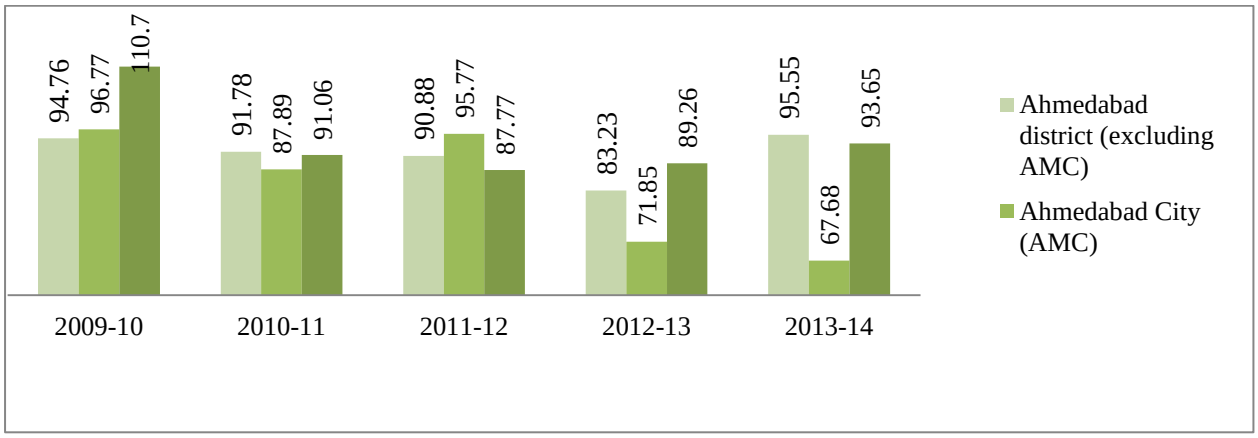
Table 4.8: Coverage of Vitamin A first dose in Gujarat and Ahmedabad (2013-14)

Total Live Birth	Vitamin A 1st dose achievement	Percentage against Live Birth
Ahmedabad district		
44362	42387	95.55
AMC		
106907	72357	67.68
Gujarat		
1151467	1078384	93.65

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14

This is lower than the coverage rate for the city in 2012-13 (71.85%). While the district reports about 96% coverage (and an uptick compared to 2012-13), the city reports only 68%. Latest data suggest that this figure went up to 69.7% for AMC in 2014-15 while the corresponding figure for the rest of the district is 95.1%. Even more worrying, there is a linear downward trend in Vitamin A first dose coverage rate for Ahmedabad city since 2009 (when the city had reported ~95% coverage). Given that Vitamin A is an essential vitamin which helps to prevent nutritional blindness among children the public health system of the district needs to direct maximum efforts at achieving full coverage of Vitamin A first dose supplementation. Among other districts in Gujarat many including Bharuch, Gandhinagar, Amreli and Rajkot have achieved 100% coverage in 2013-14 (Health Statistics , 2013-14).

Figure 4.8: Proportion of Total Live Births Reported That Received Vitamin A First Dose



Source: *Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.*

4.6 Nutritional Status among Young Children in Ahmedabad

The Integrated Child Development Services (ICDS) Scheme is a program of the Central Government that aims to promote the health and nutrition of children aged 6 months to 6 years. The Anganwadi Center (AWC), analogous to a small pre-school, is the nodal point for the implementation of the ICDS. Anganwadi can be translated to mean "courtyard" and in this courtyard, playful daily activities are offered to children for about three hours a day. Children up to age of six years who belong to underprivileged groups of the society benefit from this program. Along with playful activities, child also enjoys the preparation for primary schooling. Younger siblings too are offered care in this setting because of which their older siblings, especially girls feel motivated to attend schools (Ministry of women and child development, 2009). Nutritional surveillance is an important activity that is undertaken under ICDS. Children under three years of age are weighed once a month and children 3-6 years of age are weighed after every three months. Their weight records are maintained on the 'weight-for-age growth cards'. If children are found to be undernourished, they are provided supplementary feeding and also are referred to medical services in case of severe malnourishment (Ministry of women and child development, 2009). ICDS also provides services to pregnant and lactating women and adolescent girls (ICDS, 2009).

Table 4.9: Nutritional status among children aged 6 months to 6 years and weighed in AWCs of Ahmedabad district (including AMC), 2011-2015

Year	Total child weighed	Moderately underweight	Severely underweight	Total underweight(%)	Total % change from previous year
2010	237648	*	*	48.2	
2011	286625	90877	9847	35.1	13.1
2012	291975	84858	6081	31.2	-3.9
2013	299991	73977	4425	26.1	-5.1
2014	303347	48000	5040	17.5	-8.6
2015	165950	22259	3036	8.7	-8.8

**Figures for moderate and severe underweight unavailable for 2010 because a different classification for underweight was used that year versus 2011-2015. Source: ICDS MPR for 2010 to 2015, provided by GSIDS.*

In this section we use data from the Monthly Program Reports (MPR) of the ICDS for the years 2010 to 2015 (submitted in March 2015) to describe the nutritional status of children of Ahmedabad district who were aged 6 months to 6 years and were weighed at the AWC.

તા.૧૪-૫-૧૩ ના રોજ મુ.આદરોડા, તા બાવળા, જિ.અમદાવાદ ખાતે યોજાયેલા જીલ્લા કક્ષાના કૃષિ મહોત્સવ ના પ્રસંગે બનાવેલા આરોગ્ય અને આઇ.સી.ડી.એસ.ના સ્ટોલની મુલાકાત લેતા પ્રભારી મંત્રી માનનીય આનંદીબેન પટેલ અને માનનીય શિક્ષણ મંત્રી ભુપેન્દ્રસિંહજી ચુડાસ્મા

In 2015, total sanctioned number of AWCs in Ahmedabad district were 3686, all of which were in the operational status. A total of 3673 AWCs reported data to the government, of which one did not provide supplementary nutritional program (SNP). SNP is provided to children below 6 yrs of age, pregnant and nursing mothers, and adolescent girls of lower socioeconomic background with an aim to improve their nutritional status. Anganwadi workers have the responsibility of its implementation (ICDS, Supplimentary nutrition , 2009). Overall about 3 lakh children below the age 6 years were enrolled in AWCs in Ahmedabad district in 2015. Also, about 1 lakh adolescent girls and 58 thousand pregnant and lactating mothers were enrolled. Out of the total enrolled children, 2.3 lakh children were enrolled in SNP. Approximately 83 thousand adolescent girls and 52 thousand pregnant and lactating women were enrolled in SNP.

In 2013, out of about 2.9 lakh children who were weighed, 74% children had weight appropriate for their age. Out of the 26% children, who were underweight, about 5.6% children were severely malnourished. In 2014, the percentage of underweight children was reduced. Out of about 3 lakh children who were weighed, 83% children had normal weight. There was an improvement of about 9% in the nutritional status among children in Ahmedabad district. Although the percentage of undernourished children was less in 2014, percentage of severely undernourished children was high. Out of the 17% children who were underweight, about 9.5% children were severely malnourished.

The graph below (Figure 4.9) shows the talukawise time trends in the proportion of child underweight reported by the ICDS for Ahmedabad district between 2010 and 2015. These

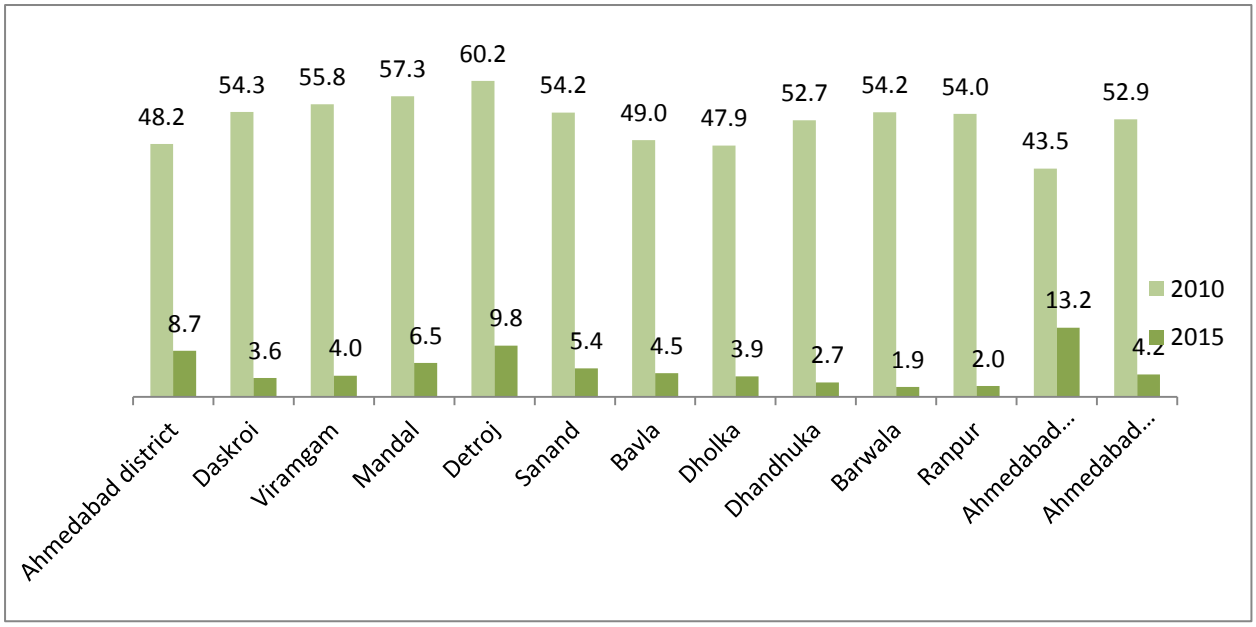
data are from children who were weighed at the AWCs in the district and do not necessarily represent the population of the district. The data used to plot this graph are shown in a table in the Appendix (Table 4.A). A rapid downward trend in the proportion of underweight can be seen during the last five years, falling from 48% in 2010 to 9% as per the March 2015 ICDS Monthly Performance Report (MPR). The difference is even more dramatic if we examine the data for district after excluding Ahmedabad City (Table 4.A). It goes from 53% in 2010 to 4% in March 2015. As is visible in the graph below, there is considerable variation between talukas, however it is the time trend that stands out. The proportion of underweight all the talukas ranged approximately between 40%-60% in 2010, 17%-48% in 2011, ~19%-42% in 2012 and 2013, and then falls to 6%-23% in 2014. One reason that partially explains this dramatic decline is that the 2015 data do not include three under-performing talukas (since they now belong to a different district). Notably, despite this rapid decline, the district still ranks 12th out 26 in the proportion of children who were free of underweight.

If these data capture accurate trends it would be very important to find out how the district was able to achieve such a rapid decline in rates of underweight. However, reports of single digit proportion of underweight from a few talukas such as Barwala and Ranpur (see Table 4.A) which do not perform well on many other indicators raise questions about the representativeness and validity of these data. The last population-based estimate of underweight among children in this age group was from the Rapid Survey on Children: A 2013-14 survey that reported a prevalence of 33.6% for moderate underweight and ~10% for severe underweight among Gujarat's children aged below 6 years (Ministry of Women and Child Development, 2015) . The ICDS MPR data report that about 2% of children aged 6 months of 6 years and weighed at AWCs were underweight in Barwala and Ranpur talukas. These trends beg for a closer scrutiny of the methods used to combat

તા.૨૫/૧૧/૨૦૧૩ ના રોજ મિશન બલમ સુખમ કાર્યક્રમ અતર્ગત બાલશક્તિમ કેન્દ્ર નું આંગણવાડી-કેન્દ્ર-૩/૪ અડવાળ જિ. અમદાવાદ ખાતે કુપોષિત/અતિકુપોષિત બાળકો ને નાસ્તો આપતા તાલુકા હેલ્થ ઓફીસર શ્રી ધંધુકા ડી. ડી.પી પટેલ

underweight in Ahmedabad district as well as the methods used to measure, define, and report underweight in these children.

Figure 4.9: : Proportion (%) of children aged 6 months to 6 years who were weighed at AWCs in Ahmedabad district and found to be underweight



Source: ICDS MPR reports from 2010 to 2015, shared by GSIDS

4.7 Public Health Schemes

The Government of Gujarat has rolled out several health schemes ("yojanas") and programs which aim to promote the health and well-being of the population of the state. A few Gujarat state flagship programs and their performance in Ahmedabad district are discussed below.

4.7.1 Chiranjeevi Yojana

The Chiranjeevi Yojana (CY) introduced in 2006 is focused on providing skilled care by obstetricians at the time of childbirth to poor expectant mothers in Gujarat (Mohanan, 2014). It is based on the principle of partnership with private sector doctors. Many poor women residing in remote villages lack access to reproductive health care. To address this issue, the state government of Gujarat launched the *Chiranjeevi Yojana* program, with the primary aim

of increasing the institutional delivery rates to reduce maternal and infant mortalities (Mohanan, 2014).

Under this scheme, women belonging to socio-economically weaker sections are identified during their antenatal care by Auxiliary Nurse Midwife/Female Health Worker and are given an application form for registration in the scheme. In absence of a Below Poverty Line (BPL) card and tribal certificate, authorization by local recognized authority is also considered adequate. The scheme requires that women approach doctors who are already empaneled under this scheme in order to deliver their baby free of charge. Mothers are also given funds to cover the cost of transportation to the institution.

In Ahmedabad district, about two thousand normal deliveries and 122 cesarean sections were performed in under this scheme in 2013-14. Out of the total 2233 deliveries, 39 cases were complicated. Twenty obstetricians were empaneled under this scheme in 2013-14. In AMC, out of the total 78 thousand deliveries, about 67 thousand deliveries were normal, about 6 thousand were caesarian and about 4 thousand were complicated (Health Statistics , 2013-14). The number of obstetricians enrolled in the program in AMC were 52.

Table 4.10: Number Of Deliveries Under The Chiranjeevi Yojana (CY), Ahmedabad District,2009-10 To 2013-14

Year	Total institutional deliveries	Deliveries under CY	Proportion of CY deliveries of total institutional deliveries	No of doctors enrolled	Total institutional deliveries	Deliveries under CY	Proportion of CY deliveries of total institutional deliveries	Number of doctors enrolled
	Ahmedabad district excluding AMC				For AMC			
2009-10	38572	9359	24.26	106	76844	NA	NA	NA
2010-11	38926	2885	7.41	23	98544	NA	NA	NA
2011-12	39118	3273	8.37	22	99968	5075	5.08	66
2012-13	43050	1166	2.71	20	102225	2741	2.68	54
2013-14	43618	2233	5.12	20	111602	2169	1.94	52

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14

Table 4.10 presents the proportion of total registered births that were delivered through this Yojana (see Table 4.B in the Appendix for taluka-wise distribution). While it seems small—the

figure for Ahmedabad district does not exceed 10% while AMC reports single digit figures and a declining time trend—it must be noted that the comparison is with all registered births and not all births among low-income women who form the target group for this scheme. It would be useful if the government could include an estimate of the size of the target population when it reports the performance of such schemes.

Ahmedabad lags behind other districts when it comes to enrolling doctors in this scheme: Junagadh, Mehsana and Panchmals districts had more obstetricians enrolled under Chiranjeevi Yojana in 2013-14 than Ahmedabad. Obstetrician to patient ratio is one of the most critical indicator that may determine the success of this scheme. Encouraging them to enroll in this scheme while encouraging women to opt for institutionalized deliveries may improve the performance of Chiranjeevi Yojana in Ahmedabad district.

A recent impact evaluation that used appropriate statistical methods found that there was no evidence linking the program to changes in the likelihood that a mother will have an institutional delivery (including at private hospitals) or to the amount of money spent by households on delivery expenses (Mohanan, 2014). Urgent efforts need to be directed towards investigating ways to improve the impact of this program.

4.7.2 Bal Sakha Yojana

The Bal Sakha program is a state initiative which aims to provide expert neonatal care by a pediatrician to all babies born to Below Poverty Line (BPL) mothers and tribal mothers. Another example of the government partnering with private physicians, this program covers neonatal care including care in private Neonatal Intensive Care Units (NICU) at no cost to the beneficiary (National Rural Health Mission (NRHM), 2014). As shown in Table 4.11, about two

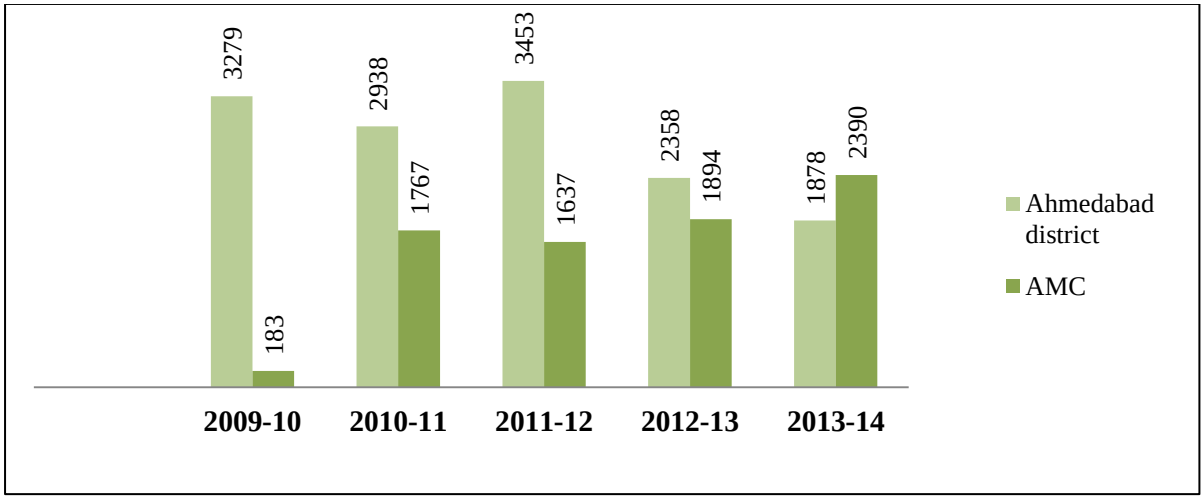
thousand newborns were attended under this scheme at the district level. About 400 newborns were admitted and treated in NICU-2 and 24 of them were further referred to NICU-3. The number of doctors who attended the newborns under this scheme was more in 2012-13 (11) as compared to 2013-14 (8) in Ahmedabad district (Health Statistics , 2013-14). In AMC, out of about 2 thousand newborns attended under this scheme, 96 were referred to NICU-2 and 39 were referred to NICU-3 (Health Statistics , 2013-14). Total 20 doctors had enrolled in this scheme in AMC (Health Statistics , 2013-14). The time trend between 2009-10 and 2013-14 suggests that over time greater number of newborns were covered under this scheme in AMC while the pattern was reverse in Ahmedabad district (Figure 4.10). However, analyzing the number of newborns attended under BSY does not tell us anything about how well the scheme is meeting the goal of providing expert pediatric care to BPL and tribal babies because we are unable to compare the number who received services with the total target (we do not have a sense of the size of the target population).

Table 4.11: Performance of Ahmedabad district and Gujarat in Bal Sakha Yojana 2013-14

Neonates admission details			**Doctor**
Total newborn attended under BSY	**No of neonates admitted and treated to NICU2**	**No of neonates referred to NICU3**	
Ahmedabad district (excluding AMC)			
1878	429	24	8
AMC			
2390	96	39	20
Gujarat			
Not available	NA	NA	NA

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14.

Figure 4.10: Total Newborns Attended under Bal Sakha Yojana



4.7.3 School health check-up program in Ahmedabad district

In this program, all health responsibilities for children under 14 years of age are fulfilled by the state health department (Education Department, 2007-08). Children suffering from diseases such as anemia, heart disease, kidney ailments and cancer and other serious diseases are given treatment in the state as well as the hospitals outside the state free of charge. In 2013-14, about 4.4 lakh children were checked in school health program in Ahmedabad, out of which about 34 thousand children were treated on the spot (about 7%) and about 3 thousand children were referred for further treatment. About 5 thousand children were provided free spectacles (Health Statistics , 2013-14). Out of the total children who received referral services, about one hundred children were treated by a pediatrician, about one thousand were treated by an ophthalmic surgeon, 426 were treated by dentists, 324 were treated by skin specialists and 332 were treated by ENT surgeons (Health statistics , 2010-11). As shown in Table 4.12, in AMC, about 10 lakh children were checked in school health program (Health Statistics , 2013-14). About 13% of these children were treated on spot and about 25 thousand were referred to a specialist. About 27 thousand children received spectacles through this scheme (Health Statistics , 2013-14).

Table 4.12: School Health checkup program at glance, 2013-14

Children examined	Treated on the spot	Children identified for referral	Children provided referral services	Children provided free spectacles	
For Ahmedabad district (excluding AMC)					
444817	34179	3212	3212	5038	
For AMC					
1073143	129748	25424	25424	27765	
Referral services provided under school health program, 2013-14					
Pediatrician	Ophthalmic surgeon	Dental specialist	Skin specialist	ENT surgeon	Others
For Ahmedabad district (excluding AMC)					
829	1126	426	324	332	175
For AMC					
7557	3786	6373	5151	2557	0
Children treated by diseases under school health program, 2013-14					
Anemia	Worm infestation	Ear discharge	Skin disease	Vision problem	Dental problem
For Ahmedabad district (excluding AMC)					
9806	10006	1948	1726	2958	2967
For AMC					
81035	16586	2409	12671	27233	10071

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14.

In Ahmedabad district (excluding AMC), most children suffered from worm infestation (about 10 thousand) followed by anemia (about 9 thousand). In AMC, anemia was most prevalent followed by vision problems and worm infestation (Health Statistics (2013-14).

If diagnosed in time, all of these health ailments are easily curable. This scheme is aimed at reducing child morbidities through effective team work and timely management of detected cases. A large number of children have been receiving benefits of this scheme.

4.8 Disease Profile of the District

In addition to data on service provision and service uptake, information on occurrence of specific health problems can help paint a comprehensive picture of the health in Ahmedabad district. Findings indicate that Ahmedabad district carries a huge burden of infectious diseases many of which are caused by risky behaviors such as poor hygiene practices and lack of cleanliness of the surroundings, thus suggesting that these morbidities are preventable. Effective health education and behavior change programs implemented by trained healthcare professionals may help to reduce the risks of disease occurrence.

4.8.1 Vector Borne Diseases: Dengue

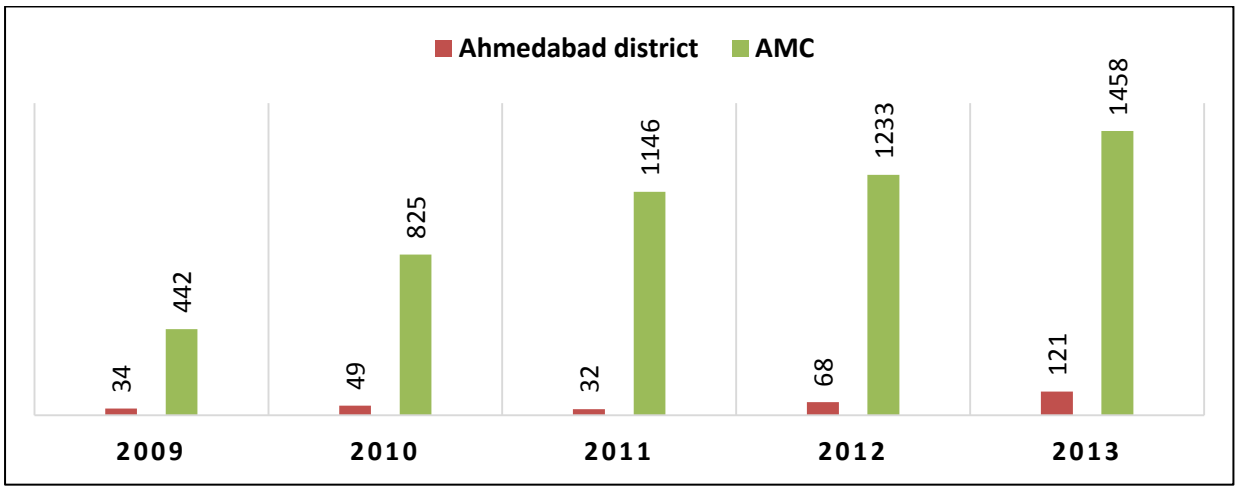
Table 4.13: Reported Dengue/Dengue Hemorrhagic Fever cases in 2012 and 2013, Ahmedabad district

2012			2013		
Ahmedabad district (excluding AMC)					
SST	Case	Death	SST	case	Death
365	68	0	582	121	
AMC					
7323	1233	1	10188	1458	4

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14.

In 2012, there were 68 cases of dengue of the 365 samples tested in Ahmedabad district (excluding AMC) and 1233 cases of dengue of 7323 samples tested in AMC. While the number of cases increased drastically in 2013 so did the number of samples tested. As shown in Table 4.13, in 2013, there were 121 cases of dengue out of 582 samples tested in Ahmedabad district and 1458 out of 10188 samples tested in AMC (Health Statistics , 2013-14). Amreli and Surendranagar districts too reported large number of cases of dengue in 2013 (Health Statistics , 2013-14). In 2011 and 2012, the number of dengue cases reported in Ahmedabad was 32 and 70, respectively (Health Statistics, 2012-13). In 2013, four people died due to dengue in AMC (Health Statistics , 2013-14).

Figure 4.11: Number of dengue cases diagnosed in Ahmedabad district between 2009 and 2013



The number of cases of dengue diagnosed has been increasing in both Ahmedabad district (excluding AMC) and in AMC. One reason for this could be that reporting of cases improved with time. Please note that these pattern is not informative because we do not know the sizes of the population in which these cases occurred.

While these numbers are likely to reflect under reporting, and do not represent the population-based incidence of dengue, one explanation for the increase in the number of samples tested is that the impact of dengue on people's lives is increasing over time. The government has taken steps to educate people about vector control. However, the numbers suggest that greater, and possibly more innovative efforts are required to combat this infectious disease. In addition to personal protection from mosquito bites, other strategies such as environmental control of mosquitoes using safe insecticides could be explored.

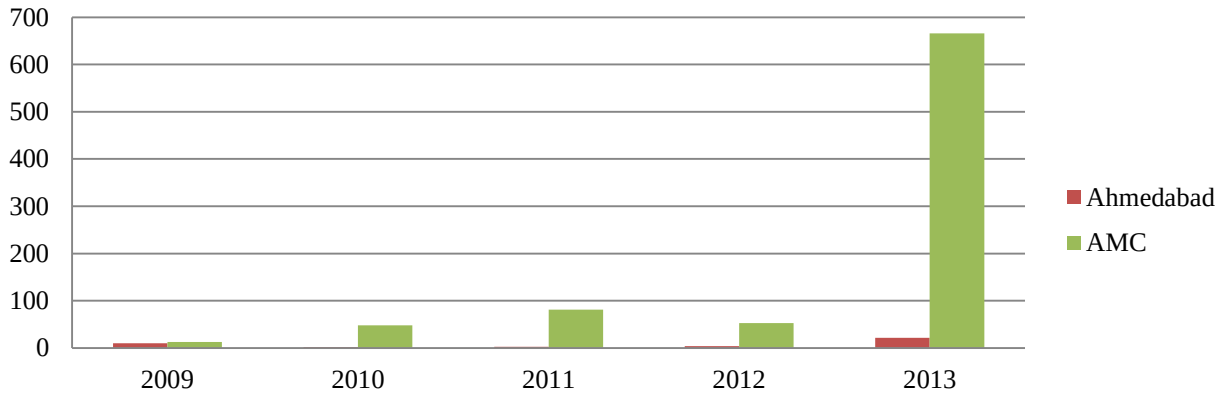
Chikungunya

Table 4.14: Reported cases of Chikungunya fever in Ahmedabad district, 2011 to 2013

2011			2012			2013		
Ahmedabad district (Excluding AMC)								
Suspected cases	Sample cases	Confirmed cases	Suspected cases	Sample cases	Confirmed cases	Suspected cases	Sample cases	Confirmed cases
13	13	3	10	10	4	66	66	22
AMC								
176	176	81	211	211	53	1964	1964	666

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14.

Figure 4.12: Number of chikungunya cases diagnosed in Ahmedabad district between 2009 and 2013



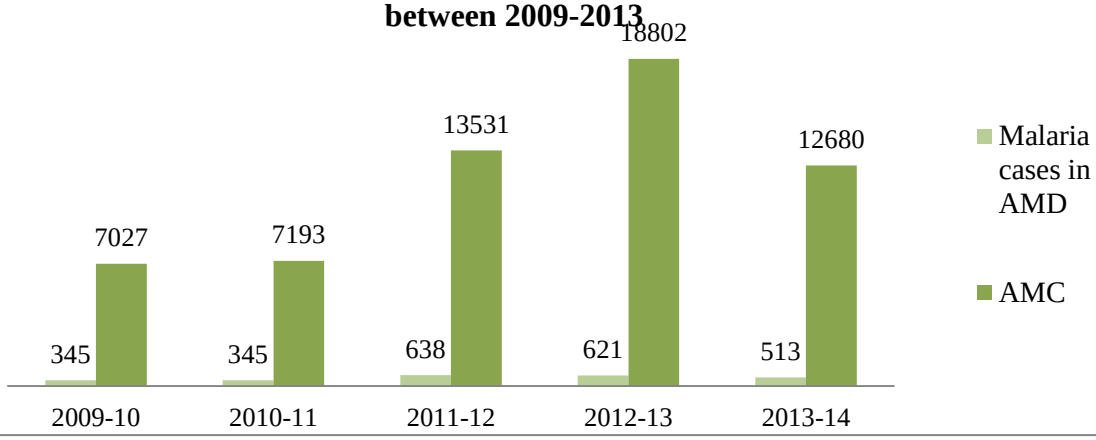
As shown in table 4.14 (and Figure 4.12), the number of detected (and reported) chikungunya cases has been increasing, both in Ahmedabad district (excluding AMC) and AMC. In 2013, there were 22 confirmed cases (out of 66 suspected cases) of chikungunya in Ahmedabad district and 666 confirmed cases (out of 1964 suspected cases) in AMC (Health Statistics , 2013-14). There appears to have been an epidemic of chikungunya in AMC in 2013. Similar to the pattern seen with dengue, it is possible that better reporting over time contributed to this pattern. However, the increase over time in the proportion of cases confirmed among all suspected cases suggests that there is a bigger impact of this debilitating disease in Ahmedabad district. The impact could be in terms of more people getting infected, or tested, or both. The best way to prevent chikungunya is to control mosquitoes and also to use the

mosquito nets. AMC reported the highest number of chikungunya cases in 2013, followed by Rajkot AMC and Surendranagar (Health Statistics , 2013-14). Again, these numbers do not represent population-based incidence of chikungunya.

Malaria

As shown in Table 4.15, malaria cases too were reportedly high (1614 PF cases and 8582 PV cases, 8% of all reported fever cases) in 2013 in AMC (Health Statistics , 2013-14). There were total 1.2 lakh cases of fever in the AMC. In Ahmedabad district, about 12 thousand fever cases (5% of all reported fever cases) were reported under the Integrated Disease Surveillance program (IDSP) in 2013 (Health Statistics , 2013-14). In Ahmedabad district (excluding AMC) too, Malaria PV cases were large in number. There were about 600 malaria PV cases and 48 malarial PF cases in 2013 (Health Statistics , 2013-14).

Figure 4.13: Number of malaria cases reported in Ahmedabad district between 2009-2013



Surat city reported the highest number of malaria cases in 2013 whereas Junagadh city reported the lowest number of malaria cases (Health Statistics , 2013-14). The number of cases of malaria in AMC has increased since 2011-12, with a spike in 2012 (Figure 4.13). Malaria too is a mosquito borne infection which is easily preventable by using mosquito repellents and bed nets. The table below shows the availability of insecticide treated mosquito nets in the district.

Use of Insecticide Treated Mosquito Nets

Table 4.15: Insecticide treated mosquito nets, 2012-13 in Ahmedabad

Nets		
Available	**Treated**	**%**
77579	77579	100

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2012-13.

તા.૭-૯-૨૦૧૩ ના રોજ મુ.બગોદરા, તા. બાવળા, જિ.અમદાવાદ ખાતે માનવસેવા ટ્રસ્ટ દ્વારા અને તાલુકા હેલ્થ ઓફિસ બાવળા દ્વારા સર્ગભા માતાઓને વિના મૂલ્યે દવાવાળી મચ્છરદાની વિતરણ સમારંભમાં સર્ગભા માતાને દવાવાળી મચ્છરદાનીનું વિતરણ કરી રહેલા રાજ્યના શિક્ષણમંત્રીશ્રી ભુપેન્દ્રસિંહજી ચુડાસ્મા

Use of insecticide treated mosquito nets is one of the effective techniques to prevent the vector borne disease spread by mosquitoes. In 2012-13, total 77 thousand nets were available and 100% were treated by insecticide (Table 4.16). Ahmedabad district performed well in providing insecticide treated nets as compared to many other districts in Gujarat. At the state level, about 88% available nets were treated by insecticide (Health Statistics, 2012-13).

4.8.2 Water Borne infections in Ahmedabad

Although the mortality was reported to be nil, the burden of water borne infections in Ahmedabad district was high. As shown in Table 4.17, in 2013, about 12 thousand cases of gastroenteritis, 36 cases of viral hepatitis, 251 cases of typhoid fever and 2 cases of cholera were reported in Ahmedabad district (excluding AMC) (Health Statistics , 2013-14). In AMC, the burden of water borne diseases was much higher. About 46 thousand cases of gastroenteritis, 3 thousand cases of viral hepatitis and typhoid fever and 297 cases of cholera were reported in AMC (Health Statistics , 2013-14).

Table 4.16: Cases of water borne infections reported in 2013, Ahmedabad District

Ahmedabad district (excluding AMC)							
Gastroenteritis		Viral hepatitis		Typhoid fever		Cholera	
Cases	Deaths	Cases	Deaths	cases	Deaths	cases	deaths
12047	0	36	0	251	0	2	0
AMC							
46572	0	3051	0	3277	0	297	0

Source: Health Statistics, IDSP, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14.

Table 4.17 Cases of water borne infections in Ahmedabad district , 2009 to 2013

Ahmedabad district (excluding AMC)	**2009**	**2010**	**2011**	**2012**	**2013**
Cholera	2	3	0	3	2
Enteric fever	504	301	334	307	251
Viral hepatitis	207	61	287	115	36
Gastroenteritis	6616	15084	12435	11297	12047
AMC	**2009**	**2010**	**2011**	**2012**	**2013**
Cholera	36	155	28	199	297
Enteric fever	2384	3152	3481	2840	3277
Viral hepatitis	2667	4486	13626	5874	3051
Gastroenteritis	13939	46561	44517	44206	46572

***Source**: Health Statistics, IDSP, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.*

The burden of cholera was huge in AMC. There were 297 reported cases of cholera in 2013, whereas in Ahmedabad district (excluding AMC), the number was 2 (Health Statistics , 2013-14). Surat city was a distant second in the number of cholera cases reported with 60 cases in 2013. All other municipalities in Gujarat reported less than 6 cases in the same year.

Time trends over the 2009-2013 period (Table 4.17) show that there is a jump in the number of gastro-enteritis cases reported in the post-2009 period. However, the number of cases stays almost the same between 2010 and 2013. There appears to have been an epidemic of viral hepatitis in AMC in 2011. The other numbers appear to be more or less similar over time. These “trends” are not very informative since we do not have a good estimate of the size of the population in which these cases occurred.

These numbers show the need for ensuring that the population of the district has access to treated and safe drinking water and safe and hygienic sanitation facilities. This correlates with

our analysis on access to safe drinking water and sanitation in the district (see the chapter on livelihoods). Such high numbers of infectious diseases poses high burden on the public health infrastructure and functionaries in the state.

Acute Diarrheal Diseases and Bacillary Dysentery

The Integrated Disease Surveillance Project helps to detect and respond to disease outbreaks quickly (Integrated Disease Surveillance Project, 2015). In Ahmedabad district (excluding AMC), about 12 thousand cases of acute diarrheal disease were reported (Tables 18). The number was larger for AMC. About 46 thousand cases of acute diarrheal disease were reported in AMC in 2013 (Health Statistics , 2013-14). As shown in Table 4.18, there were 199 bacillary dysentery cases; and in Table 4.19, 36 acute viral hepatitis cases and 521 enteric (typhoid) fever cases reported in Ahmedabad district. In AMC, the number of cases reported for these three diseases were 1903, 3051 and 3277, respectively (Health Statistics , 2013-14).

Table 4.18: Cases Of Bacillary Dysentery Reported Under Integrated Disease Surveillance Project In Ahmedabad District Between January And December 2013

Acute diarrheal diseases	Bacillary dysentery
For Ahmedabad district (excluding AMC)	
12047	199
AMC	
46572	1903

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14.

4.8.3 Diphtheria, Measles, Neonatal tetanus, Pertusis and Acute Flaccid Paralysis

Table 4.19: Number of cases of diphtheria, neonatal tetanus, pertussis and AFP reported in Ahmedabad district (Jan to Dec 2013)

Diphtheria cases	Measles cases	Neonatal tetanus cases	Pertusis cases	Acute flaccid paralysis cases
For Ahmedabad district (excluding AMC)				
5	1	1	0	8
AMC				
30	143	4	1	78

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2013-14.

Despite efforts to prevent these diseases by effective immunization, 5 cases of diphtheria, 1 case of measles and 1 case of neonatal tetanus were reported in the district in 2013 (Health Statistics , 2013-14). The situation appears to have improved compared to the outbreaks of measles in 2009 and 2011(Table 4.21). While there no cases of pertussis reported, Acute Flaccid Paralysis (AFP) was reported in 8 children in 2013. In Ahmedabad city, measles was rampant with 143 cases reported in 2013. Other than what appears to have been an epidemic of measles in 2011, the number of measles cases were higher in 2013 compared to 2012. Diphtheria too was reported (30 cases), as were 78 cases of acute flaccid paralysis in Ahmedabad city in 2013 (Table 4.20) (Health Statistics , 2013-14). While the number of cases of diphtheria reported in the city has been decreasing over time, the number of AFP cases in 2013 is much higher than the numbers reported in the 2009-2012 period.

Table 4.20: Number of cases of diphtheria, measles, neonatal tetanus, pertussis and AFP reported in Ahmedabad between 2009 and 2013

Ahmedabad district (excluding AMC)	2009	2010	2011	2012	2013
Diphtheria	4	2	7	2	5
Measles	16	1	22	1	1
Neonatal tetanus	0	0	2	2	8
Pertussis	0	0	0	0	1
Acute Flaccid Paralysis	20	10	12	7	0
AMC	**2009**	**2010**	**2011**	**2012**	**2013**
Diphtheria	114	114	44	49	30
Measles	127	99	281	73	143
Neonatal tetanus	4	0	0	4	4
Pertussis	8	6	0	33	1
Acute Flaccid Paralysis	41	33	13	39	78

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2009-10 to 2013-14.

It is disappointing to see reports of neonatal tetanus when India has recently been declared to have eliminated maternal and neonatal tetanus. This is especially disturbing when correlated with the less-than-ideal coverage rates of tetanus toxoid immunization among expectant mothers. Because these data are from 2013, our hope is that more recent data will paint a better picture.

4.9 Public Health Infrastructure Facility

Public health infrastructure typically refers to the facilities and staff of the public health system which supports its functions. The infrastructure includes public healthcare institutions and health education institutions. A 2006 report suggests that in India the percentage of spending on health as part of the entire GDP was 0.9% by the public sector and 4.2% by the private sector (Economic Research Foundation, 2006). The same report found that in Gujarat, only 15.8% of the per capita health expenditure was by the public sector in 2004-05, which was less as compared to national level per capita health expenditure by public sector (22%) (Economic Research Foundation, 2006). The draft national health policy has reported that while the total health spending in India continued to be about 4% of the GDP the Indian

government's health spending increased to 1.04% of the GDP in 2011 (Ministry of Health and Family Welfare, 2014)

Rural healthcare system of the Government of India is a three tier system. The sub-centre is the most peripheral and first contact point between the primary health care system and community members. Sub-centres are established in order to improve the interpersonal communication for health education, to promote behavioral change and to provide some of the basic health services (Indian Public Health Standards, 2013). As per the standard norms, there should be one sub-centre per every 5000 population in plain areas and per 3000 population in hilly/tribal areas. Services such as antenatal care, essential child care, postnatal care, adolescent healthcare, contraception and water-sanitation need to be provided by sub-centres (NRHM, 2013).

The Primary Health Center (PHC) is the first contact point between the village community and a medical officer. PHCs are the first referral units and are established to provide curative and preventive health care to the rural population with emphasis on preventive practices and to promote healthy behaviors. The PHC is considered as the back-bone of the rural health care system in India and covers a population of 20,000 in hilly, tribal, or difficult areas and 30,000 populations in plain areas with 6 indoor/observation beds. It is the first referral unit for 6 Sub-Centres and refers out cases to Community Health Centres (CHC) (30 bedded hospital) and higher order public hospitals located at sub-district and district level (National Rural Health Mission (NRHM), 2012). The CHC is a 30 bedded hospital. It is a second referral unit for 4 PHCs. CHCs haves specialized healthcare services (Indian Public Health Standards, 2013). Each CHC caters to approximately 80,000 populations in tribal/hilly/desert areas and 1,20,000 population for plain areas. A CHC provides specialist care in medicine, obstetrics and gynecology, surgery, paediatrics, dental and AYUSH. Table 4.21 shows the number of sub-centers, PHCs and CHCs in Ahmedabad district in 2012-13.

Table 4.21: The number of public health care facilities in Ahmedabad district in 2012-13

District/taluka	SCs	PHCs	CHCs	MC
Ahmedabad district	238	43	12	5
Talukas				
Daskroi	46	7	2	0
Viramgam	23	4	1	0
Mandal	14	3	1	0
Detroj	18	3	1	0
Sanand	34	6	1	0
Bavla	21	4	2	0
Dholka	31	6	1	0
Dhandhuka	27	4	1	0

Source: Compiled from the data of CDHO, Commissionerate of Health, Medical Services, Medical Education and Research, Gandhinagar

SCs	*Sub Centres*
PHCs	*Primary Health Centres*
CHCs	*Community Health Centres*
MC	*Medical Colleges*

4.9.1 Population Served By Public Health System

The average patient load handled by the public health system is shown in Table 4.22. This was calculated by dividing the number of health centers by the rural population of that taluka since these centers are meant to serve people residing in villages.

As shown in Table 4.22, at the taluka level, Daskroi had the highest number of sub-centres (46) whereas Mandal had the lowest (14). Daskroi had the highest number (7) of PHCs as well. Except Daskroi and Bavla, where there are 2 CHCs each, all other talukas in Ahmedabad had one CHC in 2013-14.

The average population served by CHCs is high in Sanand, Dholka, and Viramgam indicating the need to strengthen the capacity of these CHCs.

Table 4.22: Taluka wise average population served by SCs, PHCs & CHCs , 2013-14

Sr. No.	Talukas	SCs	PHCs	CHCs
1	Daskroi	4061	26683	93391
2	Viramgam	5977	34366	137462
3	Mandal	5025	23448	70346
4	Detroj	4622	27733	83199
5	Sanand	4175	23659	141955
6	Bavla	5511	28933	57867
7	Dholka	5449	28151	168907
8	Dhandhuka	4177	28194	112777
9	Barwala	4836	19345	58035
10	Ranpur	6332	25327	75982
District average		4274	23655	84763

Source: Calculated by dividing the rural population of that taluka by the number of health facilities using data from the Census & Commissionerate of Health, Medical Services, Medical Education and Research, Gujarat

In Daskroi, which has the highest number of sub-centres, about four thousand persons were served in 2013-14. The highest number of patients was served at Ranpur sub-centre in 2013-14. Although Mandal has the lowest number of sub-centres, the number of patients served is quite large, with an average about 5000 in 2013-14. The four PHCs in Viramgam served the highest number of patients: about 48 thousand patients in 2013-14.

In general, the average population served by the public health centers in Ahmedabad district met the Government of India norms, except for the CHCs in Sanand, Dholka and Viramgam which are overburdened. New CHC at Bagodra near to Dholka has been opened very recently, hence it is expected that it may reduced the excess pressure of CHC of Dholka taluka.

Health Personnel at CHCs

Availability of the healthcare facility and infrastructure needs to be accompanied by the availability of healthcare professionals and this in turn depends upon whether the posts get sanctioned and once sanctioned, whether the posts get filled. Availability of the healthcare professionals looks highly uneven if we compare the population served by each CHC. Most of the posts are not sanctioned, but even after they are sanctioned, many are not filled up. For instance, in 2013, in Ghuma (Daskroi), Bavla and Dhandhuka CHCs, the sanctioned post for the gynecologist remained unfilled. Most of the posts for general surgeons, physicians and pediatricians remained unsanctioned in 2013. There is only one general surgeon and not a

single physician or pediatrician in any of the CHCs in the entire district. Out of the total 38 sanctioned posts for medical officers in Ahmedabad district, 29 were filled. At the CHC at Ghuma (Daskroi), Barwala and Ranpur, out of the three sanctioned posts for medical officers only one was filled at each CHC (Table 4.24).

This suggests that residents of a few talukas might have to depend on the services available from referral institutions located at some distance from them or on the private institutions. Given that a majority of rural residents already seek healthcare from private players, such inadequacies do not paint a favorable picture of the public health system in the district.

Table 4.23 : Health Personnel At CHCs In The Talukas Of Ahmedabad District (2013)

Taluka	CHC	General Surgeon		Physician		Gynaecologist		Paediatrician		Medical Officer (MBBS)	
		S	F	S	F	S	F	S	F	S	F
Daskroi	Ghuma	0	0	0	0	1	0	0	0	3	1
Daskroi	Singarva	0	0	0	0	1	1	0	0	3	3
Viramgam	Viramgam	0	0	0	0	1	1	0	0	4	4
Mandal	Mandal	0	0	0	0	0	0	0	0	3	2
Detroj	Detroj	1	1	0	0	0	0	0	0	3	3
Sanand	Sanand	0	0	0	0	1	1	0	0	3	3
Bavla	Bavla	0	0	0	0	1	0	0	0	3	3
Bavla	Bagodara	0	0	0	0	0	0	0	0	3	2
Dholka	Dholka	0	0	0	0	0	0	0	0	3	3
Dhandhuka	Dhandhuka	0	0	0	0	1	0	0	0	4	3
Barwala	Barwala	0	0	0	0	0	0	0	0	3	1
Ranpur	Ranpur	0	0	0	0	0	0	0	0	3	1
Dist. Total		1	1	0	0	6	3	0	0	38	29

Source: Calculated from the data of Census & Commissionerate of Health, Medical Services, Medical Education and Research, Gujarat

S= Sanctioned
F= Filled

4.9.2 Inpatients and Outpatients seen in public health centers of Ahmedabad district

The data on number of inpatients and outpatients at PHCs and CHCs gives an idea of the workload the local public health systems carry (Table 4.25). This however does not shed any light on the health of the population of Ahmedabad district. Specialty service availability at the district level Civil Hospital might be one of the reasons for the increased number of patients at the Civil Hospital. Effective implementation of prevention programs and strengthening of the first and second referral units might reduce the burden on district civil hospitals.

Table 4.24: Number of patients seen in government health facilities of Ahmedabad District, 2013-14

TYPE	PHC	CHC	SUB DISTRICT/ DISTRICT+ CIVIL HOSPITAL	TOTAL
Inpatients	15011	46920	399701	461632
Outpatients	414583	309006	2299519	3023108

Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research; Government of Gujarat, 2012-13

4.9.3 Medical Colleges in the District

As per the report by Commissionerate of health, there are five medical colleges in Ahmedabad district (Health and Family Welfare Department, 2015). They are:

1. B.J. Medical College, Ahmedabad
2. Medical College, Sola, Ahmedabad
3. N.H.L. Municipal Medical College, Ahmedabad.
4. A.M.C. Medical Education Trust Medical College, Ahmedabad
5. Gujarat Cancer Society Medical College, Ahmedabad

B.J.Medical college has about 250 MBBS seats, whereas Medical college, Sola; N.H.L Municipal Medical College; and A.M.C Medical college have 150 seats each. A.M.C. medical college is a municipal medical college in Ahmedabad. Gujarat Cancer Society Medical College is a private medical college that has 150 seats.

4.9.4 Seeking care from Ayurvedic and Homeopathy practitioners

The number of patients seen in the Ayurvedic and Homeopathic dispensaries in the district appears to be increasing over time. Compared to 2010-11, the number of patients served at Homeopathic OPD has been increased by 164% in 2014-15.

Table 4.25: Number of outpatients served in Ayurvedic and Homeopathy dispensaries in Ahmedabad district (2010-2015)

Year	Government Ayurveda Dispensaries	Government Homoeopathy Dispensaries
2010-2011	172910	55050
2011-2012	189696	89446
2012-2013	188418	135568
2013-2014	182110	150799
2014-2015	174578	145367

In 2014-15, a total of about 1.4 lakh outpatients were served at Homeopathic dispensaries and about 1.7 lakh patients were served at Ayurvedic dispensaries (Table 4.26). As compared to 2010-11, there was a 9.7% increase in the number of patients served at Ayurvedic dispensaries. In Ahmedabad city, there are about 12 Ayurvedic and Homeopathic dispensaries each. Except Barvala, each taluka has at least one Homeopathic or Ayurvedic dispensary OPD (Table 4.26).

4.10 Health Insurance Schemes

Gujarat has implemented a few innovative health insurance schemes. Here we discuss two of them: Mukhyamantri Amrutam and Rashtriya Swasthya Bima Yojana.

4.10.1 Mukhyamantri Amrutam (MA) & MA Vatsalya Yojana

On 4th September 2012, the Gujarat Government launched a medical care scheme focused on provision of tertiary care treatment related to several non-communicable diseases. This scheme, called *Mukhyamantri Amrutam* (*MA*) *Yojana,* was meant to support persons classified as below Poverty Line (BPL). Based on the success of *MA Yojana* and encouraging feedback from various stakeholders, on 15th August 2014, the *MA* schemes was extended to

all families with an annual income of Rs. 1.20 lakh or less, under the name "*Mukhyamantri Amrutam Vatsalya*" *Yojana*.

The *MA Vatsalya Yojana* provides tertiary care treatment to all beneficiaries for illnesses that typically have a catastrophic effect on families. The illnesses covered are those related to: cardiovascular diseases, kidney diseases, neurological diseases, burns, poly-trauma, cancers, and neo-natal (newborn) diseases. The scheme provides cashless medical and surgical care (544 surgeries eligible) along with their follow-ups with a sum assurance of Rs. 2,00,000/- per family per annum on a family floater basis.

The total number of Ahmedabad district families enrolled under *MA* and *MA Vatsalya Yojana* was 2.28 lakh as of 20th March, 2016. The number and amount of claims respectively, cleared under these schemes in 2013-14 were 3,404 and 7.07 crores, in 2014-15 were 3,990 and 7.88 crores and in 2015-16 were 12,494 and 22.16 crores.

4.10.2 Rashtriya Swasthya Bima Yojana-Gujarat

Rashtriya Swasthya Bima Yojna (RSBY) provides health insurance coverage for families Below Poverty Line (BPL) in urban and rural areas, railway porters, MGNREGA (Above Poverty Line) workers (who have worked for at least 15 days) and building and other construction workers. This scheme offers them coverage for the primary and secondary treatment of illnesses, thus providing freedom from the vicious cycle of indebtedness due to the high costs of unexpected medical care. The scheme covers up to 5 members per BPL family (head of the family, spouse and 3 dependents). Each of the enrolled BPL families is provided with health insurance coverage of Rs 30,000/- per annum, on a family floater basis. Pre-existing conditions are covered from day one and there is no age limit. The total number of families enrolled under RSBY scheme is 1,12,320**.** The number and amount of claims respectively, cleared under this scheme in 2013-14 were 4,329 and 3.07 crores, in 2014-15 were 3,754 and 2.88 crores, and in 2015-16 were 3,208 and 2.36 crores.

4.11 Success Stories

4.11.1 The Pre-conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994 Act - Beti Bachao-Beti Vadhaao' program:

To reduce the practices of sex-selective abortion or female foeticide in the country, the Government of India enacted the "Pre-conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act, 1994". In Gujarat, this act has been implemented since 1996. The 'Beti Bachao-Beti Vadhaao' program of the Health Department was initiated in Gujarat with an aim to boost the effective implementation of this act. The sex ratio at birth for Gujarat (number of girls for 1000 boys) was 837 in 2001 which increased to 909 in 2011 (better than the all-India ratio of 906), suggesting more effective implementation of the PC & PNDT Act in the State.

Sex ratio among children aged 0 to 6 years has increased in the 2001-2011 period in both the state as well as Ahmedabad district. Notably, the district reports sex ratios lower than those for Gujarat state. While the sex ratio (0-6 years) for Gujarat increased from 883 in 2001 to 890 in 2011 as per the Census, the sex ratio (0-6 years) in Ahmedabad district increased from 835 in 2001 to 857 in 2011. However, the increasing trend in sex ratio at birth (for the state) and sex ratio among 0-6 years old children in the district and state suggests that the problem of adverse sex ratio of Ahmedabad district and entire Gujarat can be eventually be overcome. Innovative programs such as *Beti Bachao-Beti Vadhaao* as well as more intensive implementation of the PC & PNDT Act are likely to help meet this goal. The success story included here describes an instance of the powerful impact of *Beti Bachao-Beti Vadhaao.*

Beti Vadhavo Andolan

The declining sex ratio is a serious problem in India including Gujarat. In fact, according to the Census 2011 report, child sex ratio at 890 in Gujarat is below the national average of 914. Child sex ratio for Ahmedabad district is 904 (Census 2011), putting it at the bottom two amongst the 26 districts of Gujarat. The challenge of improving sex ratio was taken up by the government in campaign mode in the form of Beti Vadhavo Andolan. This involved actions from civil society as well. Preference for male child and discrimination against girl child makes celebration of birth of a girl child in the family a rare event. On 23rd November, 2011 an

exception was observed when Hiralben Upendra Pancholi of Trent village, Mandal taluka, Ahmedabad district gave birth to a baby girl and the event was celebrated by her family by firing crackers in their compound and distributing sweets to neighbors and relatives. Such a gesture of wholeheartedly welcoming the birth of a girl child has the potential to set an example and leave its impact on our society in making it more receptive towards the birth of a baby girl. This story was reported by the Block Health Office, Viramgam, Ahmedabad District.

4.11.2 Successful completion of Directly Observed Treatment Short course (DOTS) Category IV treatment for Multi Drug Resistant (MDR) TB

Ensuring that patients maintaining adherence to longer regimens of TB treatment poses a great challenge to health workers providing DOTS. Successful completion of DOTS requires high levels of motivation from both, the health worker and the patient. The case of Kaliben Bhalabhai Rabari, a native of Shobhasan village of Bhoyani subcenter, Katosan Road PHC, Detroj Taluka, Ahmedabad district depicts how such a challenge was overcome by the untiring efforts of the health team of Katosan Road PHC and especially ASHA worker Bhavnaben Thakor.

Kaliben was detected as a case of active pulmonary TB and was put on Category One of DOTS regimen on May 31st, 2010. Despite losing her husband to TB eight years earlier, she was not interested in taking DOTS medicines because of the minor side effects she was experiencing from ingesting the medicines. With the continuous effort of the health team and repeated counseling she completed Category One DOTS therapy. However, she was still sputum positive for tubercle bacilli at the end of the treatment. A culture sensitivity test was then performed which turned positive and she was diagnosed as a case of Multi Drug Resistant Tuberculosis on February 23rd, 2011. For the health team it was a great challenge to convince Kaliben to start another one and a half year regime of DOTS PLUS, Category Four, which includes a daily dose of injectable medicine as well. The health team, including ASHA worker Bhavnaben Thakor, Health Worker Navinbhai and the District DOTS PLUS supervisor, tried very hard to counsel and convince Kaliben to take medicines, but they were unsuccessful. She replied strongly in negative terms declaring that she did not care even if she died but that she would never ever take the medicines. But the team was determined to save Kaliben,

a 43 year old widowed mother of an adolescent girl. With the help of her relatives they convinced her to start the medication regimen. She was admitted to the Civil Hospital, Ahmedabad where the DOTS PLUS treatment was initiated for one week under the supervision of expert physicians.

The next challenge for the team was to keep Kaliben motivated enough to take the injections and medications until the entire treatment regimen was completed. Recognizing how indispensable the commitment and efforts from the field level health staff were, the DOTS PLUS supervisor and the Medical Officer took the time to provide them elaborate explanations and motivated them. ASHA worker Bhavnaben and the Field Health Worker took up the challenge and started administering oral and injectable medicines in the presence of the supervisor and the Medical Officer. The Field Health Worker scheduled daily visits to see Kaliben and gave her the prescribed dose of injectable medicines before going to any other field visit. Bhavnaben would also make sure that Kaliben swallowed the prescribed pills every day in her presence.

Everything went well for about 12-15 days when again Kaliben refused to take medicines because of their side effects. Bhavnaben tried to convince her with the help of the Medical Officer and somehow prevented her from dropping out. After one month of incessant efforts of the health team and continuous medication, Kaliben started feeling better. Apparent relief in her symptoms motivated her to continue the medication and she began cooperating with the health team. Bhavnaben continued administering medicines to Kaliben in her presence and avoided overnight stay out of the village, fearing that Kaliben would miss her daily dose of medicines if Bhavnaben had to stay away on work. Kaliben would also declare that she would take medicines only from Bhavnaben and not from anyone else! Finally the day came when Kaliben completed the DOTS PLUS treatment regimen and turned sputum smear negative. During her treatment, Kaliben gained 8 kilogram of weight and turned symptom free. The high level of determination and motivation of the health team and especially tireless efforts of the ASHA worker was indeed the key to bring about this success!

4.11.3 A Case of Hypothyroidism

Lives of families of daily wage laborers working in rice mills located around Bavla town in Ahmedabad district is limited to the rice mill compounds in which they work and live. They

spend their entire day working in the rice mills. These are poor people, many of them migrants from other states. This story is about the life of one such family which originally from Bihar migrated to Gujarat nearly thirty years ago and began working in the rice mills around Dholka and Bavla. The family was working in the Ashapura rice mill and staying in the mill compound, when the head of the family Dharamdev Tiwari died of a short illness. Seven days after his death, Moni, his younger daughter was brought to the Community Health Center (CHC) in Bavla by her elder sister with vague complaints like swelling over eyes, hands and feet, constipation, weakness, paleness and growth retardation. After examining her, senior pediatrician Dr. Ketan Shah suspected hypothyroidism and suggested laboratory investigation for confirmation of the diagnosis. Moni's sample was examined in a private laboratory in Bavla and because of the recommendation from CHC Superintendent, Dr. Sandip Katudia, the private laboratory agreed to do the test free of charge. After laboratory confirmation on 30th March, 2012, Moni was diagnosed as a case of hypothyroidism. She was prescribed thyroxine, but unfortunately it was not available at the chemist store at Bavla. Dr. Shah arranged for the medicine from Ahmedabad and made it available in Bavla. After taking medicine as prescribed by Dr. Shah, Moni became symptom free and her health improved.

Moni's case is significant in more than one way. Poor, illiterate families often tend to resort to faith healers rather than going to a doctor when they fall ill. While it was appreciable on the part of Moni's family who took her to a doctor, her case presented with vague complaints which could have been misdiagnosed or led to a delay in diagnosis if not attended carefully. However, she was promptly diagnosed by the physician and was helped in accessing laboratory investigations as well as arrangement of medicines. Such incidents help people develop in faith in the services offered by the government health systems. The use of which significantly reduces their burden of paying enormous amount of their hard earned money to avail private health care.

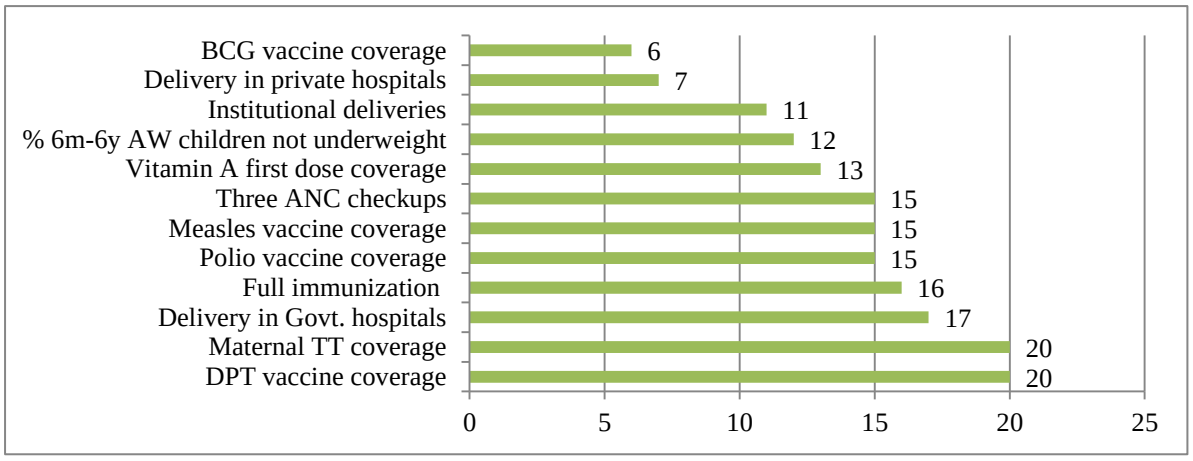
4.12 Summary

Data suggest that Ahmedabad district has performed well on a few indicators of health, average on a few indicators and poorly on others. The areas where Ahmedabad district performs well are: the proportion of expectant mothers who deliver in institutions; immunization of young children against tuberculosis, measles and polio; and meeting the Government of India norms of the average rural population served by government health centers (except for CHCs). While ICDS reports suggest that

the issue of underweight among children aged 6 months to 6 years has seen a dramatic decline over the last five years, this rapid fall raises several questions about the representativeness and accuracy of data.

Only 4 out 5 registered expectant mothers in Ahmedabad district (excluding Ahmedabad City) were registered in the first trimester of pregnancy in 2013-14. While the district was ranked 10th compared to other districts the city fares even worse: only 2 out 3 early registrations among registered expectant mothers. Such figures from Ahmedabad city are cause for concern. Furthermore, only about 4 out of 5 expectant mothers complete three ante natal checkups in Ahmedabad district (ranked 15th of all districts). Ahmedabad city performs worse on this indicator. About 15% of expectant mothers registered to receive ANCs were not immunized for tetanus in the district. Moreover, the performance is getting worse over time: the coverage was 96% in 2010-11 but dropped to 86% in 2013-14.

Figure 4.14: Rank of the Ahmedabad district on various health indicators, 2013-14



The figure 4.14 depicts how Ahmedabad district fares on several health indicators when compared to the other 25 districts of Gujarat. Despite being the most populous, and by many accounts the most prosperous and powerful, district in Gujarat state, Ahmedabad district does not rank highly on many health indicators.

SWOR ANALYSIS

STRENGTHS

Motivated staffs of relevant government departments and divisions who is committed to working towards improvement in health of the population.

Emphasis on use of technology and being transparent when it comes to collection and sharing of health data.

Health system being open to partnerships with the private sector.

Strong performance on health indicators such as BCG vaccination and institutional deliveries.

OPPORTUNITIES

The existing strengths of the public health system can be used to gather more data that are helpful in accurately assessing performance, revising existing programs and introducing new ones.

Partnership with the private sector can be extended to NGOs and research institutions to design ways to monitor health care provision in real-time and help to make data driven decisions.

The presence of several reputable NGOs and academic institutions working on health can be leveraged to fill the gap in service provision (such as lack of specialists at CHCs) as well as explore ways to strengthen the public health system in general.

WEAKNESSES

Health data available for evaluation of performance is uninformative in many instances. Especially damaging is lack of data on: size of target population of health schemes; proportion of patients seen at health centers who reside in the catchment area; proportion of ICDS target population covered during weighing of children at AWCs; proportion of the district's clinics/hospitals that comply with the IDSP; and burden of non-infectious diseases such as diabetes.

Poor performance maternal health indicators such as completion of 3 ANCs and TT vaccination.

RECOMMENDATIONS

In-depth investigations are needed to find out why the district is performing poorly on several health indicators. The emphasis needs to be on finding solutions and not placing blame.

Urgent attention needs to be paid to addressing the lack of complete data. We recommend a greater focus on collecting reliable data on health outcomes and not just service uptake. For instance, data on incidence of pregnancy complications and birth weight of babies born and not just institutional delivery or not. The district administration would benefit from regular collection of population-based health outcome data such as birth weight of babies born in the previous year; mother's report of under-five health; age, gender, height, and weight of respondents of all ages; waist circumference of adults; self-reported health and history of doctor-prescribed medication among adults.

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Appendix

Table 4.A: Proportion (%) of children aged 6 months to 6 years who were weighed at AWCs in Ahmedabad district and found to be underweight (2010-2015)

Region	2010	2011	2012	2013	2014	2015
Ahmedabad district including AMC	48.21	35.14	31.15	26.13	17.48	8.74
Daskroi	54.33	40.19	38.84	16.83	13.34	3.57
Viramgam	55.77	39.78	30.04	28.44	10.55	4.03
Mandal	57.35	37.62	36.46	38.57	11.54	6.46
Detroj	60.25	48.26	38.37	41.65	19.32	9.76
Sanand	54.20	37.57	28.55	18.85	11.03	5.39
Bavla	48.97	36.64	28.87	21.44	10.57	4.47
Dholka	47.91	28.71	26.45	20.27	10.73	3.86
Dhandhuka	52.72	35.92	32.14	18.52	7.74	2.75
Barwala	54.24	31.75	21.48	20.86	6.21	1.86
Ranpur	53.98	17.37	24.97	23.27	14.45	2.04
Ahmedabad Municipal Area (AMC)	43.52	35.50	31.78	29.21	23.25	13.19
Ahmedabad district excluding AMC	52.94	34.77	30.44	22.77	11.22	4.22
Source**: ICDS project wise MPR data for 2010 to 2015, shared by GSIDS**						

Table 4.B Taluka-wise number of deliveries under the Chiranjeevi Yojna, Ahmedabad District 2010-21 to 2013-14

Name of Taluka	2010-11				2011-12				2012-13				2013-14			
	Number of doctors enrolled	Total institutional deliveries	Deliveries under CY	Proportion of CY deliveries of total institutional deliveries	Number of doctors enrolled	Total institutional deliveries	Deliveries under CY	Proportion of CY deliveries of total institutional deliveries	Number of doctors enrolled	Total institutional deliveries	Deliveries under CY	Proportion of CY deliveries of total institutional deliveries	Number of doctors enrolled	Total institutional deliveries	Deliveries under CY	Proportion of CY deliveries of total institutional deliveries
Dascroi	4	6872	589	9	4	6885	741	11	4	9548	402	4	3	10040	453	5
Viramgam	3	8832	834	9	5	8866	822	9	5	9745	465	5	4	9409	672	7
Mandal																
Detroj																
Sanand	5	5581	255	5	5	5594	190	3	2	5797	15	0	2	5654	17	0
Dholka	4	6347	373	6	2	6309	491	8	2	6408	431	7	3	6786	613	9
Bavla	3	3832	410	11	4	3665	170	5	3	4085	32	1	5	3825	38	1
Dhandhuka	5	3047	424	14	3	3091	162	5	1	3805	115	3	1	4095	115	3
Barwala	0	3562	0	0	3	3432	697	20	3	3454	363	11	3	3809	210	6
Ranpur																
Total	24	38073	2885	8	26	37842	3273	9	20	42842	1823	4	21	43618	2118	5

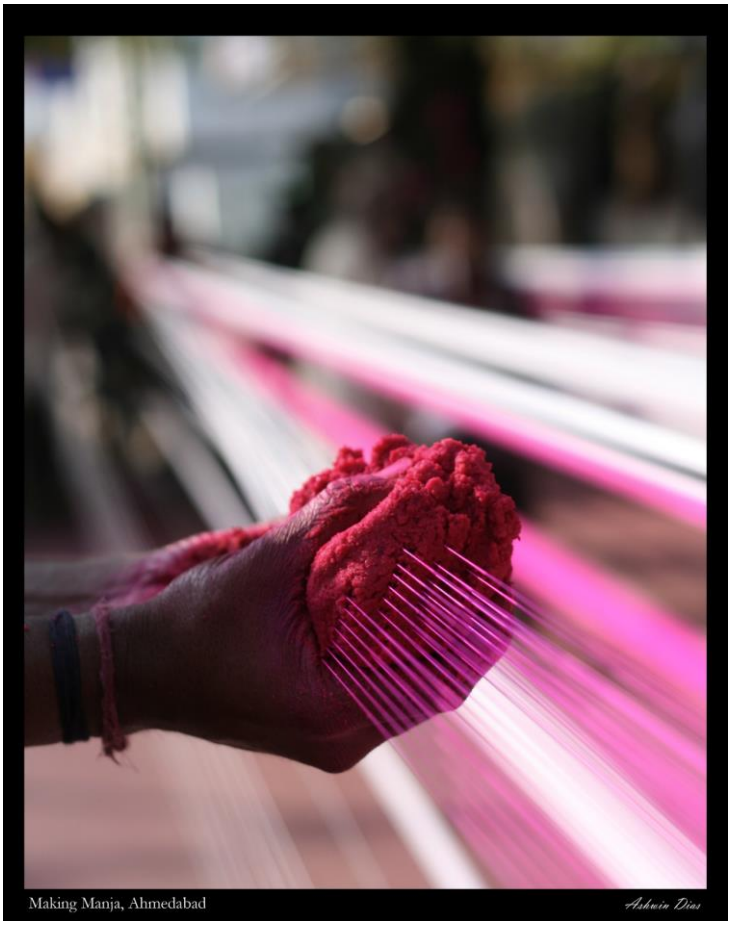
Source: CDHO, Ahmedabad district.

Table 4.C: Taluka-wise frequency and proportion (%) (2010-11-2014-15) of early registration for ANC among all registered for ANC, Ahmedabad district

Name of Taluka	2010-11			2011-12			2012-13			2013-14			2014-15		
	Total number of expectant mothers registered for ANC	Early registration	Early registration (%) of ANC	Total number of expectant mothers registered for ANC	Early registration	Early registration (%) of ANC	Total number of expectant mothers registered for ANC	Early registration	Early registration (%) of ANC	Total number of expectant mothers registered for ANC	Early registration	Early registration (%) of ANC	Total number of expectant mothers registered for ANC	Early registration	Early registration (%) of ANC
Dascroi	8018	6832	85	7673	6788	88	11656	8399	72	13239	8925	67	8394	7035	84
Viramgam Mandal Detroj	10737	9243	86	10392	9198	89	11226	9844	88	11332	9915	87	10629	9292	87
Sanand	6820	5692	83	6475	5648	87	6707	5770	86	7872	6247	79	6519	5715	88
Dholka	7537	5457	72	7192	5412	75	7391	5943	80	7662	5957	78	7300	6112	84
Bavla	4767	3886	82	4422	3842	87	4740	4100	86	4841	4396	91	4376	4076	93
Dhandhuka	4735	2956	62	4390	2911	66	4800	3293	69	4859	3561	73	4510	3478	77
Barwala Ranpur	4894	3141	64	4549	3098	68	4718	3362	71	4842	3453	71			
	47508	37207	78	45093	36897	82	51238	40711	79	54647	42454	78	41728	35708	86
Source: HMIS data supplied by the CDHO, Ahmedabad District															

Table 4.D: Taluka-wise frequency and proportion (2010-11-2014-15) of 3ANC registration among all registered mothers, Ahmedabad district

Name of Taluka	2010-11			2011-12			2012-13			2013-14			2014-15		
	Number of mothers registered for ANC	Registered mothers who received 3 ANC (N)	Proportion (%) of mothers who received 3 ANC	Number of mothers registered for ANC	Registered mothers who received 3 ANC (N)	Proportion (%) of mothers who received 3 ANC	Number of mothers registered for ANC	Registered mothers who received 3 ANC (N)	Proportion (%) of mothers who received 3 ANC	Number of mothers registered for ANC	Registered mothers who received 3 ANC (N)	Proportion (%) of mothers who received 3 ANC	Number of mothers registered for ANC	Registered mothers who received 3 ANC (N)	Proportion (%) of mothers who received 3 ANC
Dascroi	8018	6967	87	7673	6888	90	11656	8440	72	13239	9456	71	8394	7235	86
Viramgam Mandal Detroj	10737	9598	89	10392	9519	92	11226	9640	86	11332	9650	85	10629	9430	89
Sanand	6820	5759	84	6475	5680	88	6707	5816	87	7872	6667	85	6519	5769	88
Dholka	7537	6121	81	7192	6042	84	7391	5986	81	7662	5936	77	7300	6140	84
Bavla	4767	3984	84	4422	3905	88	4740	4126	87	4841	4254	88	4376	4199	96
Dhandhuka	4735	3047	64	4390	2968	68	4800	3271	68	4859	3519	72	4510	3470	77
Barwala Ranpur	4894	3020	62	4549	2941	65	4718	3260	69	4842	3457	71	NA		
Total	47508	38496	81	45093	37943	82	51238	40539	79	54647	42454	78	41728	36243	87
Source: CDHO, Ahmedabad District															



CHAPTER 5: LIVELIHOOD & EMPLOYMENT

"Our Livelihood is intimately tied to the food we eat, water we drink and places where we recreate. That's why we have to promote responsibility and conservation when it comes to our natural Resource"

Mark Udall

Livelihoods & Employment

5.1 Introduction

To understand the dynamics of human development in the Ahmedabad district, a review of economic well-being of households, agriculture and employment is important. One of the important determinants of quality of living is income. To capture economic wellbeing, information on household incomes would seem most appropriate. However, incomes are not typically measured in surveys in the developing world, and rarely in India. The Census collects information on household assets and possessions which are more enduring indicators of household economic standing. Agriculture is an important sector offering employment and subsistence to a large number of Indian households. In the section on agriculture, we describe the land use classification, cropping intensity and review land ownership by social group categories. We also engage in a discussion around employment not only in the agricultural sector but also allied and industrial sectors (e.g. establishments and MSMEs) that are central to the economy reality of Ahmedabad district. Finally, since the city of Ahmedabad has been a major driver of the high growth story of the state, a review of urban development in the overall district is crucial.

In this chapter the Census of India data for 2001 and 2011 have been utilized to map the markers of livelihood in the district. Most analysis in this chapter has been conducted at the taluka-level in order to provide a comparative understanding of developmental success, vulnerabilities and challenges. Additionally, since rural-urban differences in social and economic outcomes are prevalent in India, all indicators have been carefully studied using the place of residence as an interrogative lens.

5.2 Agriculture

Studies on Gujarat have reported very high rate of agricultural growth in the state (Shah and Pattnaik, 2014; Shah, et al, 2009; Dholakia, 2007). This may seem surprising since the state of Gujarat faces moderate to severe adverse agronomic conditions such as highly uncertain rainfall, poor soil quality, low moisture retention-primary factors associated with arid and semi-arid regions. Nevertheless, Gujarat's agricultural growth story has been significant; 9.97 percent per annum in the last decade (Shah & Pattnaik, 2014). Research suggests that development of irrigation under the Sardar Sarovar Project (SSP) and augmentation of groundwater resources have helped farmers in negotiating with the uncertainties in farm production in the state. The following Table 5.1 summarizes the extent of irrigation by districts and the associated source.

Table 5.1: Geographical divisions and extent of irrigation in the state of Gujarat

Districts/regions	***Extent of Irrigation, 2003-2009***
Western (Saurashtra-Kutch): almost entirely through groundwater	32.2
Northern (Sabarkantha, Banaskantha, Patan, Mehsana, Gandhinagar): almost entirely through groundwater	48.1
Eastern (Panchmahas, Dahod, Bharuch, Dangs): almost entirely through groundwater	30.4
Central-Southern (Ahmedabad, Vadodara, Surat (Tapi), Navasari, Valsad): covered by the command area of most of the large and medium irrigation dams	54.7
All districts	40.7

Source: Socioeconomic Review, Gujarat Report, various issues; Adapted from Shah & Pattnaik (2014), "High Growth Agriculture in Gujarat: An enquiry into inclusiveness and sustainability", Hirway (eds). Growth or Development: Which way is Gujarat going?

Indian agriculture is structurally small farm and small holder based. The Agriculture Census (2010-2011) of Gujarat reports that the total number of operational holdings is 48.85 lakhs which works out to be a 4.82 percent increase over the earlier Agriculture Census (2005-06). Overall in Gujarat, the total area of operational holdings has been decreasing over the years. In fact in 2005-06, the recorded area was 102.69 lakhs hectares as compared to 98.98 lakhs hectares in the recent Census (2010-2011). The Agriculture Census (2010-2011) of the Government of Gujarat suggests that this reduction in area has been primarily due to conversion of agricultural land into non-agricultural land. The size classes adopted in the Agriculture Census (Govt. of Gujarat) have been indicated in parentheses in the Table 5.2 below.

Table 5.2: District wise total of operational land holding by social group categories (all areas are in hectares), 2005-2006 and 2010-2011

	2010-2011						2005-2006					
	Marginal (below 1.00)		Small (1.00-1.99)		Others (> =2.00)		Marginal (below 1.00)		Small (1.00-1.99)		Others (> =2.00)	
	No.	Area	No	Area	No	Area	No.	Area	No	Area	No	Area
SCs	3814	1637	2665	3805	3412	17762	3337	1482	259	3603	4170	22757
STs	724	280	526	761	985	10259	439	239	636	935	1488	8724
Other	64578	28398	49795	72862	90988	440363	53907	24015	44647	64230	91099	462926
All social groups	69121	30317	52988	77430	95576	472510	57688	25738	47786	68771	96948	498534

Source: Adapted from Agriculture Census (2010-2011), Part 1, Revenue Department, Government of Gujarat

To examine if the number and area of operational land holding in Ahmedabad district has undergone shifts, we have reported change as a percentage of all social group categories. Overall, as data from the state of Gujarat and also India suggest, there has been a decrease in the area of operational land holding for all social groups from 2005 to 2011. In terms of the number of operational holding, both scheduled tribe and scheduled caste households report an increase on marginal and small land holding respectively. The increase in number for scheduled castes is substantial given that the total population of SCs in the district is around 10 percent (Census, 2011). The highlighted numbers show any reported increase from the earlier Census. Again, these numbers and percentage change should be understood in the

context of the total population of these social group categories in the district. The "general" caste category report increase in area of operational land holding for all land sizes as well as in the number of land holding over 2.00 hectares.

Table 5.3: Change in Number and Area of Operational Land Holding By Social Groups, 2005-2006 And 2010-2011

	AREA of operational holding as a % of all social groups						NUMBER of operational holding as a % of all social groups					
	area (marginal)		area (small)		area (> =2 ha)		Marginal		small		> = 2 ha	
	2010-2011	2005-2006	2010-2011	2005-2006	2010-2011	2005-2006	2010-2011	2005-2006	2010-2011	2005-2006	2010-2011	2005-2006
SCs	5.4	5.8	4.9	5.2	3.8	4.6	5.52	5.78	5.03	0.54	3.57	4.30
STs	0.9	0.9	1.0	1.4	2.2	1.7	1.05	0.76	0.99	1.33	1.03	1.53
Other	93.7	93.3	94.1	93.4	93.2	92.9	93.43	93.45	93.97	93.43	95.20	93.97

Source: Adapted from Agriculture Census (2010-2011), Part 1, Revenue Department, Government of Gujarat

Table 5.4: Taluka wise operational land holding by land class sizes, 2010-2011

Sr. No	Taluka	Unit	Marginal (Below 1.0 ha)					Small (1.0 to 2.0 ha)					Others (More then 2.0 ha)					Total				
			Inst.	SC	ST	Other	Total	Inst.	SC	ST	Other	Total	Inst.	SC	ST	Other	Total	Inst.	SC	ST	Other	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Abd. City	No.	2	52	5	2877	2936	0	10	1	630	641	1	5	3	370	379	3	67	9	3877	3956
		Area	1	18	1	1004	1023	0	13	2	867	883	4	33	12	1306	1355	4	64	15	3177	3260
2	Daskoi	No.	0	617	47	19375	20039	0	199	12	7295	7506	24	142	12	6866	7044	24	958	71	33536	34589
		Area	0	239	22	7731	7991	0	278	18	10341	10637	902	511	48	26293	27754	902	1028	88	44365	46383
3	Dholaka	No.	0	925	154	9590	10669	0	525	114	6438	7077	35	733	322	12834	13924	35	2183	590	28862	31670
		Area	0	362	73	3797	4232	0	732	165	9342	10240	844	4008	7573	69559	81983	844	5102	7810	82698	96454
4	Dhandhuka	No.	1	76	24	2571	2672	0	248	88	5753	6089	7	412	159	17217	17795	8	736	271	25541	26556
		Area	0	50	10	1312	1372	0	359	132	8716	9207	220	2041	681	90807	93748	220	2450	823	100835	104327
5	Sanand	No.	0	691	114	9804	10609	0	441	76	5959	6476	84	421	47	8146	8698	84	1553	237	23909	25783
		Area	0	321	58	4235	4614	0	626	110	8602	9338	1141	2199	182	37984	41505	1141	3145	350	50821	55458
6	Viramgam	No.	0	208	56	5286	5550	1	264	25	5629	5919	39	487	117	12380	13023	40	959	198	23295	24492
		Area	0	92	30	2084	2206	1	381	38	8405	8825	1013	2619	494	61640	65766	1014	3091	562	72130	76797
7	Bavla	No.	0	712	309	5095	6116	0	471	182	4731	5384	0	478	281	9061	9820	0	1661	772	18887	21320
		Area	0	288	80	2503	2870	0	684	255	6921	7859	0	2977	1063	45979	50019	0	3949	1398	55402	60748
8	Mandal	No.	0	115	5	1604	1724	0	159	8	2491	2658	0	269	6	6089	6364	0	543	19	10184	10746
		Area	0	61	2	920	983	0	232	11	3689	3932	0	1354	19	28922	30295	0	1647	31	33532	35210
9	Ranpur	No.	0	29	4	1900	1933	1	64	8	3524	3597	1	121	21	6446	6589	2	214	33	11870	12119
		Area	0	15	2	1116	1133	1	93	11	5251	5356	3	523	96	28875	29497	4	631	109	35242	35985
10	Detroj-rampura	No.	0	327	6	5511	5844	0	184	5	4495	4684	0	122	6	4830	4958	0	633	17	14836	15486
		Area	0	145	4	3029	3178	0	261	8	6485	6754	0	409	20	18690	19119	0	815	33	28204	29052
11	Barvada	No.	2	62	0	965	1029	0	100	7	2850	2957	0	222	11	6749	6982	2	384	18	10564	10968
		Area	1	47	0	666	715	0	146	11	4243	4399	0	1089	72	30309	31469	1	1281	82	35218	36583
	Total	No.	5	3814	724	64578	69121	2	2665	526	49795	52988	191	3412	985	90988	95576	198	9891	2235	205361	217685
		Area	2	1637	280	28398	30317	2	3805	761	72862	77430	4127	17762	10259	440363	472510	4131	23204	11300	541623	580258

Source: Agriculture Census (2010-2011), Part 1, Revenue Department, GOG.(Table 19)

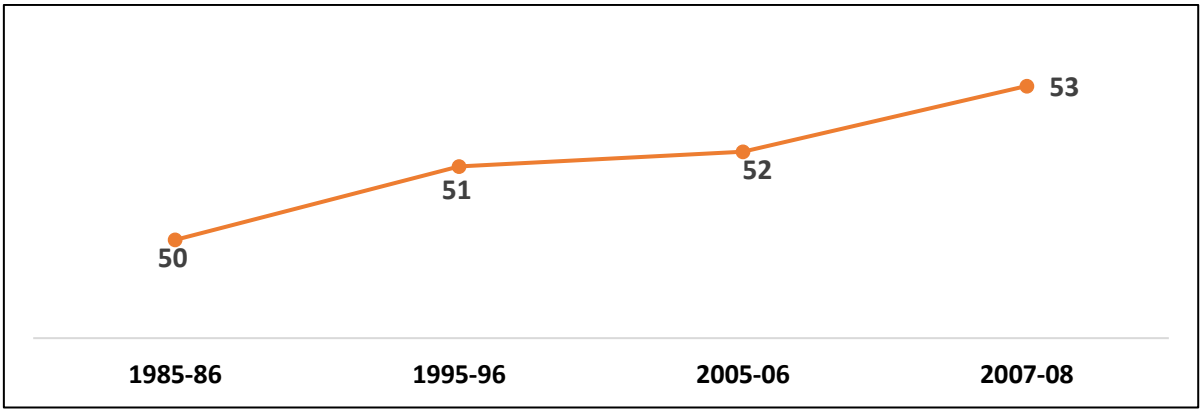
5.2.1 Land Utilization Pattern

Land utilization is an important determinant for temporal and spatial use and availability of land. It also encompasses the productivity of land-use. In agricultural studies, very often the concept of "reporting area" is used. The "Reporting Area" stands for the area for which data on land use classification are available (*Agriculture Informatics Division*, Available at : http://lus.dacnet.nic.in/). Other frequently used concepts are "*Net Sown Area*": this

represents the total area sown with crops and orchards. Area sown more than once in the same year is counted only once; "*Total Cropped Area*": this represents total area sown and/or more than once in a particular year; *Total/Gross Irrigated Area*: it is the total area under crops, irrigated once and/or more than once in a year. It is counted as many times as the number of times the areas are cropped and irrigated in a year.

Data for the state of Gujarat shows a consistent increase in the percentage of net sown area to reported area (See Figure 5.1). A district wise analysis suggests that the districts of Kheda, Amreli, Gandhinagar, Surat, Mehasana, Patan, Anand and Bhavnagar have more than 70 percent of their area under cultivation. However, as Table 5.5 shows, the percentage of net area sown to the reported area for the district of Ahmedabad is 72.8% (2007-08) higher than the earlier year of 2003-04 (66%) (*Irrigation in Gujarat, 2011-12*).

Figure 5.1: Trend in land utilization pattern, Gujarat (1985-2008)



Source: Irrigation in Gujarat Reports (2011-2012), Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar. Adapted from Statement # 1 (Land utilization pattern in Gujarat state).

Table 5.5: Land Utilization pattern for Ahmedabad district (all areas in '00 hectares)

year	Reporting area	Forest	Barren & Uncultivable land	Non agricultural uses	Permanent Pasture &	Cultivable waste	Current fallows	Net area sown (NAS)	Gross Area Sown (GAS)	% of NAS to RA
2003-4	7748	106	661	669	279	263	662	5093	5578	66.7
2007-8	7748	107	535	739	277	230	208	5637	6410	72.8

Source: Irrigation in Gujarat Reports (2011-2012), Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar. Adapted from Statement # 2 (Report, 2011-2012: data for 2007-08) and Statement # 3 (Report 2008-09: data for 2003-04).

As per the *Season and Crop Report* (2007-08), the **Gross Cropped Area** for the state of Gujarat in the year 2007-08 was 122.11 lakh hectares which is about 3.42 percent increase as compared to the previous year, 2006-07 reporting 118.07 lakh hectares. Further, the percentage of **net sown area to total reporting area** for the Gujarat state worked out to 52.98%. Ahmedabad district reported a net sown area of 72.75% which is significantly higher than the state average. In terms of Cropping Intensity, the *Season & Crop Report* (2007-08) for the state of Gujarat suggested an increase from 120.57% in 2006-07 to 122.53% in 2007-08. Similarly, the intensity of irrigated cropping for the state of Gujarat worked out to 132.62% in 2007-08 which is significantly higher than of 124.57% (2006-07). Again, if one looks at the cropping intensity trend, it is evident that the state of Gujarat has been successful in recording consistently high cropping intensity from 117.98% in 1989-90 to 132.62% in 2007-08. These statistics corroborate the phenomenal agricultural growth story of the state of Gujarat (*Season & Crop Reports*, Directorate of Agriculture, Government of Gujarat, Gandhinagar).

Overall cropping intensity pattern for two years- 2003-04 and 2007-08- for the district of Ahmedabad and the state of Gujarat has been presented in Table 5.6. A district-wise analysis of the **cropping intensity** (i.e the ratio if gross cropped area to net cropped area) pattern reveals Ahmedabad district reporting lower than state average with a cropping intensity of 113.71% (2007-08). Similar pattern is observed for the intensity of irrigated crop where the district of Ahmedabad reports slightly lower than state average with a cropping intensity of 131.81% (2007-08). Since patterns are consistent with the earlier comparison year of 2003-04 as reported on the Table below. This rate is markedly lower when compared with the intensity of irrigated crop for the districts of Dohad (196%) , Sabarkantha (164%) or the neighboring district of Gandhinagar (142%) for the year 2007-08.

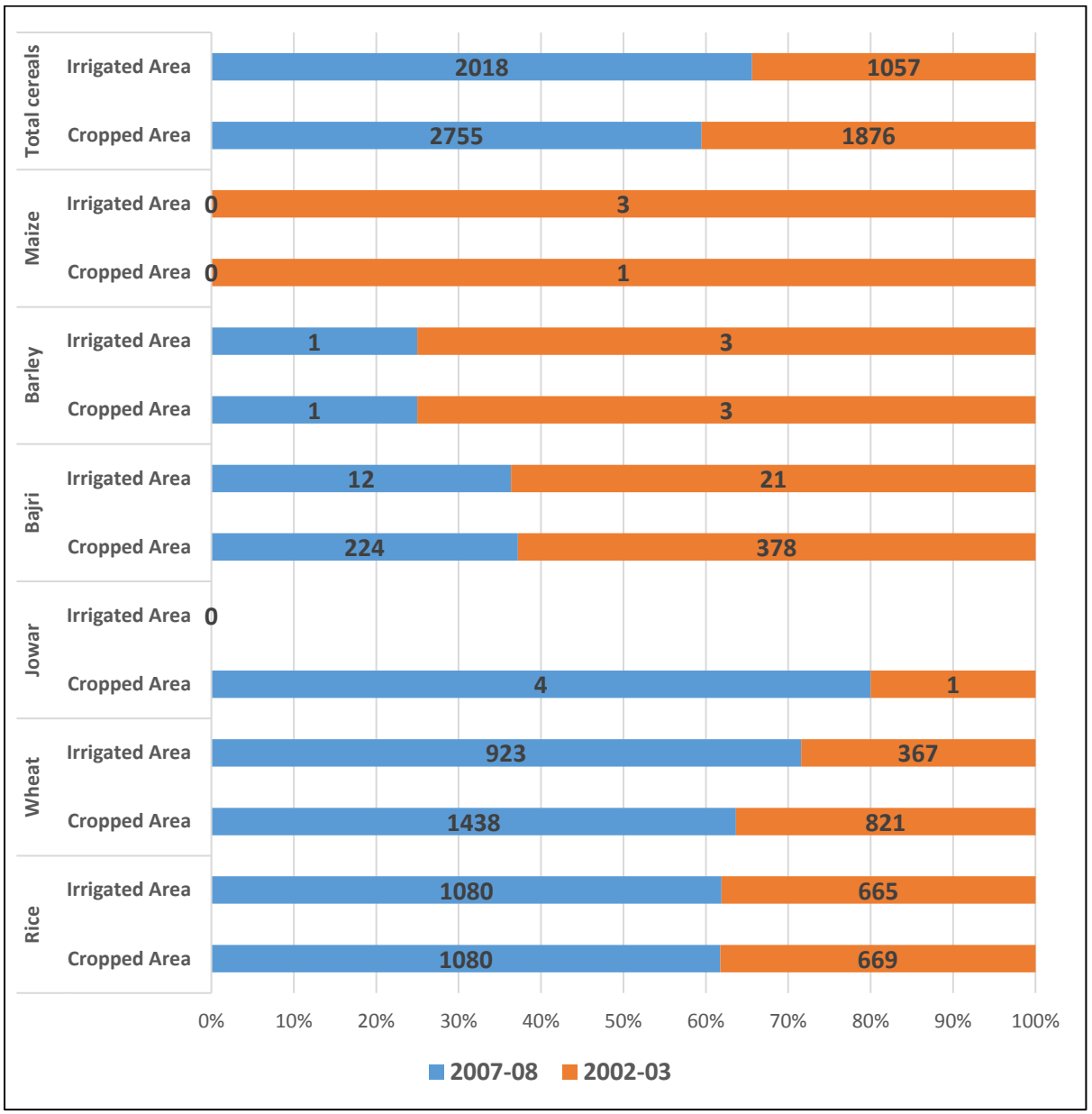
Table 5.6: Trends in Intensity of Cropping and Intensity of Irrigated Cropping (2003-04 and 2007-08). All areas are in '00 hectares

2003-04											
	Canal	Tank	Well (including tube well)	Net Irrigated Area (NIA)	Gross Irrigated Area (GIA)	Net Area Sown (NAS)	Gross Area Sown (GAS)	% NIA to NAS	%GIA to GAS	Cropping Intensity	Intensity of Irrigated Cropping (% GIA/NIA)
Gujarat	6842	277	23728	33875	41112	98515	114210	34.3	36	115.9	121.3
AHM Dist	477	55	1547	1724	2100	5093	5578	33.8	37.6479	109.52	121.81
2007-08											
	Canal	Tank	Well (including tube well)	Net Irrigated Area (NIA)	Gross Irrigated Area (GIA)	Net Area Sown (NAS)	Gross Area Sown (GAS)	% NIA to NAS	%GIA to GAS	Cropping Intensity	Intensity of Irrigated Cropping (% GIA/NIA)
Gujarat	9130	529	45097	42333	56141	99658	122114	42.48	45.97	122.53	132.62
AHM Dist	736	45	2025	2144	2826	5637	6410	38.03	44.09	113.71	131.81

Source: Irrigation in Gujarat Reports (2011-2012) and 2008, Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar.

Figures 5.2 and 5.3 show the cropped and irrigated area for both food and non-food crops in the district. Two years have been compared to show the change in cropping and irrigation patterns. In particular, when the district of Ahmedabad is compared with other districts in the state, it's ranking for the percentage of total irrigated area under main crops for total food and non-food crops in 9 with 5.03% of total irrigated area. This is lower than other districts such as Banaskantha (rank 1: with 9.11%) or Junagadh (rank 2: with 7.81%) as observed in the *Gujarat Irrigation Report* of 2011-2012.

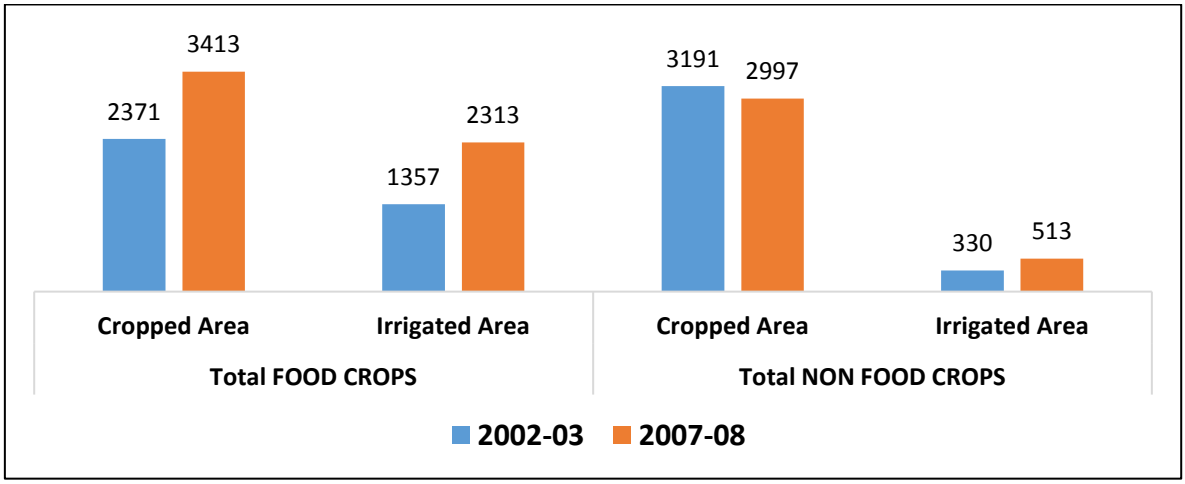
Figure 5.2: Crop-Wise Total Cropped Area for Food Crops (2002-03 And 2010-2011 Compared)



Source: Irrigation in Gujarat Reports (2011-2012) and 2008, Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar. Statement # (2011-2012) and Statement # 12 (2008)

However, as shown in Table 5.6, a significantly larger proportion of irrigated area has been used for cultivating rice and wheat in the district of Ahmedabad which is higher than many other districts in the state. When compared to other districts in terms of percentage of food crops to total cropped area, Ahmedabad district records higher (53.64%) than state average (46.73%).

Figure 5.3: Cropped and Irrigated Areas for Ahmedabad District: An Overview



Source: Irrigation in Gujarat Reports (2011-2012) and 2008, Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar. Statement # 8.

Table 5.7: A District Wise Ranking of Main Crops (2007-08) Accounting For Larger Proportion Of Irrigated Area (In Hectares)

Crop	District	Irrigated Area	% of total irrigated area under the crop
Rice			
	Ahemdabad	1080	21.86
	Kheda	1033	20.91
	Anand	678	13.72
	Surat	496	10.04
	Navsari	359	7.27
	Other districts	1295	26.21
	Total	4941	100
Wheat			
	Junagadh	1796	15.78
	Sabarkantha	1077	9.46
	Ahmedabad	923	8.11
	Rajkot	907	7.97
	Banaskantha	830	7.29
	Kheda	782	6.87
	Mahesana	647	5.69
	Anand	509	4.47
	Other districts	3908	34.34
	Total	11379	100

Source: Irrigation in Gujarat Report (2011-2012). Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar. Adapted from Statement # 9.

5.3 Employment

The *World Development Report* (WDR, The World Bank, 2013) underscores the importance of employment in the development process. Economically productive employment not only provides higher earnings and hence higher cosumption potential but they also contribute to the state's overall income. Standard employment growth parameters- working population and work participation rates- demonstrate the occupational distribution of a region. Temporal analysis (2001 and 2011) of workers provide information on the structural and socioeconomic changes in the state. In the following set of tables, we examine the perfomance of Ahmedabad district in terms of employment parameters. However, echoing WDR 2013, it is important to also assess if employment "growth" measured by standard parameters adequately capture "development". To accomplish that, in this chapter, we focus on the relationship between informal labor and human development. This is crucial for the district of Ahmedabad which is predominanty urban and sustains a huge informal sector.

5.3.1.Work Participation Rate:

In the Census, "work" is defined as participation in any economically productive activity with or without compensation, wages or profit. The key point is that the activity should be economicaly productive. Reference period for determining a person as worker and non-woker is one year preceding the date of enumeration. **Work participation** rate is the percentage of workers (Main + Marginal) to total population. Again, by Census definition, **"main**" workers are those who have worked for major part of the refenernce period in any economically productive activity. "**Marginal**" workers are those who have worked for 3 month or less then six months of the reference period (i.e. in the last one year preceding the date of enumeration).

Agriculture and allied work constitute an important section of the total amount of economically productive activity. By Census definition, a "cultivator" is typically the one who is involved in cultivation of land owned or from the government or from private persons/instituions for payment in money, kind and share. "Agricultural laborers" on the other hand are those who work on another person's land for wages in cash or kind. The "household industry" is defined as an industry conducted by one of more members of the hosuehold at home or within the village in rural areas and only within the precincts of the house where the household lives in urban areas.

As per census 2011, the overall workforce participation rate in India for females is 25.51% as compared to 53.26% for males. The state of Gujarat, in constrast, has both higher worker participation rates for both men and women. The district of Ahmedabad echoes similar trend though the females rate is lower in 2011 as compared to the state average.

Rural-urban differences in workforce participation is evident in the national level employment numbers as well. Further, the rural-urban divide often intersects with gender. For example, though the female participation rate (30%) in rural India recorded higher female participation rate than urban India (15.4%), these rates were lower when compared to both urban (54%) and rural male participation (53%) rates. The overall share of cultivators and agricultural labourers have fallen from the 2001 rates for both men and women.

In the following tables and charts, we present the distribution of main and marginal workers in the district (See Tables 5.7 and 5.8) and also provide a comparison of worker participation rates for two years (2001 and 2011) by place of residence (rural versus urban) and talukas in the district. See figure 5.4a-b and 5.5a-d. Overall, as suggested in the tables below, across all Talukas, women are overrepresented in the "marginal" type of work as compared to men suggesting social and economic factors (e.g. patriarchy, education, mobility and social norms) that limit women's full time gainful employment. In terms of worker participation rates, a substantial gender disparity persists. This gender disparity in employment is sharper in the urban areas as compared to rural areas (See charts 5.4a and 5.4b). For rural areas of the district, Ahmedabad records lower than average worker participation rate when compared to the state of Gujarat (24 percent versus 32 percent). The rural talukas of Daskroi, Sanand, Viramgram and Dholka record around 10 percentage points lower worker participation rates

than the state average. The lower worker participation rate is more evident when total worker participation rates are compared for the years 2001 and 2011 (see charts 5.5 a & b). Figure 5.5b shows that the state of Gujarat has a higher worker participation rate than all talukas of the district. By the year 2011, the rural talukas of Ranpur, Daskroi, Viramgram and Sanand are particularly poor performers when it comes to worker participation rates. Comapring the urban talukas between the two years-2001 and 2011-shows that there is some amount of homogenity in performance (see charts 5.5c and d). The urban talukas of Viramgram and Ranpur record lowest levels of worker participation rates by the year 2011.

Figure 5.4a: Worker Participation Rates by taluka (Rural, 2011)

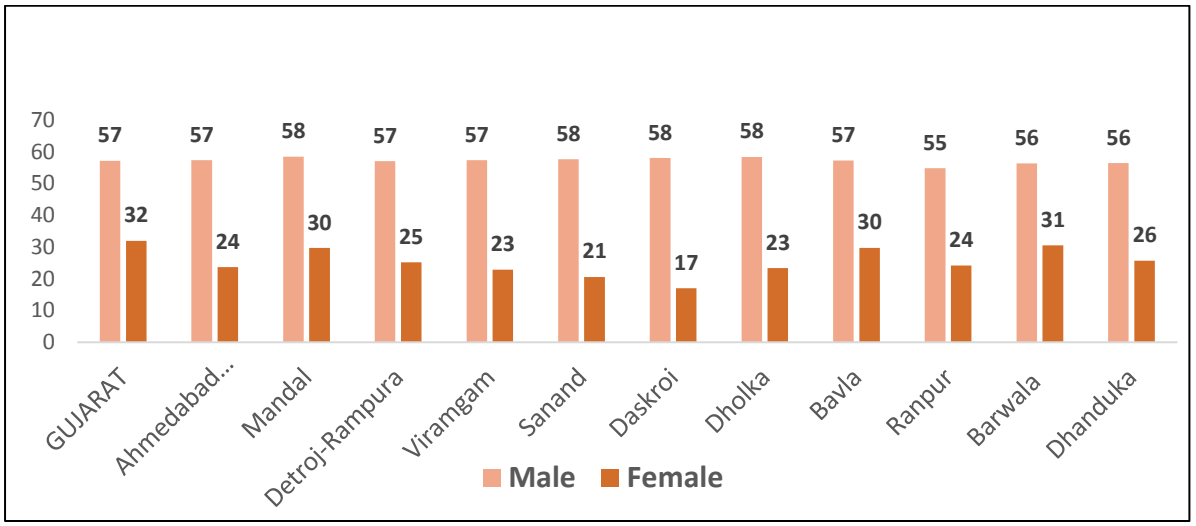


Figure 5.4b: Worker Participation Rates by taluka (Urban, 2011)

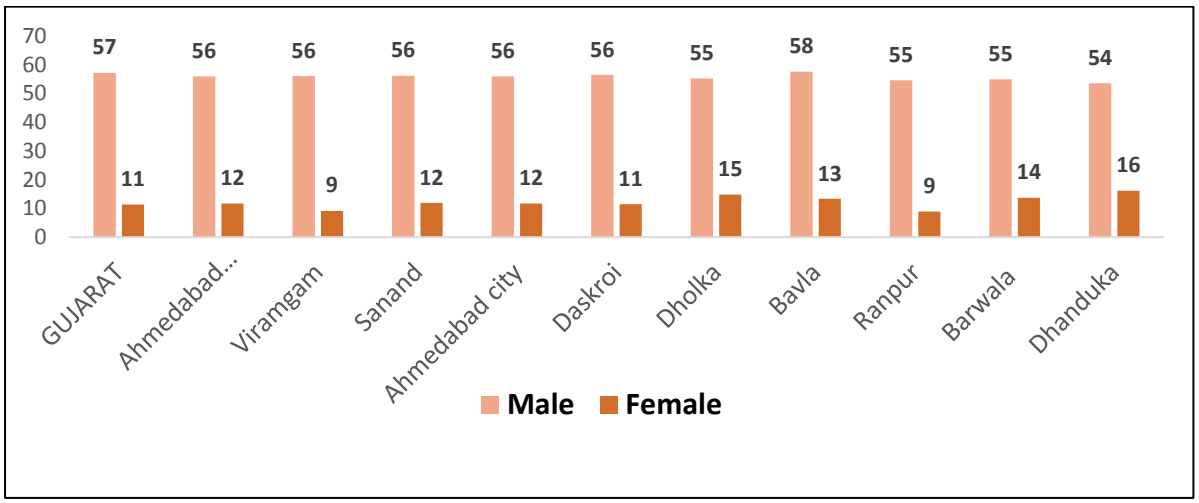


Table 5.8.a: Distribution of Main And Marginal Workers By Talukas Of Ahmedabad District, 2011

Name of State / District / Taluka	T/R/U	Main and Marginal workers to Total workers, Census 2011									
		Total workers		Main Workers		Marginal Workers		Main workers (%)		Marginal Workers (%)	
		M	F	M	F	M	F	M	F	M	F
GUJARAT	Total	18000914	6766833	16567695	3797679	1433219	2969154	92.0	56.1	8.0	43.9
GUJARAT	Rural	10171584	5398508	9141339	2736781	1030245	2661727	89.9	50.7	10.1	49.3
GUJARAT	Urban	7829330	1368325	7426356	1060898	402974	307427	94.9	77.5	5.1	22.5
Ahmadabad	Total	2127547	467405	2005714	326695	121833	140710	94.3	69.9	5.7	30.1
	Rural	341534	131690	311753	63010	29781	68680	91.3	47.8	8.7	52.2
	Urban	1786013	335715	1693961	263685	92052	72030	94.8	78.5	5.2	21.5
Mandal	Total	21074	10178	19472	3967	1602	6211	92.4	39.0	7.6	61.0
	Rural	21074	10178	19472	3967	1602	6211	92.4	39.0	7.6	61.0
	Urban	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Detroj-Rampura	Total	24482	10119	22520	4119	1962	6000	92.0	40.7	8.0	59.3
	Rural	24482	10119	22520	4119	1962	6000	92.0	40.7	8.0	59.3
	Urban	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Viramgam	Total	57044	17613	52367	9583	4677	8030	91.8	54.4	8.2	45.6
	Rural	40824	15148	37496	7812	3328	7336	91.8	51.6	8.2	48.4
	Urban	16220	2465	14871	1771	1349	694	91.7	71.8	8.3	28.2
Sanand	Total	70587	19534	65881	11045	4706	8489	93.3	56.5	6.7	43.5
	Rural	42192	14141	39016	7019	3176	7122	92.5	49.6	7.5	50.4
	Urban	28395	5393	26865	4026	1530	1367	94.6	74.7	5.4	25.3
Ahmadabad City	Total	1646421	307629	1564426	243024	81995	64605	95.0	79.0	5.0	21.0
	Rural	0	0	0	0	0	0	0.0	0.0	0.0	0.0
	Urban	1646421	307629	1564426	243024	81995	64605	95.0	79.0	5.0	21.0
Daskroi	Total	95578	22777	88169	13438	7409	9339	92.2	59.0	7.8	41.0
	Rural	55649	15409	50819	7796	4830	7613	91.3	50.6	8.7	49.4
	Urban	39929	7368	37350	5642	2579	1726	93.5	76.6	6.5	23.4
Dholka	Total	74659	24631	67489	12106	7170	12525	90.4	49.1	9.6	50.9
	Rural	51486	18868	47105	8195	4381	10673	91.5	43.4	8.5	56.6
	Urban	23173	5763	20384	3911	2789	1852	88.0	67.9	12.0	32.1
Bavla	Total	47247	19223	44368	11036	2879	8187	93.9	57.4	6.1	42.6
	Rural	34370	16541	32067	8966	2303	7575	93.3	54.2	6.7	45.8
	Urban	12877	2682	12301	2070	576	612	95.5	77.2	4.5	22.8
Ranpur	Total	26122	9663	23275	4567	2847	5096	89.1	47.3	10.9	52.7
	Rural	21362	8928	18881	4156	2481	4772	88.4	46.6	11.6	53.4
	Urban	4760	735	4394	411	366	324	92.3	55.9	7.7	44.1
Barwala	Total	22084	9702	20440	5612	1644	4090	92.6	57.8	7.4	42.2
	Rural	16958	8523	15484	4667	1474	3856	91.3	54.8	8.7	45.2
	Urban	5126	1179	4956	945	170	234	96.7	80.2	3.3	19.8
Dhandhuka	Total	42249	16336	37307	8198	4942	8138	88.3	50.2	11.7	49.8
	Rural	33137	13835	28893	6313	4244	7522	87.2	45.6	12.8	54.4
	Urban	9112	2501	8414	1885	698	616	92.3	75.4	7.7	24.6

Table 5.8.b : Distribution of workers by types and residence as a proportion to Total Workers, Census 2011

Name of State / District / Taluka	T/R/U	Cultivators		Agricultural Labourers		Household Industry		Other workers	
		M	F	M	F	M	F	M	F
GUJARAT	Total	23.6	17.8	20.3	47.1	1.2	2.0	55.0	33.1
GUJARAT	Rural	40.1	21.7	33.5	56.9	1.0	1.2	25.3	20.3
GUJARAT	Urban	2.1	2.3	3.0	8.8	1.3	5.1	93.5	83.8
Ahmadabad	Total	5.8	4.2	7.9	21.6	1.5	4.8	84.8	69.4
	Rural	30.6	10.9	42.0	69.7	1.1	1.4	26.3	18.0
	Urban	1.0	1.5	1.4	2.8	1.6	6.1	96.0	89.6
Mandal	Total	29.0	10.7	47.0	75.3	0.6	0.5	23.4	13.5
	Rural	29.0	10.7	47.0	75.3	0.6	0.5	23.4	13.5
	Urban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detroj-Rampura	Total	29.4	9.6	45.3	63.0	1.1	1.9	24.3	25.5
	Rural	29.4	9.6	45.3	63.0	1.1	1.9	24.3	25.5
	Urban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viramgam	Total	21.9	12.8	35.1	65.2	0.6	0.9	42.4	21.1
	Rural	29.9	14.2	48.4	74.6	0.6	0.4	21.2	10.8
	Urban	1.9	4.5	1.6	7.0	0.8	3.8	95.8	84.7
Sanand	Total	30.0	10.8	26.2	58.0	0.7	1.1	43.1	30.1
	Rural	41.3	13.1	34.1	69.5	0.8	0.9	23.8	16.5
	Urban	13.3	4.6	14.6	27.9	0.4	1.7	71.7	65.8
Ahmadabad City	Total	0.6	1.4	0.6	1.2	1.6	6.1	97.3	91.3
	Rural	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Urban	0.6	1.4	0.6	1.2	1.6	6.1	97.3	91.3
Daskroi	Total	19.6	7.8	22.0	42.7	1.0	2.1	57.4	47.5
	Rural	29.0	10.4	31.2	57.5	1.0	1.6	38.8	30.6
	Urban	6.5	2.3	9.1	11.8	1.0	3.1	83.4	82.8
Dholka	Total	19.1	7.1	36.1	54.7	3.5	5.7	41.3	32.5
	Rural	26.1	8.9	47.3	65.5	1.3	2.9	25.2	22.8
	Urban	3.6	1.3	11.2	19.6	8.3	15.0	76.9	64.1
Bavla	Total	25.6	10.8	34.0	63.2	0.8	1.5	39.6	24.5
	Rural	33.0	12.4	44.8	70.8	0.7	1.1	21.5	15.8
	Urban	5.7	1.2	5.2	16.2	1.2	4.1	87.9	78.4
Ranpur	Total	28.8	11.1	35.8	67.9	2.7	2.4	32.7	18.7
	Rural	33.9	11.8	39.4	70.4	3.1	2.1	23.6	15.8
	Urban	5.5	2.0	19.5	37.4	1.1	6.1	73.9	54.4
Barwala	Total	23.7	8.5	36.5	74.1	1.1	1.4	38.7	16.0
	Rural	29.1	9.5	40.4	77.9	1.2	1.5	29.3	11.1
	Urban	5.9	1.8	23.5	46.1	0.6	0.8	69.9	51.3
Dhandhuka	Total	21.4	7.0	41.0	70.9	1.2	1.5	36.5	20.7
	Rural	25.7	7.7	48.6	77.7	1.1	1.3	24.7	13.4
	Urban	5.8	3.3	13.3	33.3	1.5	2.4	79.4	61.0

Figure. 5.5a, 5.5b: Work participation rates (all persons), RURAL (2001, 2011)

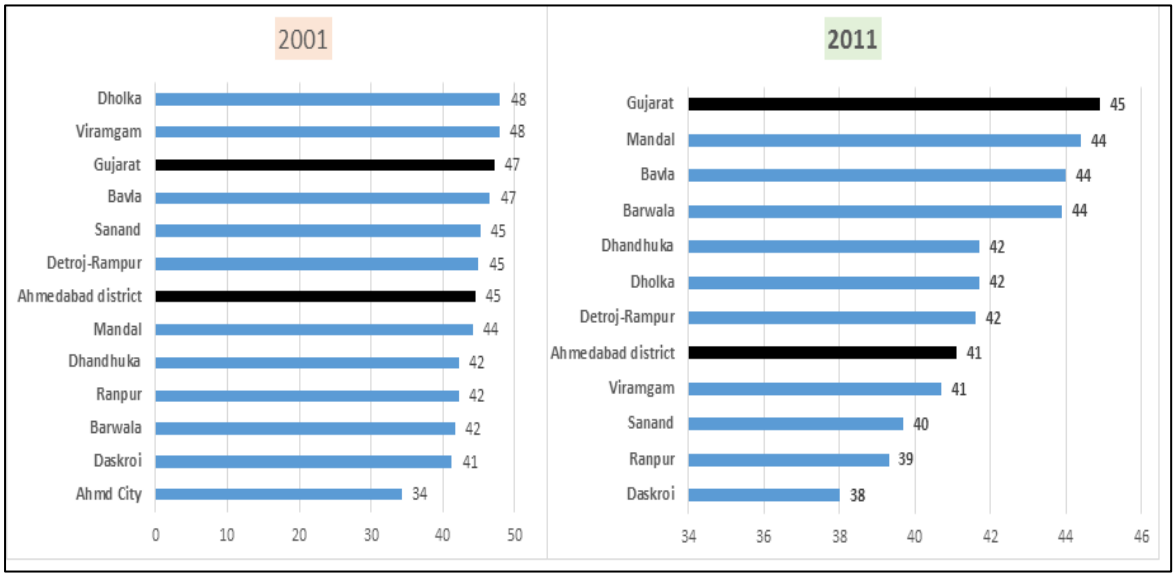
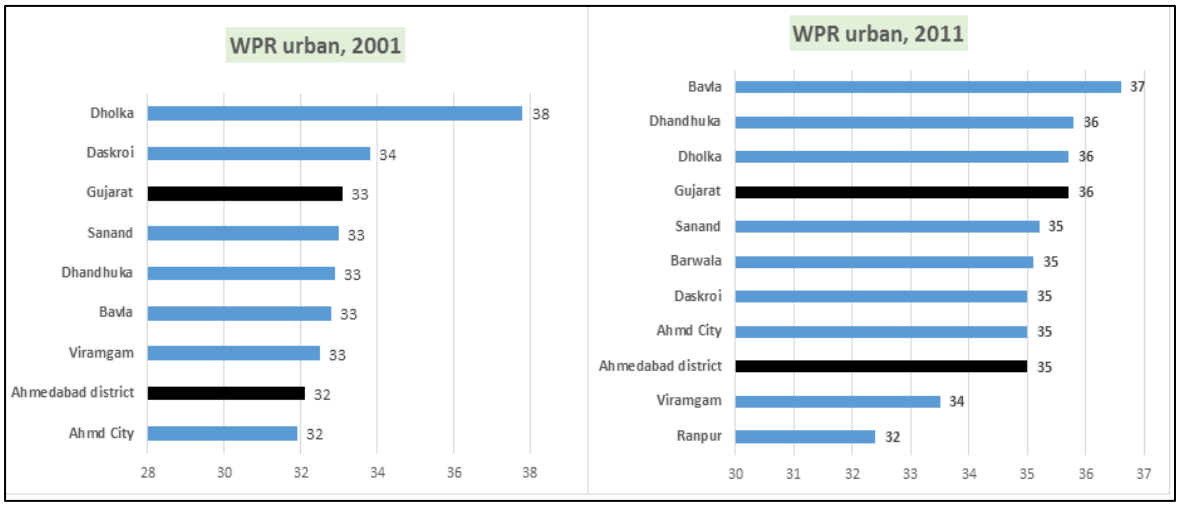


Figure 5.5c, 5.5d: Work participation rates (all persons), URBAN (2001, 2011)



Note: The talukas of Mandal, Detroj-Rampur, Ranpur and Barwala are "rural" talukas and hence not included here.

5.3.2 Enterprises and Employment:

We conclude the previous section with a brief discussion on the **enterprises and employment** in the sectors other than agriculture (plantation and crop production), defense and public administration. The latest Gujarat Economic Census (*6th Economic Census, 2013, Gujarat Report: Provisional Results*) has termed the enterprises in these sectors as "establishments". The official definition of an "establishment" according to the Gujarat Economic Census (2013) is " a unit situated in a single location in which predominantly one kind of economic activity is carried out such that at least a part of the goods and/or services produced by the unit goes

for sale". Establishments includes all sectors other than crop production, plantation, public administration, defense and compulsory social security. It is important to note that the growth rate in the number of establishments is higher in the state of Gujarat than the national average. For example, the growth rate in number of establishments over the Fifth Economic Census (2005) is 41.7% for India, while it is 66.6% for the state of Gujarat. The provisional results from the latest Economic Census (2013) also suggests that out of total establishments in the state, 59.26% (23.95 lakhs) are in rural areas and 40.74 % (16.47 lakhs) in the urban areas. The districts of **Ahmedabad**, Surat, Banaskantha, Bhavnagar and Kheda account for about 41% of total number of establishments. The table below presents the number of establishments of the 5 high performing districts in the state.

Table 5.9: Ranking of districts in terms of number of establishments, 2013

Top 5 districts: Number of establishments (*Economic Census, Gujarat Report, 2013, provisional results*)	
Ahmedabad	421066 (10.42%)
Surat	364526 (9.08%)
Banas Kantha	309527 (7.66%)
Bhavnagar	284211 (7.03%)
Kheda	259373 (6.42%)

Note: Figures in brackets are percentage share of district in state total

An important component of the establishments is .handicrafts/handloom. Again, the districts of Surat, Ahmedabad, Rajkot, Bhavnagar and Vadodara account for about 60% of the total number of handicraft/handloom establishments in the state (*Economic Census, Gujarat Report, 2013*). In terms of employment generation from these establishments, five districts including Ahmedabad have the combined share of about 42.12% of total employment at the state level. The following table shows the latest figures for employment in these establishments (6th Economic Census, Gujarat Report).

Table: 5.10: Top 5 districts in employment generation in establishments, 2013

Top 5 districts in employment generation in establishments 6th Economic Census, Gujarat Report (provisional numbers)	
Surat	1204083 (12.90%)
Ahmedabad	916111 (9.82%)
Banas Kantha	639096 (6.85%)
Bhavnagar	591731 (6.34%)
Rajkot	579269 (6.21%)

Note: Figures in brackets are percentage share of district in state total

However, when the overall growth rate of both establishments and employment generation are compared across two Economic Census years (i.e., 5th EC, 2005 and 6th EC, 2013), the overall rank of the district of Ahmedabad is lower than several other districts such as Banas Kantha, Panchmahal, Sabarkantha and Bhavnagar where employment generation recorded over 60% growth over the period of 2005 and 2013. The following table shows the relative ranking of Ahmedabad as compared to the high performing districts between 2005-13.

Table 5.11: District-wise percentage growth in establishments and employment generation between two *Economic Census* years (2005-2013): Performance of Ahmedabad district vis-à-vis top 5 districts

Percentage Growth in establishments	
Bhavnagar	226.48
Banas Kantha	183.70
Panch Mahals	165.78
Navsari	88.73
Sabar Kantha	86.73
Ahmedabad	**53.61**
Percentage growth in employment	
Banas Kantha	153.78
Bhavnagar	143.49
Panch Mahals	128.04
Kachchh	92.73
Sabar Kantha	87.55
Ahmedabad	**28.79**

Source: 6th Economic Census, Gujarat Report, 2013 (provisional results)

Hence, although the overall performance of Gujarat as a state in terms of employment growth in establishments over the two Economic Censuses (5th and 6th) was impressive-53% for Gujarat as opposed to a national average of 34.4%-the performance of Ahmedabad district was not particularly encouraging. It remains to be seen if this lag in employment was absorbed in other sectors such as agricultural and micro, small and medium enterprises (MSME). The later discussion on an expanding urban informal economy of the Ahmedabad district perhaps explains part of the story.

Gujarat is considered one of the most industrialized states in India. Over the years, a significant proportion of agricultural workers have successfully moved into industry. This growth in industrial sector has been often attributed to the spirit of entrepreneurship of Gujaratis as well as supportive policies from the state government. Recently, the government of Gujarat has declared the Industrial Policy-2015 which aims at creating a healthy and

conducive climate for conducting business and industrial production (*Socioeconomic Review, Gujarat, 2014-2015*). **The Micro, Small and Medium Enterprises (MSMEs)** are the backbone of industrial development in the state. The MSMEs were brought into action by the MSME Development Act of 2006 where 312752 small scale industries (SSI) were registered generating 1489216 employment in the state. The Socioeconomic Review (2014) further reports that during the period between 2006 and 2014, the total number of MSME stood at 6.03 lakhs generating employment to 38.51 lakh people in the state. MSMEs include entrepreneurial units engaged in textiles, food products, chemical products, rubber and plastic, wood, paper and printing, leather, beverages, tobacco, electrical machinery and apparatus. The following table shows district-wise registered MSME in Gujarat. As the table suggests, Ahmedabad district has one of the highest number of registered SSIs in the state.

Table 5.12: District-wise ranking of % share of SSI units, 2014

District	No. of SSI units (% share)
Surat	44.38
Ahmedabad	26.36
Rajkot	7.8
Vadodara	4.7
Bharuch	2.07
Jamnagar	1.89
Valsad	1.75
Bhavnagar	1.67
Gandhinagar	1.09
Anand	0.95
Navsari	0.94
Surendranagar	0.8
Mehsana	0.78
Sabarkantha	0.75
Kachchh	0.62
Banaskantha	0.52
Junagadh	0.51
Panchmahal	0.46
Kheda	0.4
Amreli	0.36
Narmada	0.28
Patan	0.23
Porbandar	0.23
Dahod	0.17
Tapi	0.16
Dang	0

***Source**: Industries Commissionerate, Government of Gujarat. Accessed: http://ic.gujarat.gov.in/*

The MSME are required to file Entrepreneurs Memorandum (EM), Part -1 to District Industries Centre for starting an industrial project. On completion go the project, the entrepreneur concerned is required to file the Entrepreneurs Memorandum (EM), Part II. The EM-Part II is an important source of data to understand the performance of MSME in terms of employment generation. Below, we present a table that provides information on the performance of talukas in the Ahmedabad district in terms of MSME employment generation. Investment in MSME units and associated employment generation is highest in the city of Ahmedabad. The rural talukas and those that are away from the urban areas record low levels of investment and employment. Though state government policies have been overall favorable to support MSMEs, there seems to remain an urban-rural gap which in turn can lead to unorganized rural-urban migration and a proliferation of an unregulated urban informal economy.

Table 5.13: Taluka-wise EM-II Report, Ahmedabad district (2006-2014)

Taluka	Units	Investment (Rs in lakh)	Employment (% share)
Ahmedabad city	67493	1572495.54	93.85
Barwala	4	788.44	0.01
Bavla	203	25510.4	0.85
Daskroi	381	25505.55	1.18
Detroj-Rampura	19	731.86	0.08
Dhandhuka	16	3110.44	0.12
Dholka	127	13620.48	0.51
Mandal	7	620.8	0.03
Ranpur	13	1401	0.09
Sanand	719	104113.72	3.16
Viramgam	32	3641.05	0.11
Total	69014	1751539.27	100.00

Source: Industries and mines department, Government of Gujarat

5.3.3 Special Economic Zones:

Finally, a discussion on the **Special Economic Zones (SEZs)** is crucial in any evaluation of employment since these zones are known for significant employment generation. The special economic zones were introduced in India through the SEZ Act of 2005. The goal of this Act was to generate additional economic activity and draw foreign and direct investments in India leading to an expansion of productive capacity and employment generation. Gujarat was in the forefront of utilizing this opportunity of increased capital investment and economic

expansion. The Gujarat government introduced the Gujarat Special Economic Zone Act of 2004 and Kandla and Surat were one of the first SEZs that were set up in Gujarat. Later, by subsequent revisions in the SEZ Acts, more such economic zones came into operation. SEZ units were set up in Kandla, Surat, Jamnagar, Bharuch, Kachchh, Gandhinagar and Vadodara. Here, we present recent information on functional SEZ units in the district of Ahmedabad.

Table 5.14: Exporting SEZs in Ahmedabad (current as on March, 2015)

SEZ name	Location	Type	Notification date
Zydus Infrastructure	Sanand, Ahmedabad district (under Kandla SEZ)	Pharmaceutical	2006
GIDC Apparel Park	Ahmedabad (under Kandla SEZ)	Apparel	2007

Source: Ministry of Commerce and Industry, Government of India.

Lying in the cusp of Ahmedabad and Gandhinagar districts, the Dholera Special Investment Region (DSIR) was declared by the government of Gujarat on May 2009 (http://dholerasir.com/). This was the first Special Investment Region (SIR) of its kind in the country. The DSIR is located on a Greenfield site at about 100 kms south of Ahmedabad and 130 kms from Gandhinagar. The DSIR includes 19 villages of Dhanduka taluka and 3 villages of Barwala taluka (a total of 22 villages in the Ahmedabad district) making it the largest investment nodes in the Delhi-Mumbai Industrial Corridor. It is expected that this SIR will expand industrial output of the state and provide employment opportunities to several in the region.

5.4 Household Assets and Amenities

Consumption patterns through access to amenities such as clean water, clean cooking fuels, electricity, sanitation and access to information through television and phone are important indicators of quality of life. Studies have consistently demonstrated the importance of electricity that facilitates education or access to clean water and sanitation amenities and its implication to the overall public health system. In other words, provision of basic services are crucial for people in nurturing their capabilities. In this section, we provide a description of such services in both rural and urban areas of Ahmedabad district to assess the success of public policies and identify the challenges facing them.

5.4.1 House Hold lighting:

Household lighting is an important indicator of social and human development. Out of the total 1.22 crore households in Gujarat, about 1.1 crore households have electricity facility inside the house (about 90% of all households). About 9.83 lakhs households use kerosene as the main source of lighting (8.07%) and 26.2 thousand households (0.21%) use other oil as the main source for lighting. Only 0.13% of the total households use solar energy as the main source of lighting. There are still 1.16 lakh households in Gujarat which lack lighting facility inside their houses–about 0.95% of all the households in the state (Census, 2011).

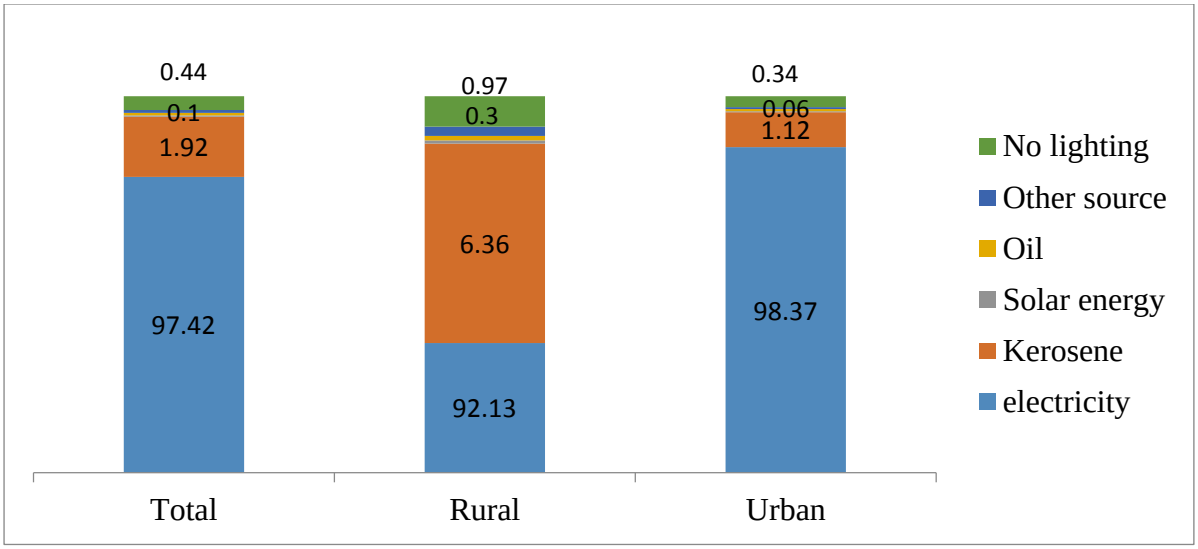
Ahmedabad district too has satisfactory coverage of access to lighting facility. About 97.41% of all households in Ahmedabad district have lighting facility in their houses. In rural areas, the percentage households with electricity are 92.12% and in urban areas it is 98.37%. About 28.7 thousand households in the district use kerosene as the main source of lighting. This is the primary source of lighting both in rural as well as urban areas. Only 231 households in rural areas and 393 households in urban areas use solar energy as the source of lighting. That equals about 4% of all households with electricity facility in the district. Oil is used as a source of lighting more in urban areas than that in rural areas. Out of the total number of households without lighting facility (6511), 4.2 thousand households belong to urban areas and about 2.2 thousand households belong to rural areas (Census, 2011). The following table and figure shows the household lighting situation in the district of Ahmedabad by the last Census.

Table 5.15: Main Source of Lighting: Gujarat and Ahmedabad district (Census 2011)

State / District	Rural/Urban	No of Households	Percentage of households using					
			Electricity	Kerosene	Solar Energy	Oil	Other	No lighting
GUJARAT	Total	12181718	90.41	8.08	0.13	0.21	0.21	0.96
	Rural	6765403	84.98	12.85	0.21	0.31	0.29	1.36
	Urban	5416315	97.19	2.12	0.04	0.10	0.11	0.45
AHMEDABAD	Total	1494656	97.42	1.92	0.04	0.08	0.10	0.44
	Rural	228886	92.13	6.36	0.10	0.14	0.30	0.97
	Urban	1265770	98.37	1.12	0.03	0.07	0.06	0.34

Source: Census, 2011

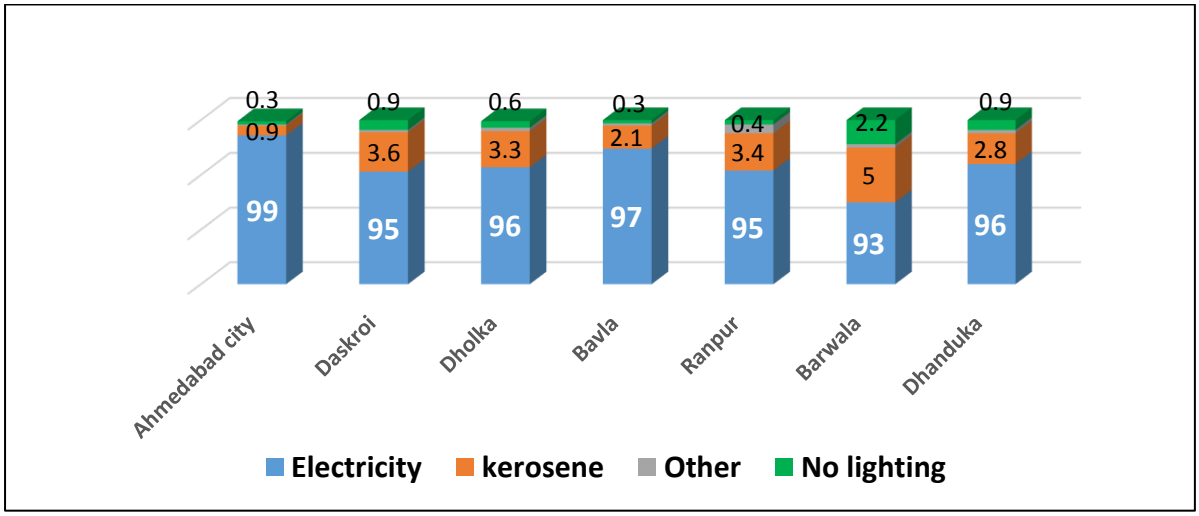
Figure 5.6: Main source of lighting in Ahmedabad district (%) (Source: Census, 2011)



Source: Census, 2011

The above data demonstrates that the lighting facilities in Gujarat are satisfactory though dependent mostly upon non-renewable energy sources. Effective education, marketing and affordability of the solar products would help promoting people to opt solar energy as their main source of lighting.

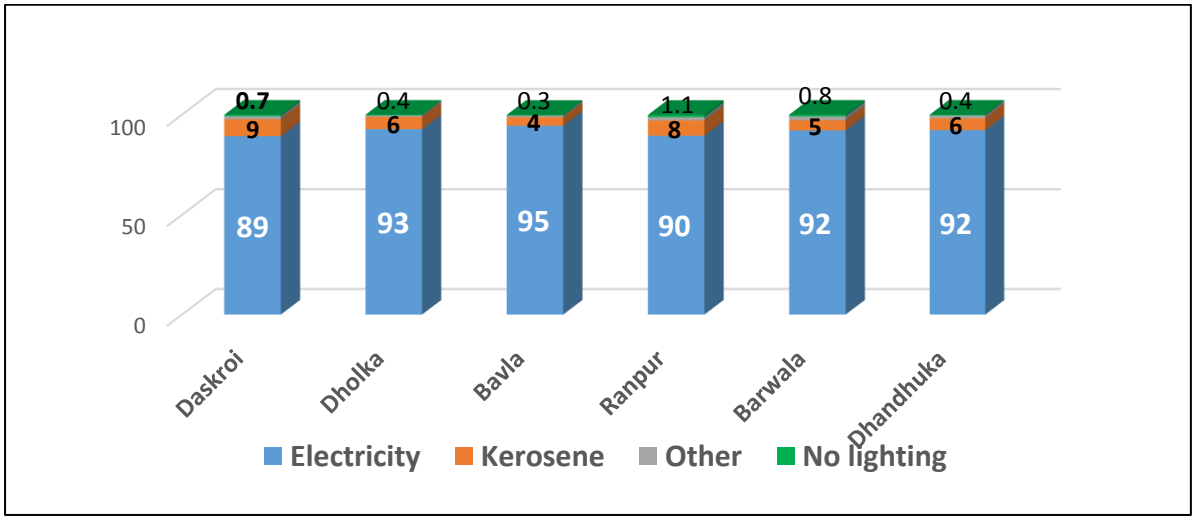
Figure 5.7: Distribution (%) of lighting by source, taluka wise (Urban), 2011



Source: Census, 2011

A taluka-wise analysis reveals an overall higher proportion of households enjoying electricity as their main lighting source in the district. Marginal differences in lighting source exist between rural and urban talukas. For example, there seems to be some reliance on kerosene in certain rural talukas, when compared to their urban counterparts. However, on average, over 90 percent of households in both rural and urban talukas in the district enjoy electricity. This story resonates with the state of Gujarat being one of the leading states in the country in terms of power supply and power surplus generation.

Figure 5.8: Distribution (%) of lighting by source, taluka wise (Rural), 2011



Source: Census, 2011

5.4.2: Drinking Water:

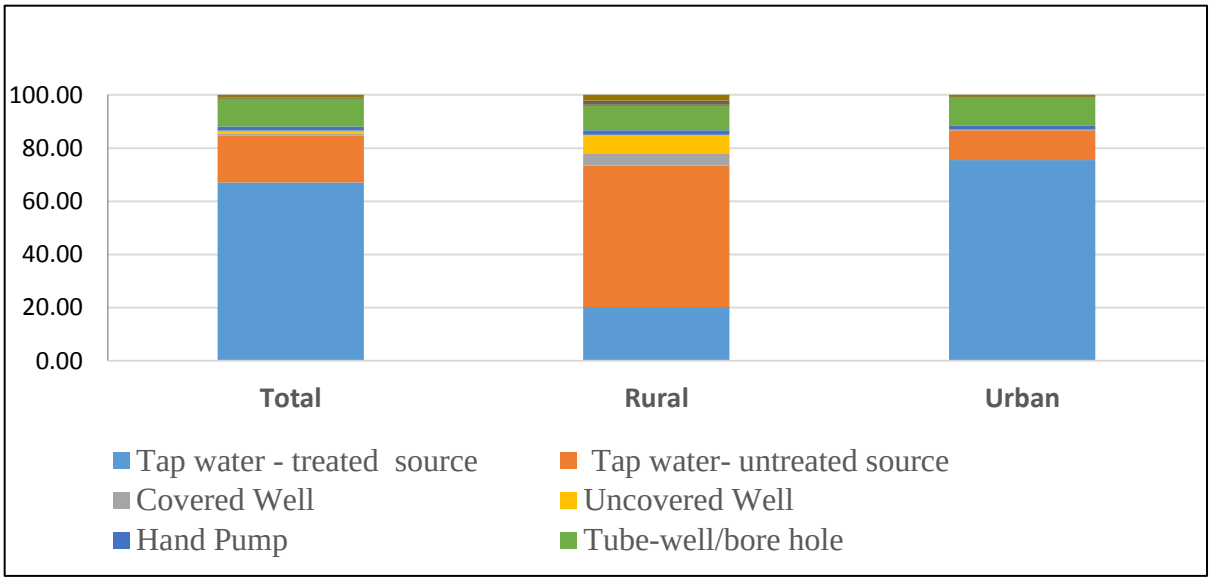
Clean Drinking water is another very important determinant of human development since a healthy population (free of water borne diseases known to be common in the developing context) is crucial to realize the potential of human capital. The following table and the figure provide an overview of drinking water facilities and utilization pattern among the rural and urban households in the district.

Table 5.16: Main Source of Drinking Water , 2011

			Percentage of households using									
	Rural/Urban	No of Households	Tap water - treated source	Tap water- untreated source	Covered Well	Uncovered Well	Hand Pump	Tube-well/ bore hole	Spring	River/ Canal	Tank/ Pond/ Lake	Other Sources
GUJARAT	Total	12181718	39.85	29.18	2.30	4.79	11.62	9.60	0.09	0.34	0.22	2.00
	Rural	6765403	16.68	39.10	3.75	8.36	18.23	10.88	0.14	0.54	0.36	1.97
	Urban	5416315	68.78	16.80	0.49	0.34	3.37	8.01	0.03	0.09	0.05	2.04
AHMEDABAD	Total	1494656	67.03	17.63	0.77	1.16	1.52	10.58	0.03	0.16	0.23	0.88
	Rural	228886	20.23	53.21	4.36	7.18	1.68	9.22	0.06	0.55	1.34	2.17
	Urban	1265770	75.49	11.20	0.12	0.07	1.49	10.82	0.03	0.09	0.03	0.65

***Source**: Census, 2011*

Figure 5.9: Sources for Drinking Water in Ahmedabad district (%) Census,2011



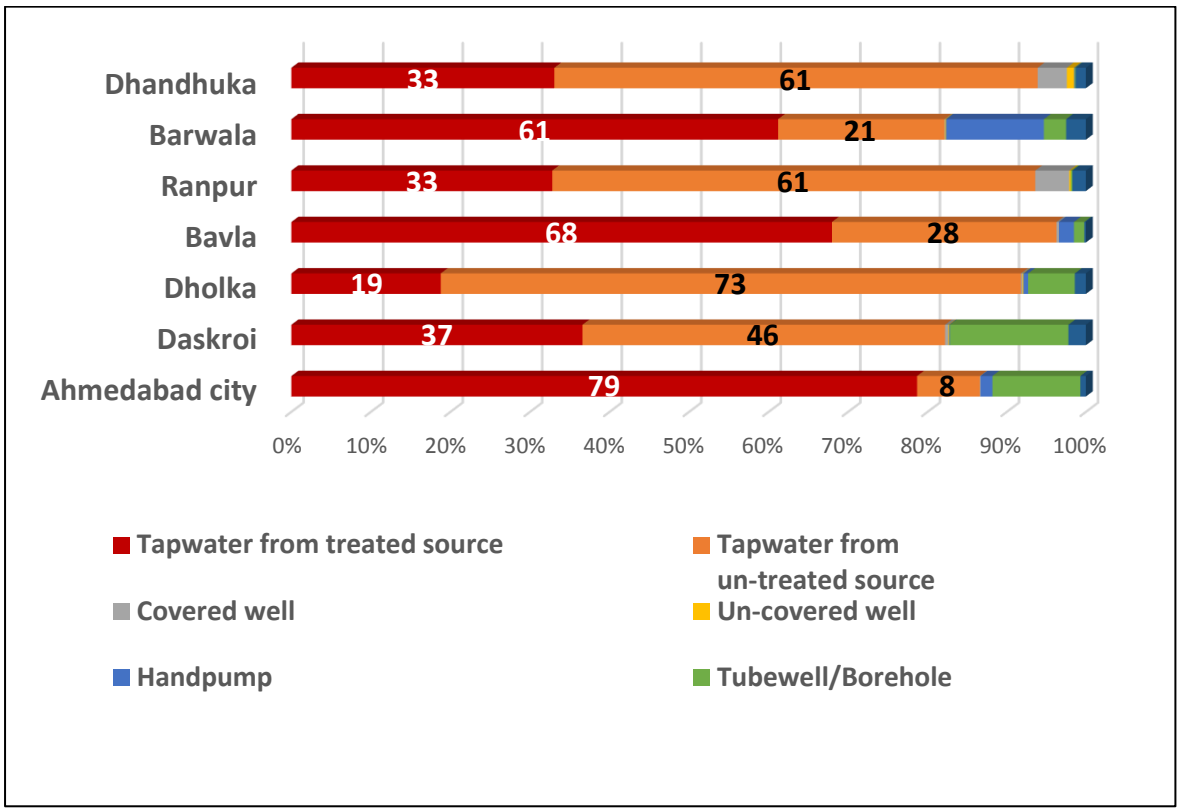
The above data demonstrates that about 39.45% of the total households in Gujarat receive tap water from treated source, whereas 29.18% of the households receive untreated tap water. Untreated well is the third largest source of drinking water. In rural areas, the number of households receiving untreated tap water is more than the number of households receiving treated tap water.

Members of about 5.83 lakh households in Gujarat fetch water from untreated wells, out of which 5.65 lakh households belong to rural areas and 2.79 lakh households have covered well as primary source of drinking water. Overall 11.62% of the households in Gujarat are dependent upon hand pump and 9.60% are dependent upon tube-well or borehole. About 80 thousand households are dependent upon natural sources of water such as pond/lake/river or spring to meet their drinking water needs.

At the district level, the rural-urban gap in access and utilization of treated tap water persists as per the latest Census. For example, out of the total 14.94 lakh households, about 10 lakh households receive treated tap water whereas 2.6 lakh households receive untreated tap water. Only 20.23% of the households in rural Ahmedabad received treated tap water in 2011. This percentage was 75.49% in urban areas in Ahmedabad. About 53.20% households in rural areas receive untreated tap water which might be harmful to their health. About 1.94% households in rural areas were still dependent upon natural sources of drinking water. In urban areas too, 0.15% households are dependent upon natural resources of water such as river/pond/lake or spring. Tube-well and borehole still remain the primary source of water among 12.09% of the households in Ahmedabad district, maximum households of which belong to rural areas (Census, 2011)

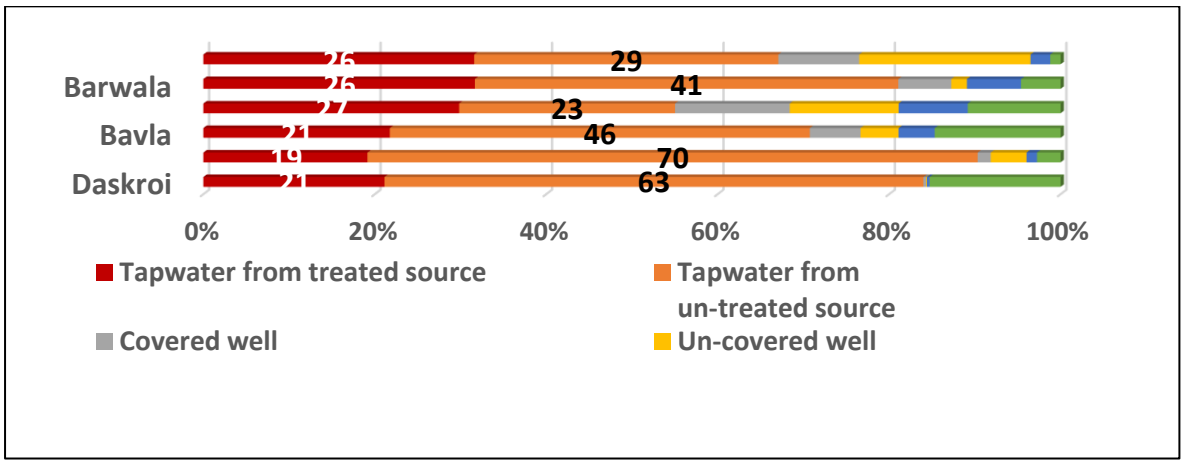
It is important to note that unclean/untreated drinking water is one of the most common causes for diseases such as diarrhea, dysentery, and cholera. It is perhaps disappointing to note that although public health intervention and policy to provide clean drinking water remains one of the easiest preventive strategies, there has been a general lack of awareness and initiative in mitigating the rural-urban gap in clean water access and utilization.

Figure 5.10: Percentage Distribution of Drinking Water Source by Urban Talukas, Ahmedabad District (2011)



Source: Census (2011)

Figure 5.11: Percentage distribution of drinking water source by rural talukas, Ahmedabad District (2011)



Source: Census (2011)

Following the previous discussion of an overall rural-urban gap in availability and access of clean drinking water, we look at these **differences by talukas in the district**. Not surprisingly, the rural-urban schism persists. What is most alarming is that in both urban and rural talukas, a high proportion of households still rely on drinking water from an untreated source, though the availability issue is more acute in the rural talukas. For instance, among the urban talukas of the district, the talukas of Dhandhuka and Dholka have more than fifty percent of households relying on untreated drinking water sources. In contrast, the city of Ahmedabad reports almost 80 percent of households having access to a treated tapwater source. The picture is more dismal for rural talukas. There is a predominantly high reliance on untreated tapwater source and uncovered wells across most rural talukas. These numbers when combined with the health data (i.e. incidence of diarrhea and water borne diseases; see the "Health" chapter for details) reveal a remarkably consistent story of lack of availability and access to clean drinking water and its implication on health outcomes. This is indeed a public health emergency and warrants targeted intervention at the civil society and policy levels.

5.4.3 Household Assets and Possessions:

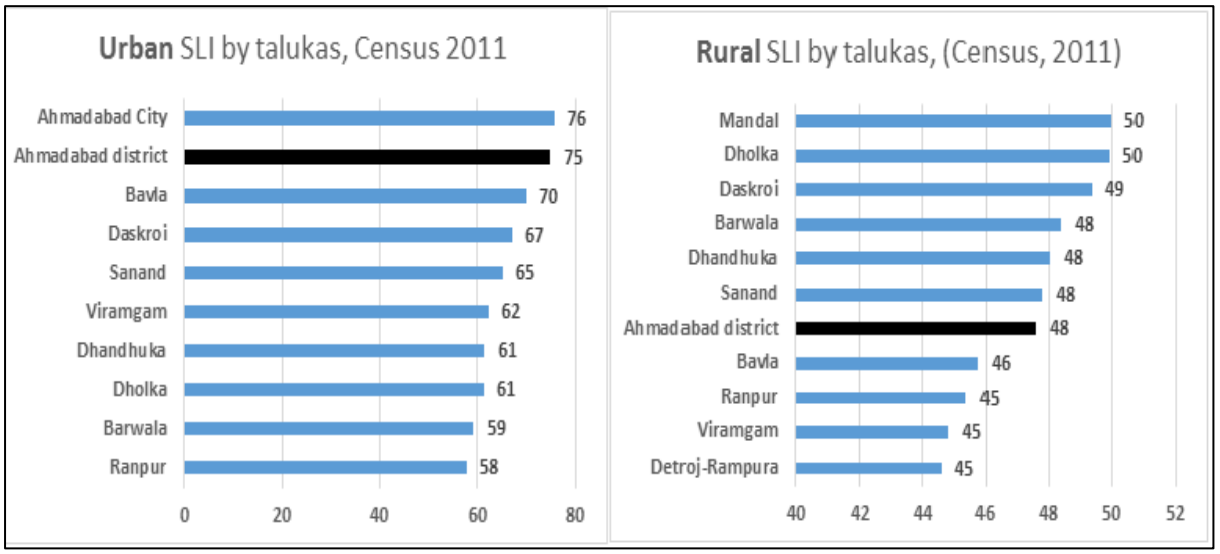
Household assets and possessions are not only important determinants of the economic status of the household but also reflect the economic context of the area. Since rural and urban inequality in terms of access to public resources and asset holding is still prevalent in India, all comparisons show differences and/or commonalities in both rural and urban regions of the district.

Providing electricity, clean water, clean cooking fuels and sanitation facilities are often discussed in the context of the public role of the state. From the household point of view, having access to these basic provisions, structure of the house, ownership of the house and owing other household assets (such as television, bicycle, motorized vehicle) and access to banking facilities are indicative of a household's economic position.

Census asks all households their access to certain basic provisions and housing amenities. We created a measure of **household standard of living** (SLI) by computing a simple average of 12 household amenities and assets. The items included in the index are: (1) condition of residence considered "good" by Census (2011) definition, (2) house ownership, (3) access to clean tapwater from a treated source, (4) location of water source within the household

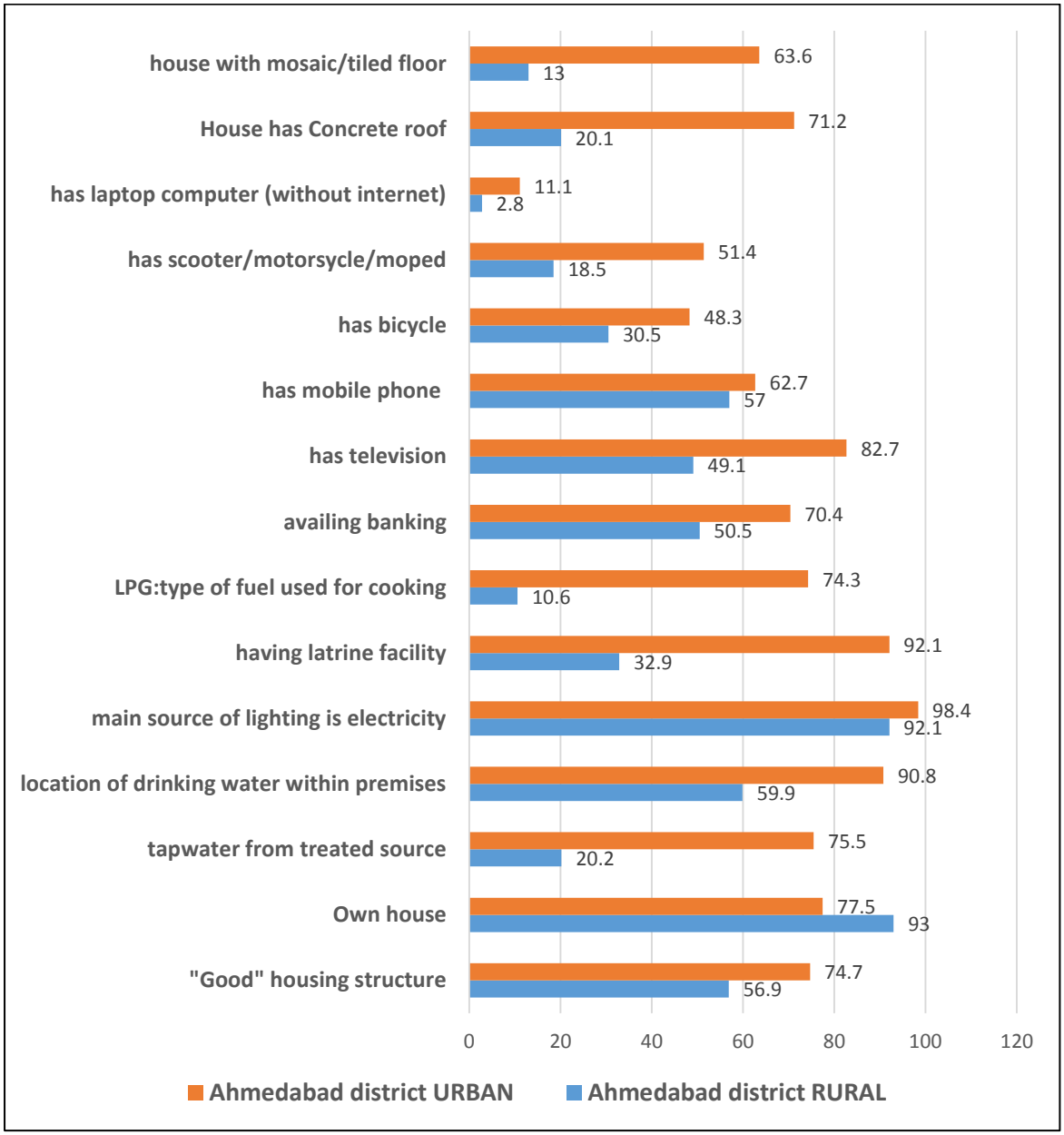
premises, (5) electricity as the main source of lighting, (6) has latrine facility in the household, (7) use of LPG/PNG as cooking fuel, (8) access to banking facilities, (9) has a television in the household, (10) household has mobile phone, (11) household has a bicycle, (12) household has a motorized vehicle (motorcycle, moped or scooter). *The average SLI score for urban Ahmedabad was 65 and for rural talukas in the district was 45, suggesting a significant gap in access and household possession*. The ranking of the talukas by the SLI score for both rural and urban Ahmedabad is presented below.

Figure 5.12a, b: Standard of Living scores by talukas in Ahmedabad district (Urban, Rural-2011)



Clearly, as Figures 5.12a and 5.12b suggest, households in Ahmedabad city seem to enjoy better access and are also wealthier. Overall, though there seem to be a distinct urban advantage (urban households generally report higher levels of access and asset holding), inequality of household provisions and amenities is perhaps sharper in the urban locations. The households in the urban areas of Barwala and Ranpur seem to have poorer quality of life as compared to their urban counterparts. Among the rural talukas, Detroj-Rampura, Ranpur and Viramgram have poorer household amenities and hence presumably poor quality of life.

Figure 5.13: Household amenities and possessions by place of residence (%), Ahmedabad district (Census, 2011)



Additionally, separate analysis have been conducted to map the rural-urban differences in asset holding in the district. Since assets are acquired over a longer period, household possessions are stable indicators of a household's medium-or-long term economic standing as opposed to more volatile annual income or consumption measures. As shown in Figure 5.13 rural households in Ahmedabad district report lower levels of asset holding and household amenities as compared to their urban counterparts in all the indicators used. Though home ownership is higher among rural households, but the structure and quality of

these homes are poorer, as evident from the lower percentages of concrete roofed, tiled floor houses in the rural areas. From the public policy and public health perspective, rural households in the district are still lacking in access to clean water, sanitation facilities and clean fuel. Interestingly, rural-urban differences are narrower in mobile phone ownership and electricity as the main source of lighting, reflecting the state of Gujarat's overall success with communication technology and power supply.

5.4.4 Sanitation:

Figure 5.14 presents households by talukas that reported having no latrine facility at home and prevalence of open defecation. Research on health outcomes suggests that lack of access to appropriate sanitation facilities is an important determinant of gastrointestinal diseases. Diseases such as diarrhea and typhoid are common in India among both children and adults, part of which can be explained by inadequate toilet facility. This lack of social investment in sanitation systems have recently caught the national imagination and have become an important policy debate. Surprisingly, the state of Gujarat that has experience steady GDP growth in the last few decades, still grossly lacks in appropriate sanitation systems. Though, as Table 5.17 (prepared by the *District Rural Development Agency, Ahmedabad*) suggests that meeting the toilet construction target has been reasonably satisfactory over the last few years. There has been a dip in the achievement in the 2014-2015 cycle, but overall the achievement in terms if meeting toilet construction target has been on the rise. This stands in sharp contrast to the sanitation reality of the district since open defecation remains pervasive. The figure below however suggests that open defecation in the rural areas of the state as well as of Ahmedabad district is rampant (66% household reporting open defecation, Census, 2011). All rural talukas in the district have more than 50 percent of households that report relying on open defecation. The rural talukas of Ranpur (75%), Detroj-Rampura (74%), Sanand (72%) and Viramgram (82%) report very high levels of open defecation suggesting poor quality sanitation and higher likelihood of exposing people to water-borne communicable diseases.

Figure 5.14: Sanitation Crisis: Lack of Toilet Facilities and Open Defecation By Place Of Residence And Talukas, 2011

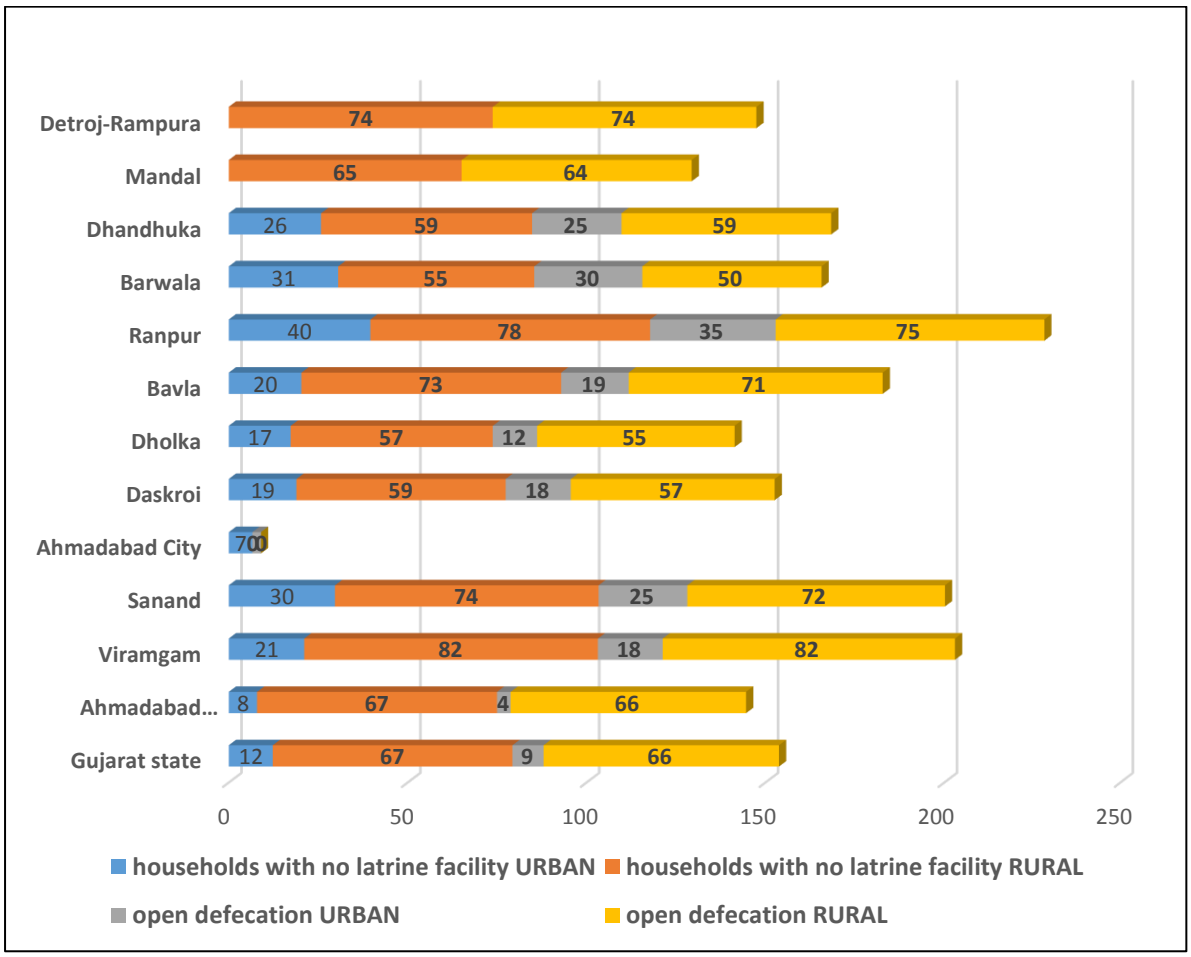


Table 5.17: Annual toilet target and achievement, Ahmedabad (2010-2015)

Year	Toilet Target	Toilet Achievement	Percentage
2010-2011	32794	20050	61.14
2011-2012	13763	10849	78.83
2012-2013	14000	18065	129.04
2013-2014	14000	8733	62.38
2014-2015	24000	11887	49.53
2015-2016		69584	

Source: District Rural Development Agency, Ahmedabad

Finally, there has been an increasing interest among social researchers to examine **household fuel** use as this seems to be a determinant of health and well-being, especially in the developing world. Studies have shown that the use of biomass energy in traditional stoves in still common in India, though use of modern fuels such as LPG/PNG has increased. In particular, more than 60 percent of rural households in the district report using fire hood as

the primary source of cooking fuel (See Figures 4.15a and 5.15b). Since most of the cooking is done inside the home and the smoke from the *chulah* is trapped inside, this suggests very high levels of indoor pollution and higher risk of lung diseases among women and small children. In sharp contrast, households in the Ahmedabad city and the urban areas of the district seem to enjoy access to cleaner forms of energy.

Overall, **significant rural-urban inequality persists** in the district of Ahmedabad which make the livelihood conditions and experience of the rural and urban households marked. These trends raises questions whether Gujarat's economic growth has been conducive to human development through societal investments, effective interventions and technological solutions in sanitation, clean water and clean household fuels to improve the livelihood conditions of the rural households.

Figure 5.15a: Fuel-use by talukas in Ahmedabad district (Rural, 2011)

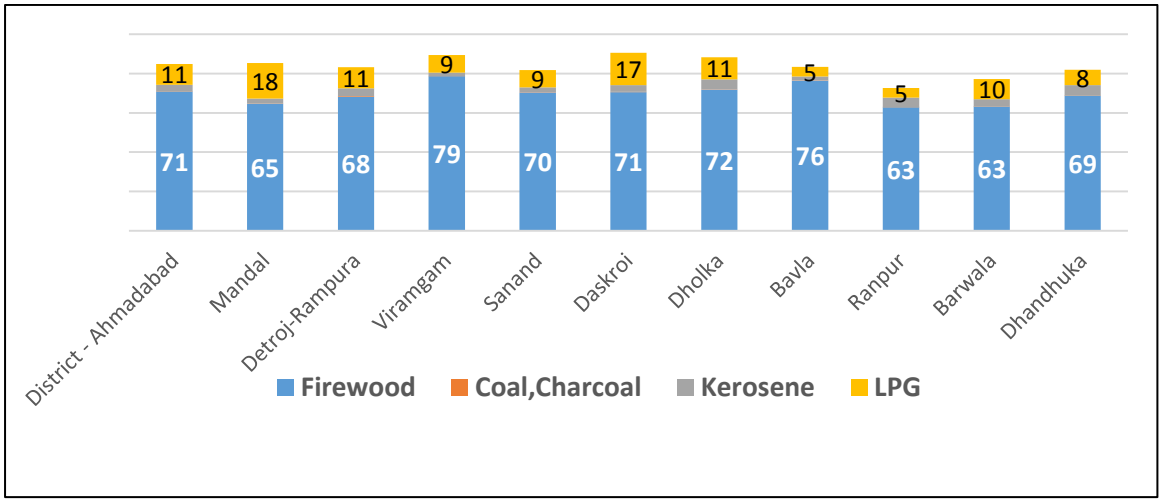
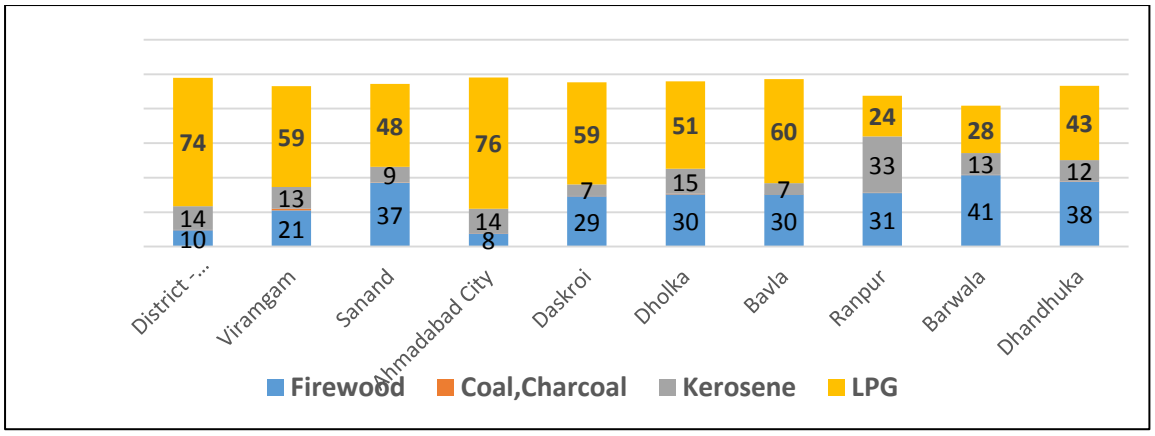
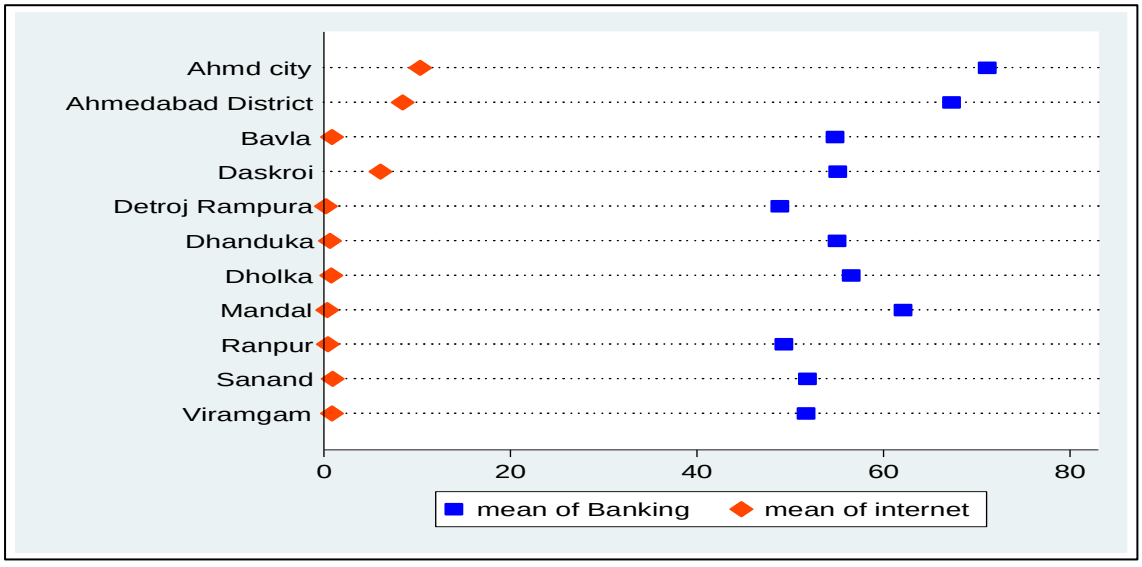


Figure 5.15b: Fuel-use by talukas in Ahmedabad district (Urban, 2011)



We conclude this discussion on household amenities and standard of living with a brief note on financial inclusion and internet connectivity in the district. With the recently launched programs such as Pradhan Mantri Jan Dhan Yojana (2014) where each family will be encouraged to open a zero balance bank account with generous insurance coverage, the Central government has been making efforts to bring all families (rural and urban) into the financial network. The Census 2011 however suggests that while financial inclusion will remain a challenging and perhaps distant goal overall, the challenge will be significantly higher to bring rural households into the banking network. In the figure below, most talukas in the district are below the state average in terms of availing baking facilities, with the predominantly rural talukas of Detroj-Rampura and Mandal being the worst performers. Similar observations may be made about the internet connectivity in the light of the "Digital Gujarat" (2015) campaign launched recently by Gujarat Chief Minister, Smt Anandiben Patel. The goals of e-governance and wi-fi enabled villages will be an arduous task for the state government since the latest Census (2011) shows abysmal figures on internet use and connectivity in all talukas excepting Ahmedabad city.

Figure 5.16: A taluka-wise overview of financial inclusion and internet connectivity, Ahmedabad district, 2011



Source: Census, 2011; Primary Census Abstract, Ahmedabad District, Gujarat, Series 25, Part XII-B, Directorate of Census Operations.

In the figure 5.12, financial inclusion has been measured by the percentage of households that are availing banking facilities and internet connectivity has been captured using the percentage of households that have laptop/computer with internet.

5.5 Poverty by Talukas in the District

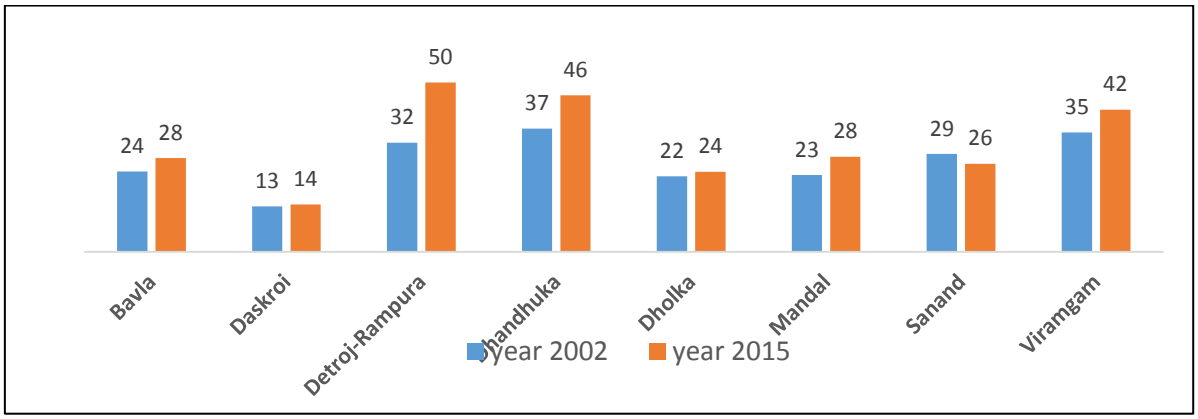
Finally, we provide a description of talukas based on families below the poverty line (BPL). Identifying the poorest of the poor families and providing targeted poverty alleviation intervention programs remain a big challenge for governments in the developing world. Part of this challenge lies in the fact that reliable estimates of vulnerability are difficult to obtain. Most household surveys in India do not collect information on income; instead household consumption and expenditure are used as proxies to household income. Poverty, after all, is multidimensional and hence any single measure is inadequate to accurately capture vulnerability. In the last two *Socioeconomic Surveys* (led by the Ministry of Rural Development) in Gujarat (2002 and 2014), BPL families were identified based on scores and not on consumption expenditure. The score based identification of BPL families included 13 indicators with 0-4 scores attached to each of them. Each household that was part of the survey has been assigned a score and the economic status of the household is then determined based on the average score of the region (village, city). The indicators included a range of socioeconomic variables including size of operational holding (in hectares), type of house (houseless, kutcha, pucca, seminpucca, urban), availability of clothing, sanitation amenities, food security, ownership of consumer durables, literacy status of the highest literate adult, status of children's education and means of livelihood. Households received scores anywhere between 0 through 52. The households that had scores between 0-16 were considered the poorest (For the list of indicators used in the scoring system, see: http://ses2002.guj.nic.in/ScorePattern.aspx).

We have offered a description of BPL families by talukas for the years 2002 and 2014 for those families that had scores between 0-16. Total household surveyed in 2000 was 347027 while in 2014, it was 244973. The figure shows that total number of BPL families in all talukas have increased from 2000 to 2015, except Sanand. However, it is not easy to conclude that poverty has deepened as change in poverty figures could be as a result of the method and the

sampling strategy used in the surveys. With more available data, this story of economic deprivation will be clearer.

Again, given data unavailability, we are unable to examine the factors associated with low levels of economic wellbeing among the families in the talukas. Based on existing studies, our best guess is that economic deprivation is often a combination of lack of economic resources, education and socio-religious factors (e.g. belonging to lower castes and minority religion) that restrict economic mobility. Perhaps, targeting the poor households that are also from backward castes and religious minority groups can help these households in overcoming multiple socio-economic disadvantages. Again, the figures below suggest a clear rural-urban divide in economic wellbeing reinforcing our previous concern of regional inequality in the district. These patterns of regional inequality and socioeconomic disadvantages, though, are similar to the overall picture of economic vulnerability in the country.

Figure 5.17: Poorest of the poor families (scores 0-16) by talukas in the Ahmedabad



Sources: Socioeconomic Survey (2002-2003), Available at: http://ses2002.guj.nic.in/; District Rural Development Agency (DRDA), Ahmedabad
Note: The talukas of Barwala, Ranpur and Ahmedabad city are not presented since data for both 2002 and 2015 were not available

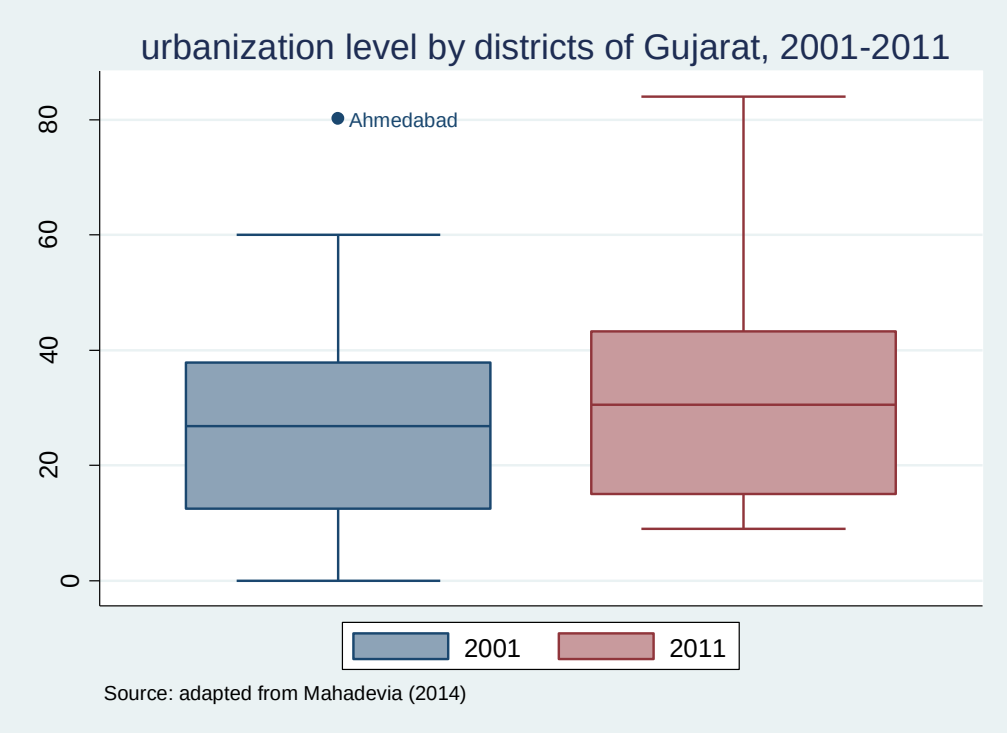
5.6 Urbanization, Informality and Human Development

Urban development in low income countries is often linked with increasing informalization of employment. Informalization is a double-edged sword. While it provides some sort of economic security to the poor, it harms worker's protection, earning predictability and social benefits. One of its macroeconomic implication is in reducing the tax base. Understanding the informal economy is critical to assess how sustainable human development is. Gujarat is the fourth most urbanized state in India with 42.58 percent of its population living in towns and

cities (Mahadevia, 2014). The urban development paradigm of the state has received both praise and criticism from the policy and scientific communities. In this section, we draw from existing studies on the dynamics of urban development to examine questions including the nature of urban development and whether or not it has been inclusive in terms of employment and living conditions. The focus of the section will be on Ahmedabad city as studies tend to suggest that the "shining" part of Gujarat's urban development story is the one that is most closely associated with the fastest growing metropolitan city of Ahmedabad.

Figure 5.18 presents boxplots showing the urbanization levels by districts in the state of Gujarat for 2001 and 2011. The district of Ahmedabad stands out as a clear "outlier" (a value that lies one and a half times the length of the box from either end of the box) with an urbanization level of 80 percent in the year 2001 and a level of 84.05 percent in 2011. These values are in sharp contrast to other districts in the state; for example, the Dangs in 2001 had an urbanization level of 0 which showed an increase to 10 percent in 2011, or the district of Banaskantha where the level of urbanization showed marginal increase from 11percent (2001) to 13 percent (2011). However, since the overall level of urbanization in the state increased from 2001 to 2011, the district of Ahmedabad did not stand out as a "statistical outlier", but the urbanization gap between Ahmedabad district and others remained significantly high. For a detailed discussion on the unequal levels of urbanization, see Mahadevia (2010; 2014).

Figure 5.18: Urbanization level by districts of Gujarat (2001-2011)



Source: adapted from Mahadevia (2014)

One way to examine if urban development has been inclusive is to evaluate the employment and living conditions of people in the city. Specifically, if the urban poor has benefitted from the high growth story of the state. Crudely put, the informal sector constitutes unincorporated enterprises. Hence, work in the informal economy involves workers who do not receive social protection benefits from the employer and the terms of employment are not regulated by the state (ILO, 2002). Though informal employment increased in urban India, the city of Ahmedabad recorded a significantly higher than average increase from 73 percent (1999-2000) to 84 percent (2004-05) (Unni and Naik, 2014). Drawing from the Unni and Naik, we present data on the informal employment by gender and sector in Ahmedabad city (see Table 5.18). Consistent with the global pattern of higher degree of employment informalization among women (Chen, 2005), **Ahmedabad city shows women bearing a higher burden of informal work**. This raises important questions of job security, social protection and an appropriate regulatory environment to ensure that both men and women are equal and active participants of the emerging informal economy. Unni and Naik (2014) also note that the higher incidence of "non-agricultural" informal employment (e.g. 94.5 percent in 2004-05) is largely due to the higher proportion of small and medium enterprises (SMEs) operating in the informal sector of Ahmedabad city. The authors also noted gender

differential in wages. Again, though women are overrepresented in the informal work, they earn less than their male counterparts highlighting a systemic devaluation of women's contribution to productive work. Table 5.19 suggests that though overall there has been a decline in absolute daily wages from 1999 to 2005 among workers in the informal sector in the Ahmedabad city, **women continue to bear larger wage losses**.

Table 5.18: Formal And Informal Employment By Gender And Sector, Ahmedabad City (1999-2000 And 2004-05)

Period	2004-05				1999-2000			
Sectors	Men		Women		Men		Women	
	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal
Agricultural	0	0	0	0	0	100	0	100
Non-agricultural	15.1	84.9	5.4	94.6	16.7	83.1	17.1	82.9
Formal sector	74.9	25.1	----	----	63.3	36.7	88.4	11.6
Informal sector	7.2	92.8	0	100	3.4	96.6	0	100
Employed by households	0	100	0	100	-----	-----	-----	-----
Other	24.5	75.5			6.2	93.8	0	100
TOTAL	**15.1**	**84.9**	**5.4**	**94.6**	**16.4**	**83.5**	**16.3**	**83.7**

Source: Adapted from Unni and Naik (2014: 289) where the authors utilized data from 55th and 61st waves of the National Sample Survey Organization (NSSO)

Table 5.19: Gender Disparity In Average Daily Real* Wage Earnings Of Regular And Casual Workers In The Formal And Informal Sectors, Ahmedabad City

	2004-05				1999-2000			
Men/ Women	Regular		Casual		Regular		Casual	
	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal
Men	267	100	----	86	240	139	69	95
Women	81	66	----	49	223	77	97	37

Source: Adapted from Unni and Naik (2014: 290) where the authors utilized data from 55th and 61st waves of the National Sample Survey Organization (NSSO)

*Note: *Consumer Price Index for industrial workers (2004-05=100)*

Any discussion on urban informality in India is incomplete without referring to the large proportion of home-based workers (a proportion of them commonly known as "domestic help") and street vendors. The city of Ahmedabad has 15 percent of its informal urban workers in the home-based economy; about one-fifth of women informal workers were home-based workers (2004-05) *(ibid).*Despite poor remuneration and poor working

conditions, women's overrepresentation is such jobs is not surprising, as this arrangement allows them to balance their unpaid work (caregiving of children and other domestic chores) at home with earning opportunities outside their homes. Street vendors constitute the next largest proportion of non-agricultural informal employment in Ahmedabad city. Though street vendors are a common sight in the city catering to both poor and middle class consumption needs, data suggests that they are on a decline (Unni and Naik, 2014). The authors contend that part of this decline can be explained by the Ahmedabad city's development and beautification projects associated with Jawaharlal Nehru National Urban Renewal Mission (JnNURM-a central government city modernization scheme started in 2005). This displacement and rupture of economic activity for the street vendors is often not captured in the growth story of the otherwise prosperous district highlighting the vulnerabilities of representation and stability for those involved in informal work. Finally, studies on informal economy and employment in transitional economies remind us about the invisibility of women's work in this sector. Though, employment measurement and estimates have been revised to incorporate women's work, but it still perhaps underestimates given the pervasive culture of undermining of women's contribution to home-based economic activities.

Table 5.20: (Selected) awards for Ahmedabad city development

Year	Award title	Purpose
2004	International Best Practices, 2004	Best practices in city civic centres and e-governance
2006	UN-Habitat Dubai	Best practices to improve the urban environment (SNP)
2009	Best Mass Transit System	Janmarg- Ahmedabad Bus Rapid Transit System Project (BRTS); awarded by Government of India
2010	National Award for Innovations in Servicing the Needs of the Urban Poor	Basic Service for Urban Poor-BSUP (JnNURM); awarded by the World Bank
2011	All India Institute of Local Self Government (Nagar Ratna Award)	Best performing city
2012	Best Practices to improve the Living Environment	Kankaria Lake Improvement
2012	Best Practices to improve the Living Environment	Sabarmati Riverfront development

Source: Adapted from Mahadevia (2014: page 359), "Dynamics of urbanization in Gujarat", in Hirway, Indira, Amita Shah and Ghanshyam Shah (eds) Growth or Development: Which Way is Gujarat Going?, Oxford University Press.

We will close this section on urban informality and livelihoods of the urban poor with a brief discussion on the urban development paradigm of the Gujarat state with a particular attention to the rapidly growing city of Ahmedabad. The state of Gujarat is one of the largest recipient JnNURM grants and the state is also active in implementing these projects at a faster rate than the other successful urban development contemporary states such as Maharashtra and Tamil Nadu. The table below lists selected awards for sustainable and efficient urban development for the Ahmedabad city.

It is evident from the above table that the city of Ahmedabad has been extolled for its innovative, multidimensional urban infrastructural development that involves an efficient nexus of private organizations, civic administration and the state government. However, there are concerns whether such capital intensive urban development projects have been inclusive, especially for the urban poor in the city. Criticisms are most incisive about the BSUP (Basic Services for Urban Poor) projects which include slum rehabilitation following an enhancement of urban environment such as the Kankaria Lake or the Sabarmati Riverfront projects. Studies have raised concerns about the fate of families who have been moved to peripheral locations as a result of urban development, affecting both their livelihoods and living conditions adversely (*Our Inclusive Ahmedabad*, 2010, cited in Mahadevia, 2014). The urban infrastructural success notwithstanding, these issues point to lack of economic and social freedoms among the urban poor, most likely resulting in low levels of human development.

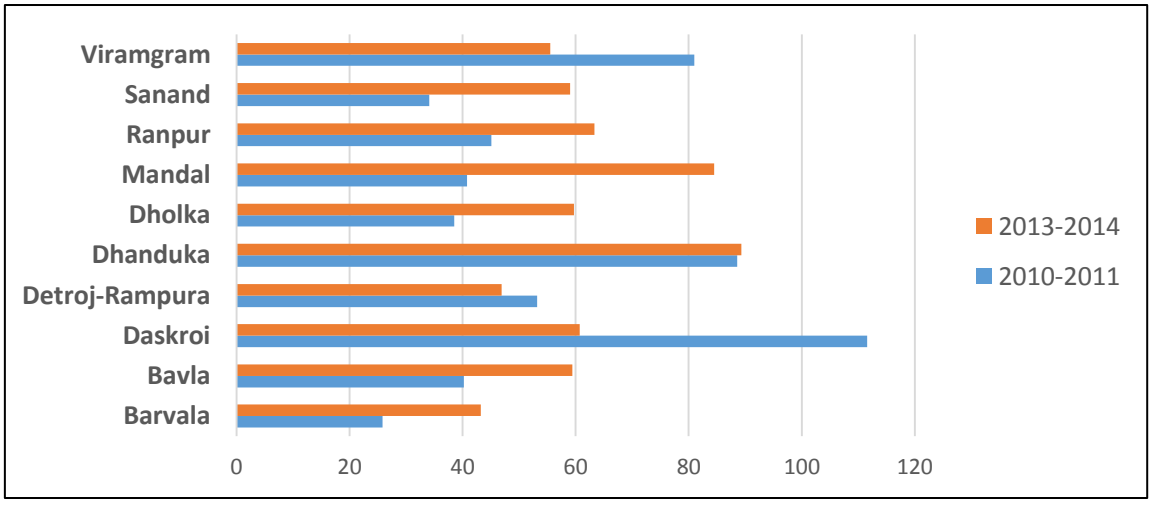
In summary, though urban Ahmedabad has been referred to a celebrated urban development model with high growth, capital investment, public-private partnerships, city transformation and other market-based approaches to urban development, a schism in access and opportunities between the rich and the urban poor is likely to remain. We have noted increasing informalization of work with gender-based wage differentials and loss of livelihood as a result of city transformation initiatives. These underscore inadequate attention given to livelihood opportunities and living conditions of the urban poor. Studies note that spatially, the city of Ahmedabad remains divided, “with the western part globally linked and the eastern industrial parts in a relatively degraded situation with a large presence of slums” (Mahadevia, 2014: page 361). This urban development paradigm perhaps fits well within the larger growth

paradigm of the state. As Patel (1991) refers to this pro-growth, capital intensive, polarized "development" as the "core-periphery" dichotomy or in Hirway's (1995) model, "the core of economic development as the "colonial corridor" (cited in Mahadevia, 2014).

5.7 Livelihood Based Schemes in the District

We review a few schemes that directly affect livelihoods of people in the district. Given our previous discussion on lack of adequate sanitation facilities in rural areas of the district and high prevalence of open defecation, a review of the "**Nirmal Gujarat**" (introduced in 2007) scheme is perhaps crucial. Rural Housing and Rural Development department indicates that the state of Gujarat has undertaken the "Nirmal Gujarat Scheme" (previously known as the Total Sanitation Campaign) to ensure clean environments in the villages. The scheme involves building toilets for both APL and BPL families and a regulatory framework for scavenging work. The following chart shows the achievement percentage in meeting the targets of building household latrines by talukas in the district for the year 2010-2011 and 2013-2014. It is surprising that though over 50 percent achievement "targets" have been met in most talukas, open defecation remains pervasive. Non-availability of data by social group categories (APL/BPL and by caste groups) make evaluation of the scheme difficult. Since, data across India suggest that absence of household sanitation systems and open defecation are common among lower socio-economic groups (e.g. Dalit communities), it is possible that these "targets" were achieved in more affluent communities.

Figure 5.19: Achievement Targets (%) In Building Household Latrines Under "Nirmal Gujarat" Scheme



Source: Official data provided by the District Rural Development Agency, Ahmedabad

The state of Gujarat has been proactive in providing special assistance and security provisions to the vulnerable sections of the society including the elderly, women (and widows) and disabled persons. These vulnerabilities often intersect with lower levels of economic wellbeing. Keeping that in mind, we review the **Sant Surdas Yojana** (introduced by the state government in 2000) that provides financial assistance to disabled persons who are also from the Below Poverty Line (BPL) families. Under this scheme, the disabled person is entitled to receive Rs 200 per month, if below 18years of age and Rs 400 per month, for age groups between 18-45 years (information obtained from: www.punarbhava.in). The table below shows the total number of beneficiaries an expenditure under the Sant Surdas scheme. It is encouraging to see that across all talukas of the district, both the number of beneficiaries and the total expenditure has increased from 2009 through 2014.

Table 5.21: Beneficiaries and expenditure under Sant Surdas Scheme, Ahmedabad district (2009-10 and 2013-14)

Sr. No.	Name of Taluka	Year 2009-10		Year 2013-14	
		No. of Beneficiaries	Expenditure	No. of Beneficiaries	Expenditure
1	Ahmedabad city	2624	11325800	2967	12944300
2	Daskroi	195	858000	259	1196580
3	Sanand	50	220000	93	429660
4	Bavla	18	79200	36	166320
5	Viramgam	332	1328000	404	1866480
6	Dholka	175	840000	234	1081080
7	Detroj-Rampura	50	220000	101	466620
8	Mandal	25	110000	54	249480
9	Dhandhuka	255	1122000	312	1441440
10	Barvala	50	220000	58	267960
11	Ranpur	25	110000	34	157080
12	**Total**	**3799**	**16433000**	**4552**	**20267000**

Source: official data provided by District Social Security Office, Ahmedabad

5.8 Livelihood Based Successful Case Studies of The District

Finally, we present a few case studies that highlight not only the successful implementation of schemes but also how these schemes transformed the livelihoods of people in the district.

We have chosen to report successful case studies from the Horticulture department and the Commission of Rural Development Office, district of Ahmedabad.

Higher yield through National Horticulture Mission, Ahmedabad

Sukhlal Prabhudasbhai Patel, a farmer of Andej village of Sanand Taluka, Ahmedabad District used traditional farming methods to cultivate tomatoes. In 2013-14, Mr. Patel got assistance and advice from the Office of Deputy Director of Horticulture, Ahmedabad, to help him improve the yield of his cultivation. Mr. Patel adopted Trellis technique which improved quality of produce as well as the production by reducing wastage of crop. He received guidance on tomato farming by trellis technique and received financial assistance of Rs. 41,600 under Nationl Horticulture Mission. Farming by modern technique earned him higher profits in comparison to the traditional method. Below, we present a table that captures this transformative effect in yield and economic surplus Tomato farming by different techniques in years 2012-13 and 2013-14.

(Source: Official case studies provided by Office of Deputy Director, Horticulture, Ahmedabad)

Sr. No.	Year	Technique used	Area of cultivation (Hectors)	Total income (Rs.)	Investment (Rs.)	Profit (Rs.)
1	2012-13	Traditional method	2	320000	120000	200000
2	2013-14	Trellis technique	2	1200000	280000	920000

From vicious cycle to virtuous cycle
Rural Development in Ahmedabad district through MNREGA and Mission Mangalam

The Mahatma Gandhi National Rural Employment Guarantee Act (**MNREGA)** was launched by the Central government in 2006 to promote rural development through employment and economic wellbeing. The programme guarantees 100 days of wage employment in a financial year to any rural household whose adult members are willing to do unskilled manual work. The programme thus ensures livelihood security for the rural poor through creation of durable assets, soil conservation, improved water security and higher land productivity (Commission of Rural Development, Gujarat)

To promote social protection of rural livelihoods, a construction project that involved constructing a causeway and a protection wall on the way that links Aniyari village of **Sanand taluka, Ahmedabad district** to **Kishol village of Viramgam taluka** was undertaken under the MGNREGA scheme. The causeway facilitated water storage in Kala Talavdi situated at the outskirts of the village. This construction project reduced distance to Viramgam town by 7 kilometers which saved time and money incurred on going to Viramgam. The causeway also benefited farmers who were previously unable to go to fields for harvesting as the way to fields used to get blocked by rain water. Stagnated rain water on the way to fields was responsible for nearly 60-70 hectares of land remaining uncultivated. After construction of the causeway and the protection wall, farmers can now cultivate the land and reap crops which benefited them economically. The construction work itself gave work to many families in the village. Total expenditure incurred in the entire work was Rs.8,37,231.

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Gujarat Livelihood Promotion Company (GLPC) or more commonly known as the **Mission Mangalam**, is a strategic partnership between large industries and Sakhi Mandals/Self Help Groups (SHGs)/ Service Groups and Collectives of the poor. This programme provides financial empowerment by helping the poor to organize them into SHGs/Federations/Collectives and augment livelihoods through opportunities of self-employment and decentralized micro enterprise rural ventures (Commission of Rural Development, Gujarat). In **Jhanu village of Daskroi taluka of Ahmedabad district**, a Mission Mangalam worker encouraged women to come together to form 'Akhil Mission Mangalam group'. Ten BPL women between scores 0-16 deposited monthly savings of Rs. 30 in the account opened in the Union Bank of Inida, Kathwada branch. All the members of the group decided to engage in productive economic work and approached the taluka branch of Mission Mangalam scheme, who helped them to bid for the tender for cleaning work at the regional office at Vastral. Through this process, the women were successful in securing the contract and approval for the cleaning work and started their work on 22nd August, 2012. Six women of the group came forward to work who collectively received Rs. 21000 every month. Women's lives were significantly improved as a result of this economic activity and they reported that they hope to use their income on their children's education, health and to meet unforeseen expenses of the household

SWOR ANALYSIS

STRENGTHS	WEAKNESSES
The district of Ahmedabad has shown higher than state average (73% versus 53%) percentage of net sown area to total reporting area echoing the overall phenomenal agricultural growth rate of the state of Gujarat in the last decade	Though the state of Gujarat has recorded higher than national average worker participation rates, the district of Ahmedabad does not echo similar patterns. By the year 2011, the rural talukas of Ahmedabad district have recorded lower than state average worker participation rates
When compared to other districts in terms of percentage of food crops to total cropped area, Ahmedabad district records higher (53.64%) than state average (46.73%)	Gender disparity in worker participation rates persists in all talukas of the Ahmedabad district (for both rural and urban). Women are also disproportionately overrepresented in the "marginal" worker category (as opposed to "main" worker) as compared to their male counterparts. In Ahmedabad city, women continue to bear high levels of "informal" work with wage losses and very limited job security provisions
Rural-urban differences are narrower in mobile phone ownership and electricity as the main source of lighting, reflecting the state of Gujarat's overall success with communication technology and power supply.	
By the year 2011, the urban talukas of Ahmedabad have recorded higher than state average worker participation rates	Open defecation remains pervasive in rural areas of the district exposing people to the risks of fecal contamination and other water-borne diseases.
Electricity supply coverage and access to clean drinking water in urban areas of the district are satisfactory. In particular, about 75% of the urban areas in Ahmedabad district receive tap water from a treated source.	More than 60 percent of rural households in the district report using firewood as the primary source of cooking fuel exposing people to high levels of indoor pollution and risk of lung diseases
The city of Ahmedabad enjoys access to clean drinking water, sanitation systems, clean fuel-use and high levels of asset holding and amenities suggesting better quality of life and enduring levels of economic wellbeing.	Rural areas suffer in terms of household lighting facilities and clean drinking water. Specifically, latest Census figures suggest that majority of the rural households in the district rely on kerosene as their main source of household lighting and untreated tap water.
Significant growth in the number of establishments and MSMEs in the district contributing to employment generation. Additionally, several SEZs in the district have been introduced since 2006 with a goal of attracting foreign direct investment and expanding employment potential.	Again, substantial rural-urban gap remains in terms of asset holding, amenities and home ownership. Analyzed closely, the quality of housing in rural areas raises concerns
The Ahmedabad district has been extolled for its highly efficient urban development model that involves innovative, multidimensional and multi-stakeholder partnerships.	The urban infrastructure development and beautification projects of the Ahmedabad city have often resulted in displacement and rupture of economic activity for the urban poor (e.g. street vendors, slum dwellers)

OPPORTUNITIES

The district of Ahmedabad has a rare combination of urban-rural mix offering a possibility of developing interdependent and symbiotic relationship between the rural and urban talukas of the district in terms of supply and demand of employment, agriculture and small industries

Solar energy can prove to be a primary energy resource given that the district enjoys abundant sunshine throughout the year.

A growing informal economy shows promise of economic freedom and empowerment among the urban poor

With a proactive state government, the goals of achieving financial inclusion (access to baking facilities) and internet connectivity through the recently launched Digital Gujarat (2015) campaign hold promise to an increasingly connected district in terms of information and awareness.

RECOMMENDATIONS

Given the low rates of worker participation rates in the district and consistently high levels of gender disparity in employment and wage rates, it is important that **Assistance for home-based entrepreneurship** should be encouraged, particularly for women as such arrangements do not radically challenge gender norms around family and work

Social investments in sanitation and clean fuel-use to improve overall quality of life for people especially in the rural talukas of the district

Given the large presence of informal economy in the district, special **social and legal provisions** and a **regulatory framework** to protect informal workers who contribute actively to the state domestic product and provide a regime of opportunities, rights, protection and social dialogue

For the *Pradhan Mantri Jan Dhan Yojana* (2014) and *Digital Gujarat* (2015) campaigns to be successful, the policy target should be on the rural households who are now cut off from the **financial and digital networks** of the state

Given a higher proportion of women contributing to the informal economy, there is a need for **gender-targeted social security and representation.**

Social provisions to make the **urban development process inclusive, dynamic and sustainable**. This includes providing affordable housing, appropriate sanitation systems, transportation facilities to the urban poor/migrants and involvement of civil society organizations to help the urban poor in building community networks

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CHAPTER 6:THE WAY FORWARD

THE WAY FORWARD

As we end our journey of assessing social indicators around the development paradigm, we are acutely aware of the vulnerabilities of the people at the margins, shortcomings of the policies and initiatives, opportunities that lie ahead and of the many successes of the programs and policies. Human development, as we have pointed out earlier, is not just an expansion of economic capacities of the state, but improved capabilities to ensure that each individual, regardless of his/her social location (in terms of caste, religion and economic status) has an equal chance to lead a healthy life and has access to clean drinking water, housing, education, employment and basic health facilities. Additionally, to take advantage of a fast growing economy such as the district of Ahmedabad, each individual should become an equal and active participant of the growing financial networks and digital culture. Through the five chapters in this Report, we have explored, examined and interrogated whether these goals of an equal opportunity society can or has been achieved. In the process, we have highlighted the vulnerabilities of the people in their pursuit of achieving human development. The purpose of such an exercise is not to reveal or criticize the failures of the policies or the efforts of the government, but to identify and recommend alternative ways through which such development goals can be met. Human development is multidimensional and hence achieving it is an immensely arduous and challenging process. We hope this Report through the data and analysis will help us in understanding the complex process of development, ask the right questions and address the inequalities within the system. Our overall goal in this DHDR has been to not just report numbers/data as they are, but to go beyond them and look for possible correlations that might explain the "why" question-the central objective of human development and policy studies.

Specifically, in the last five chapters we discussed the state of human development in Ahmedabad district through various measures of the prime dimensions of human development- demography, education, health and livelihood. The district of Ahmedabad has been at the forefront of the growth story of Gujarat with its phenomenal expansion in physical infrastructure, a consistent level of comparative advantage in agriculture and manufacturing, easy availability of land and high tax concessions and incentives to corporate investments (See Hirway, et al. 2014 for a critical appraisal of Gujarat's growth experience). **However, as**

we sift through the data at the Ahmedabad district and taluka levels, we find there remains a weakening link between growth and inclusion. In other words, despite the much celebrated growth miracle of the state, there exist structural bottlenecks in the provision of public services (e.g. educational attainment, public health and sanitation) in Gujarat's one of the fastest growing districts.

An important dimension of human development in order to achieve an equal society, is that the lives, needs and demands of people, regardless of their spatial location, deserve attention in the provision of public services and policy making at large. Our analyses of taluka level data across the sectors of education, health, employment and related livelihood indicators suggested a sharp rural-urban divide. In particular, the disparity in provision, access and utilization is heightened in crucial human development indicators including sex ratio, literacy, education completion rates, open defecation, tetanus toxoid vaccination of expectant mothers, number of infants covered under the *Bal Sakha Yojana*, household electricity, clean cooking fuel access, banking, employment and poverty. In some cases, data showed women bearing larger losses in terms of educational attainment, employment and wages.

We noted that there have been several government programmes to address these gaps in the human development indicators. **But focus has been primarily on providing services (access) rather than understanding whether these services are utilized or not.** For example as part of Sanitation campaigns (e.g. *The Total Sanitation Campaign,*

Nirmal Bharat Abhiyan, Swachh Bharat Abhiyan etc) lakhs of toilets have been constructed (see Chapter 5), improving access to sanitation, but open defecation remains a pervasive problem, especially in the rural parts of the district.

We also noted that government data collection (at district level) has primarily focused on program outlays and services (such as number of schools built, PHCs, toilets etc.), and less on the *(quality of) outcomes* such as student learning and retention, functioning of health services and utilization of health, sanitation and clean fuel facilities. The problem is particularly severe in the health sector. Despite a large network of trained health workers through the government sponsored programmes, there remains an acute dearth of detailed, population-based, anthropometric measures that are crucial in evaluating nutritional needs

of children. Another data related concern that needs attention is designing appropriate measures and studies that help both the researchers and the government in identifying the correlates/determinants of health, education and livelihood based indicators. We noticed that despite a huge body of data collected by the state and district level governmental institutions, a careful recognition of determinants were missing. Typically such data collection are conducted using national level surveys, which gives us valuable lessons, but are inadequate to understand the specificities at local levels (such as within district or taluka level). Social norms, beliefs and customs on health, sanitation, culinary practices and gender roles around employment and livelihood vary significantly across regions and communities.

To understand the complexities in factors affecting human development, a more nuanced data collection process that not only records sectoral growth but also the determinants, hold promise to guide policy making and improve people living conditions. In the light of this, we contend that the district and taluka level local governance should include this in their policy making agenda. There is lot of room within the existing programs to address these gaps. Local community members should have a stake in the implementation government programs. Assistance of NGOs working in the neighbourhood villages and towns that have a grass-root level understanding of local systems, can be sought- paving way for participatory governance (e.g. Community Led Total Sanitation (CLTS)).

In the remaining part of this concluding chapter, we briefly summarize the main concerns raised in the previous chapters to evaluate human development. Additionally, we have provided a few policy recommendations following the implications of the data analysis.

6.1 Population and Demography

The district of Ahmedabad is richly diverse in social and economic institutions. Demographically speaking, the district has a high proportion youth in the working age groups which offers an advantage to reap the “demographic dividend”. However, it faces the challenge of a skewed sex ratio, with urban areas faring worse than rural areas. To address the adverse sex ratio, especially in the 0-6 age groups targeted programs to educate people should be taken. Messages about the adverse consequences of a patriarchal mindset that devalues girl children should become part of public reasoning and discussion through an

active local media (print and television). Additionally, schools should play an active role in creating awareness about the importance of the girl child. Strict regulatory framework to enforce the banning pre-natal sex determination should become one of the local government health goals.

6.2 Education

There is a particularly fundamental role to be played by education in fostering both economic and social development. Social scientists have long noted the importance of economic growth that is accompanied by education, knowledge and expansion of skills. We have noted before that the district of Ahmedabad has been at the forefront of educational developments in the state since time of the freedom movement. However, it still faces stark challenges in providing basic education to rural children, bridging the gender gap and ensuring basic learning level upon completion of primary education.

The district of Ahmedabad shows high literacy rate which is largely a reflection of historical advantage of having educational institutes and migration of literate population to the city. The city of Ahmedabad in particular, has several good quality public (state, state aided and central) and private schools. However the urban education advantage does not trump the rural-urban gap in literacy. Although the gender gap is narrowing in primary education, it remains high in secondary education, especially in rural talukas.

From an institutional perspective, economic historians have often emphasized on the role of public sector institutions in proving services that are foundational in expanding human capability (See Drez & Sen, 2013). However, as a country we see a remarkable reliance of people on private sector institutions. The education sector in the district of Ahmedabad is no exception. We observed that government school enrolment is declining in both primary and upper primary levels, and even the poor are shifting to private schools. Based on national surveys, perceptions about quality of government versus private schools plays a dominant role in this shift. We contend that priority should be given to improving pedagogy, academic performance and minimizing teacher absenteeism. Another major factor driving private school enrolment is English medium of instruction. Government schools introduce English language only in Class 5. Parents feel that lack of English skills will hamper job prospects of

kids. Educationalists suggest the other way- children should be taught in mother tongue till Class 5 for better cognition and scholastic development. A pragmatic solution to arrest decline in government school enrolment would be to introduce English language along with Gujarati in the first grade, improve the perception of government schools through innovative means already attempted like scaling up of smart schools, activity based learning through *Pragna* and demonstrating that performance of government schools can be better than most of the private schools. Many other local factors might also play a role in this shift, the reasons for which has to be explored by the authorities.

Further, a major concern in in primary school is systematic drop/stagnation in learning levels of school children (reading and arithmetic) in the past five years. Both Governments own *Gunotsav* program and Pratham's ASER survey results (2005-2014) are a testimony to this decline. It is noteworthy that government has taken excellent initiative *Gunotsav* to evaluate schools every year based on academic, co-curricular and infrastructure parameters. In this process learning outcomes of children should be prioritized over physical infrastructure when evaluating schools. *Gunotsav* should be conducted even for private schools. This should enable a fair comparison of performance of public and private schools. Tried and tested (large scale) methods to improve basic learning levels among children by government and institutions such as the Abdul Latif Jameel Poverty Action Lab (or more commonly known as, JPAL)'s *Teaching at Right Level*, Educational Initiatives (EI)- *Mind Spark* program should be implemented in Government schools. Recent central government initiative of *Padhe Bharat Bade Bharat* is a welcome step in this regard. However, its restriction to 1st and 2nd grade should be changed. A detailed study on the impact of RTE rules to have 25% reservation to poor kids in private schools should be evaluated based on the outcome of these children. Many government schools complain that lack of qualified teachers, especially in science and mathematics is affecting children learning. Hence, hiring and training of science and mathematics teachers should be prioritized.

More steps needs to be taken in universalization of secondary education by setting up more secondary schools in rural talukas, and incentivizing students to attend secondary schools (such as waiving fees, providing free book and cycles). For secondary schools drop outs-completion through open school systems such as National Institute of Open Schools (NIOS)

or taking up vocational courses should be encouraged. RMSA should be used effectively for strengthening secondary schools in rural areas. District should fund setting up of *Model Schools* on par with Navodaya Vidyalaya's in rural areas. Making secondary schools in Talukas fully residential offers several advantages such as correcting for household factors which prevent effective schooling, efficient pooling of resources, and better monitoring of schools etc. Providing hostel facilities and free cycles to girls, providing free napkins for menstrual hygiene, counselling parents about importance of sending girl child to secondary schools goes a long way in preventing dropouts and bridging the gender gap.

Measuring and monitoring school data at both primary and upper primary levels through UDISE systems has now become a reality. Data from these should be regularly analyzed at district level and acted on the shortcomings. However, this still does not address the need for understanding the correlates of educational outcomes. In additional to enrolment and school details, students' socioeconomic background, parental education, and income data should be collected. This will help in identifying the target groups for special intervention.

6.3 Health

It is universally agreed that health is an integral component of human development. Our aim was to analyze the health conditions of the people of Ahmedabad district. Arriving at meaningful conclusions about the health conditions in the district has been a major challenge mainly due to the paucity of informative data. Just as learning about the presence of a doctor in a neighborhood tells us nothing about the health of the residents of that neighborhood, analyzing data about health service provision, such as the number of health professionals staffing a Community Health Center (CHC), does not lead to insights about the health of the population that CHC serves. Similar limitations characterize data on several other indicators. For instance, the number of cases of infectious diseases reported is not very meaningful unless it is accompanied by an estimate of the size of the susceptible population the cases come from. The health chapter in the Report includes our interpretation of the available data as well as the limitations of data on each health indicator available to us. However, it is imperative that systems be developed that help the district administration to collect reliable data on health outcomes such as the incidence of pregnancy complications and the birthweight of babies born and not just whether it was an institutional delivery or not.

Despite the limited number of indicators on which data were available, they suggest that the district is performing well in a few areas while a few others warrant immediate attention. The district reports a strong performance when it comes to infant care, having achieved almost 100% rates of institutional deliveries and high coverage of BCG, DPT, polio and measles vaccination. However, care of expectant mothers is not up to the mark with poor completion of three ante-natal visits and inadequate coverage of tetanus toxoid vaccination. The poorer performance of Ahmedabad city, compared to the rest of the district, on several maternal and child health indicators is especially worrisome. The city is cited as a model of development. Hence, establishment of systems to track poor performing units and immediate resolution of issues should be a top priority for the Ahmedabad Municipal Commission. As per a conversation with officials in the CDHO, lack of human resources in certain underdeveloped talukas is a major contributory factor that led to poor performance on a few maternal and child health indicators in rural areas. Several CHCs in the district are understaffed as well. The issue of understaffing is faced by many districts in the entire country. Innovative solutions such as arranging for visits by volunteer physicians on at least a few days a week, training local teenagers to measure blood pressure and look out for danger signs in pregnancy and other locally feasible solutions need to be explored. Partnering with the private sector and NGOs to address this might help in the formulation of solutions.

Despite the limited number of health indicators on which data were available, metadata that might help increase confidence in the available data were missing. For instance, a few cases vaccine-preventable diseases are reported every year through the IDSP. Yet, the extent to which private practitioners and laboratories adhere to IDSP guidelines and actually report each case of these diseases is unknown. Given today's technological advances which allow people to transact easily using mobile phones and tablets, if it is possible to book a train ticket on a mobile phone it must be possible to help each private practitioner and laboratory to easily report these infectious diseases. The government could partner with technology institutes to set up such systems.

The Report is unable to discuss certain dimensions of health due to lack of data. We are unable to comment on non-communicable diseases such as diabetes, cardiovascular diseases and cancer in Ahmedabad district. It is due to lack of data that indicators of mental health are

missing in this report as well. Another major gap is the absence of data on factors that determine health. Health data need to reflect not just the burden of disease but also the extent of social disparities in health. Data on social determinants of health such as gender, education, religion, city/village of residence and other socially relevant markers need to be collected along with health data and made available when assessing the health of the residents of Ahmedabad district.

Further complicating the lack of population-based data on health outcomes is the issue of multiple sources of health data. The HMIS data reflects information collected at health facilities. Using these data as markers of population health can be misleading since data on individuals obtaining services at more than one facility in the district will be input into the system at each health facility they visit. A laudable step by the Government of Gujarat is the establishment of e-Mamata, a system of maternal health data collection which stores data per patient and not per health facility she visits. Such a system needs to be developed for collection, storage and dissemination of data on all health outcomes. Such a system could also collect data on social determinants of health, including city/village of residence. Studies need to be commissioned to analyse how well health centre data represent the population. Such studies will enable scientists to provide an estimate of how closely the health data represent the health of the population that the public health system faithfully serves. The existing strengths of the public health system can be leveraged to gather more data that are helpful in accurately assessing performance, revising existing programs and introducing new ones. Partnership with the private sector can be extended to NGOs and research institutions to design ways to monitor health care provision in real-time and help to make data driven decisions.

Furthermore, annual surveys of a sample of district residents such as the People's Assessment of Health, Education, and Livelihood (PAHELI) need to be carried out. Such surveys based on a sample of the population are quick (PAHELI data collection takes three days) and inexpensive when performed in partnership with universities and NGOs. They provide a snapshot of the health status of the district's population and when performed annually, provide a benchmark for monitoring progress in human development over time. Another recommendation relates to planning health service provision using targets to be achieved in

a year. While this is helpful for planning purposes, assessment of performance of different departments in the district administration needs to be done based on changes in health outcomes rather than meeting service provision targets or budget spending.

Ahmedabad district benefits from the dedicated staff working towards improving the health of the district. The can-do spirit of Ahmedabad is evident in its use of e-Mamata and its existing partnerships with the private sector. The district is in a position to set an example to the entire country if it chooses to implement innovative ideas to overcome the limitations discussed in this report. The enterprising people of this district deserve no less.

6.4 Livelihood

Well-functioning public services can make a significant difference in people's lives. We focused on livelihood indicators across different sectors including agriculture, industries, employment, banking and household amenities to examine the relationship between numerical growth and social progress. The underlying assumption being that *sustainable* growth can be ultimately judged in terms of the impact of that growth on the lives and freedoms of the people. Overall, we find that living conditions of people in the district have improved, but the pace of improvement has remained unequal in terms of social class, gender and geographical location.

Ahmedabad district is primarily urban and has a distinct advantage of well-developed physical infrastructure, better sanitation systems, service and industrial jobs, banking facilities, and educational institutes. Its proximity to the capital city of Gandhinagar gives provides several administrative and communication resources. Despite these achievements in urban infrastructure and high growth, there persists sharp rural-urban disparity in several indicators. One of the most surprising finding is the gross inadequacy in basic sanitation systems. Open defecation remains pervasive in rural areas of the district exposing people to the risks of fecal contamination and other water-borne diseases. Addressing open defecation needs to go beyond the construction of toilets, since data suggests that toilet construction targets have been more or less met in the district. We have recommended that community perception about hygiene and sanitation and their practices needs to be understood and lessons drawn should be included in planning and implementation of sanitation programs. Successful strategies such as Community Led Total Sanitation (CLTS) where behavioral change is

triggering-walk of shame, should be adopted with the help of NGOs and local leaders to bring a shift in the way people understand hygiene and health.

The other alarming statistics from the latest Census (2011) is that more than 60 percent of rural households in the district report using firewood as the primary source of cooking fuel exposing people to high levels of indoor pollution and risk of lung diseases. Social investments in sanitation and clean fuel-use to improve overall quality of life for people especially in the rural talukas of the district

The growth miracle of the state of Gujarat has been often attributed to its high performance in the electricity sector. Hence, it is no surprise that electricity supply coverage in urban areas of the district seems to be satisfactory although a majority of the rural households still depend upon kerosene as their main source of lighting. Solar energy can prove to be a primary energy resource given that the district enjoys abundant sunshine throughout the year. About 75% of the urban areas in Ahmedabad receive tap water from a treated source. Simple public health messages on home-based techniques to purify drinking water can be achieved at low cost.

Again, substantial rural-urban gap remains in terms of asset holding, amenities and home ownership. Analyzed closely, the quality of housing in rural areas raises concerns. Concomitant investment in rural infrastructure can enhance livelihood capabilities of rural people in the district. To assess the overall economic wellbeing of the people in both rural and urban talukas, we created a measure of household standard of living (SLI) by computing a simple average of 12 household amenities and assets using Census (2011) statistics. The average SLI score for urban Ahmedabad was 65 and for rural talukas in the district was 45, suggesting a significant gap in access and household possession. Our index showed that households in Ahmedabad city seem to enjoy better access and are also wealthier. Overall, though there seem to be a distinct urban advantage (urban households generally report higher levels of access and asset holding), inequality of household provisions and amenities is perhaps sharper in the urban locations. The households in the urban areas of Barwala and Ranpur seem to have poorer quality of life as compared to their urban counterparts. Among the rural talukas, Detroj-Rampura, Ranpur and Viramgram have poorer household amenities and hence presumably poor quality of life. Our recommendation for this observed spatial variation in economic wellbeing is a more targeted policy focus on rural livelihoods in terms

of government campaigns and programs. Finally, the locational advantage was clearly demonstrated even in access to banking and digital networks. While, the urban areas in the district recorded more than 50% of households availing banking facilities, the rural talukas lagged behind underscoring the financial vulnerabilities and insecurities. In terms of internet connectivity, as per the latest Census (2011), the district as a whole recorded very low levels of connectivity. The recently launched programs such as *Jan Dhan Yojana* (2014) and *Digital Gujarat* (2015) may help mitigate some of these concerns if implemented with careful attention to the rural households.

In terms of employment, which is a major determinant of livelihood, Ahmedabad rural talukas shows lower than state average in worker participation rates (WPR). There is distinct Gender disparity in WPR across all talukas, with women substantially under-represented in main workers category. The district has recorded growth in the number of establishments and SSIs over the last decade. However a comparison of the two *Economic Census* years (2005 and 2013) revealed that the growth of employment generation from establishments and SSIs are much lower than other districts such as Banas Kantha, Panch Mahal, Kachhchh and Sabar Kantha. Since, SSIs and establishments have huge employment generation potential, government support to these units can be bolstered to ensure that more number of people are included in the economic activity network. Additionally, creating these employment opportunities can also slower the rural-urban migration that the district is currently encountering. While rural-urban migration is not necessarily an economic peril, without appropriate regulatory framework, housing and related infrastructure to support the migrants in the new economic space, the migration process can lead to growing unemployment, falling wages, lower levels of social and individual well-being and overall dampening of the economy.

A closer look at the growing urban informality in the city of Ahmedabad that supports a large number of migrants reveal findings that require gender sensitive policy attention. For example, in the Ahmedabad city, women continue to bear high levels of “informal” work with wage losses and very limited job security provisions. Given the low rates of worker participation rates in the district and consistently high levels of gender disparity in employment and wage rates, it is important that assistance for home-based entrepreneurship should be encouraged, particularly for women as such arrangements do not radically

challenge gender norms around family and work. Given the large presence of informal economy in the district, special social and legal provisions and a regulatory framework to protect informal workers who contribute actively to the state domestic product and provide a regime of opportunities, rights, protection and social dialogue. Given a higher proportion of women contributing to the informal economy, there is a need for gender-targeted social security and representation**.** The district of Ahmedabad has a rare combination of urban-rural mix offering a possibility of developing interdependent and symbiotic relationship between the rural and urban talukas of the district in terms of supply and demand of employment, agriculture and small industries.

The urban infrastructure development and beautification projects of the Ahmedabad city have often resulted in displacement and rupture of economic activity for the urban poor (e.g. street vendors, slum dwellers). Social provisions to make the urban development process inclusive, dynamic and sustainable. This includes providing affordable housing, appropriate sanitation systems, transportation facilities to the urban poor/migrants and involvement of civil society organizations to help the urban poor in building community networks We contend that without addressing the spatial variations (i.e. a sharp rural disadvantage) in livelihood based indicators in terms of electricity, water supply, poverty, banking, employment and digital connectivity, the goals set out in each of the government programs and campaigns will remain unmet and uncertain.

6.5 Concluding Reflections

While this discussion completes our Report, we are hopeful that our voyage of discovery across the different dimensions of human development will open doors for new opportunities, challenges and possibilities. Throughout this Report, we have emphasized on the importance of the two-way relationship between sectoral growth and expansion of human capability as championed by Amartya Sen, Jean Drez and others. We have also, wherever possible, highlighted the central role of institutions- social, economic and political. Public institutions, as we have shown throughout the Report, have huge potential to create markets and access in one hand and on the other, protect, secure and guarantee provisions, needs and rights of all people. We have consistently emphasized the need for intelligent and informed policy making that is responsive to the crucial role of good institutions. While we

were not able to explain the reasons behind the inequalities and vulnerabilities experienced by people in the district, we have pointed out the possible pathways through which these concerns might be addressed. In addition to documenting a sharp rural-urban variation in several social and economic indicators, we have also reviewed the successful programs that have worked in helping people in achieving desired the capabilities and opportunities. The successful case studies, presented at the end of each chapter, makes us hopeful that with willingness, initiative and with appropriate gender and culture sensitive policies, the complex pursuit of achieving human development can be indeed realized.