DISTRICT HUMAN DEVELOPMENT REPORT

BHARUCH

Gujarat Social Infrastructure Development Society (GSIDS)
General Administration Department - Planning
Government of Gujarat

District Human Development Report Bharuch

GUJARAT SOCIAL INFRASTRUCTURE DEVELOPMENT SOCIETY (GSIDS)
GENERAL ADMINISTRATION DEPARTMENT (PLANNING)
GOVERNMENT OF GUJARAT
SECTOR-18, GANDHINAGAR

DISTRICT HUMAN DEVELOPMENT REPORT: BHARUCH

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District Collector, Bharuch and
Mahatma Gandhi Labor Institute, Ahmedabad

Gujarat Social Infrastructure Development Society (GSIDS)

General Administration Department (Planning)

Government of Gujarat

Pradipsinh Jadeja

सत्यमेव जयते

No. 2050/2015
Minister of State,
Law & Justice, Devsthan,
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Government of Gujarat,

Date : 6 OCT 2015

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 United Nations Development Programme under Planning Commission for collaborating with the State Government in preparation of the District Human Development Report, 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 Administrative Department (Planning) for undertaking this project.

I am sure, the comprehensive document, so meticulously prepared, providing a 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.

(Pradeepsinh Jadeja)

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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. The data provided by the district & department offices has been used. The district authorities may update the data as required.

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) and

Chairperson, GSIDS

PREFACE

In administration, the objective of all interventions - is to bring in human development. A district human development report has to basically address the issue of formulation of a strategy, which will accelerate the pace of human development. Therefore, the objective of the present exercise is to build up a developmental path, which will address human development in Bharuch District. Normally a human development report covers three aspects related to human development - Education, health and Livelihood.

As an introduction, a brief profile of Bharuch district and an overview of the economic and social development has been given along with important sectorial status like education, health, livelihood etc. Delhi-Mumbai Industrial Corridor (DMIC) is passing from Bharuch district. The District also has lot of diversity-different socio-religious popupation groups, talukas with population of scheduled tribes accounting for more than two-third of the total. The coastal areas in the district have fishermen community also. The sex ratio has shown an increasing trend in the successive decades. Juvenile sex ratio of district has also increased compared to the last decade and the state average. Bharuch has made a remarkable improvement in the literacy rate. The literacy rates have increased both for male as well as female.

The rural primary health physical infrastructure and manpower in the health sector in the district, are fairly well established and are in position for service delivery. The district has shown a considerable improvement in terms of institutional delivery in all the talukas.

The district administration has launched Solid Waste Management (SWM) program in 367 villages across talukas in the district. Apart from ensuring proper sanitation, hygiene and clean environment; it has generated valuable fertilizers and value generated is almost meeting the cost and thereby becomes self sustaining.

The Main workers (male) as percentage to the total Main workers (male + female) have more or less remain unchanged between 2001 & 2011. In Bharuch district however, the yields per hecture in commercial crops like castor and sugarcane are somewhat better than the state average. Given the diversity of agro climatic conditions and soil status in the different parts of the district, the government has implemented an innovative strategy (ATMA) for achieving higher yields in major crops and for the sustainable development of agriculture in the district. Bharuch district is booming with industrial development.

This report is an attempt to give Human Development status of Bharuch District. It is hoped that this report would be useful to those interested in learning the current status of the Human Development in the district and are involved in District Human Development Planning.

October 2015
Bharuch

Vikrant Pandey
District Collector
Bharuch

FOREWORD

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.

Human Development is increasingly becoming an area of concern and priority is given to development a strategy which conceptually goes beyond per capita income as a measure of development. The preparation of DHDR (District Human Development Report) marks the beginning of the process whereby people are mobilized and actively participate in the developmental process.

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

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

Anand Babulal Patel
District Development Officer,
Bharuch

Acknowledgement

We are very grateful to Shri Sanjay Prasad IAS, Director General, MGLI and Principal Secretary to the Government of Gujarat, Department of Labour and Employment for full support, guidance and encouragement in our work. We are also grateful to the former D.G Shri P Panneervel, IAS and also former D.G Shri Gurucharan Singh, IAS for their support in our work.

We are very grateful to Shri Vikrant Pandey, The District Collector, for their support in revising of the report and special thanks to Shri Anant Patel, District Development Officer (DDO) for insights of the report.

District Human Development Report, Bharuch is prepared by MGLI Team consisting of Dr. B B Patel, Lead consultant and of Dr. Misha Vyas. In the initial stage, we also benefited from the support of Dr. Geeta Lal, Associate Professor, MGLI. We also received good support in data analysis from Shri Ashish Patel and Shri Nainesh Desai.

We are also thankful to Shri A. M. Tadvi, District Planning Officer (DPO), District Mr.Kalpesh Roy, SPAC – Bharuch and other officers in district offices of line Departments for their support and cooperation.

We are very grateful to The Director & Member Secretary GSIDS, their officers and SPAC particularly Ms. Tejal Parmar for providing valuable data and in helping us to sharpen the focus on specific issues in the DHDR.

B. B. Patel
Misha Vyas
MGLI

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Executive Summary

Concept of Human Development:

The concept originated from the over emphasis on economic aspect of structural adjustment by countries under the impact of globalization. ILO, UNDP and several other distinguished social scientists and thinkers like Amartya Sen and others provided new paradigm for the development strategy. The United Nations Development Programme (UNDP) prepared a human development framework for the member countries in the world which focused on three key indicators of life expectancy at birth, knowledge – primary and secondary school enrolment, and adult literacy - and per capita income with equal weightage.

Introduction:

There are 8 talukas and 657 inhabited villages. There are 4 municipalities and 543 gram panchayats covering 658 villages and the total population of 13.71 Lakhs. In other words 113 villages are a part of group panchayats, mostly in tribal talukas of Valia and Jhagadia. Bharuch District is home to many distinguished men of letters and visionaries who include Shree K.M Munshi, Chotubhai and Ambubhai Purani, Poet Sundaram and Musician Omkarnath Thakur among other. The district is drained by Narmada, Dhadhar and Kim rivers Smaller Rivers like Kaveri, Karjan and Dev rivers flow into Narmada River.

Demographic details:

The population of Bharuch district (Census 2011) is 1551019 of which 1026060 or 66.15% is rural and 33.85% is urban population. However, the district has experienced spectacular growth of urban population by 49.88 %. The rural population in the district on the other hand almost stagnated as it increased only by 0.42 %. Bharuch District ranks 6th in terms of Scheduled Tribes population across districts in the state. In 2011 the scheduled tribe population is slightly lower to 31.48% as compared to 32.40% in 2001. The sex ratio in Bharuch district was 925 in 2011 as compared to 919 in Gujarat. Also the sex ratio in the population in the age group of 0 to 6 was significantly higher (920) in Bharuch district than in Gujarat (890) in 2011.

Education:

Bharuch district occupies quite favourable position in terms of literacy and primary education in the state. There is no educationally backward taluka in the district. The enrolment in class-I is nearly total while the dropout rates in primary education are very low and falling further. It is noteworthy that there are as many girls as the boys among all the students in primary education in the districts. However, there is a trend towards private schools. About 35% of the students in the district are enrolled in private schools. Hence, quality of education in government schools would be the key factor to compete with the private schools.

Considering the achievements in the primary education, the district may now focus on providing almost universal access to secondary and higher secondary education particularly in Science stream to the children of vulnerable sections of the society in general and Vanbandhu children in particular.

Health:

Despite some gaps in medical and para-medical personnel in the rural primary health care system, it can be taken that, the district has fairly well established and functioning rural health care services down to the remote villages across talukas.

The achievements in terms of reducing the infant deaths and maternal deaths are commendable. However, the major problem is of malnutrition. This is despite the working of the ICDS and public distribution system and several other interventions. Although the problem does not seem to be wide spread, its incidence is quite visible among women and children of the vulnerable sections of the society whom we met in field visits. This is a challenge to be tackled through innovative approaches.

The 108 medical emergency services is the most successful and is used by all sections of the population. It is being used increasing in pregnancy related cases also.

The district has covered about 63 % of the BPL families under the Rashtriya Swastha Bima Yojana (RSBY). Several categories of migrant workers however do not seem to have been covered for the benefit under RSBY. It has not yet reached to the most vulnerable families. Hence, a registration drive may be necessary to achieve the registration of 100 percent.

Workers and industrial classification:

Census 2011 data reveal that 12.44% of the total workers in the district, are recorded as cultivators but, 40.51% are agricultural labourers, 1.44 % are in house hold industry while a significant percentage of 45.77 % are classified as other workers.

Important crops:

In agriculture, Cotton and Tur are the two most important crops. However, about half of the acreage under cotton is without irrigation. Moreover, in both these major crops, the yield per ha in the district is lower than the yield in the state.

It is noteworthy that the farmers in the district are now taking to horticulture and to value added cropping pattern. Considerable focus is placed on the water economising techniques of irrigation and on water use efficiency and on water conservation. At the same time, the area of concern is the indiscriminate use of canal water for irrigation leading to water logging and salinity.

Animal husbandry:

While there is diversification into animal husbandry and dairy on the one hand, the BPL families find some income and food security in wide spread adoption of poultry and goat keeping. The allied sector activities of goat keeping, poultry, fishing, dairy and agro processing have high potential to increase and stabilise income of the poorer sections of the society. The C-DAP has rightly focused on these allied activities which will make the development inclusive.

Highlights

Table 1.1 Position of Bharuch District in Gujarat State: Selected Indicators, 2011.				
Sr. No	Item	Unit / Year	Bharuch District	Gujarat State
1	Total Population	Lakh, 2011	15.51	604.4
2	Percentage of Urban Population	%, 2011	33.85	42.58
3	Decadal Population Growth total	2001-2011, %	13.14	19.17
4	Sex Ratio	Females per 1000 Males, 2011	925	919
5	Literacy rates: persons	%, 2011	81.51	78.03
6	Literacy rates: females	%, 2011	75.09	69.68
7	Gender gap	% points, 2011	12.36	16.07
8	Population density per sq.km	2011	296	308
9	percentage workers in agriculture (cultivators + agricultural labour)	2011	52.87	49.6
10	percentage non agricultural workers to the total	2011	45.69	49
11	Dropout rate in primary education std- 1 to 5.	2013-14	1.8	2.00
12	Infant Mortality Rate (IMR)	SRS,2011	44 (SRS, 2011)	41 (SRS, 2011)
13	Net Area Sown as % to reported area	2007-08	60.68	52.98
14	Net Area Irrigated to net area sown	%, 2007-08	35.21	42.48
15	Decadal growth of urban population	2011	49.88	35.83

According to the census of India, 2011, the urban population in Bharuch district was lower (33.85%) than in the state (42.58%). However, the urban population in the district increased by 49.88% during 2001 to 2011 as compared to 35.83% in the state.

The district has also lower overall population growth of 13.14% as compared to 19.17% in the state during 2001 to 2011. Moreover, the sex ratio in Bharuch district is higher (925) than in the state (919) in 2011.

Similarly, the literacy rates in Bharuch district are higher than in the state while, the literacy gap is lower in the district. On the other hand, the drop-out rate (std 1-5) are lower in the district than in the state.

In the health sector, the IMR in the district (44) is higher than that in the state (41). On the livelihood side, the Net Area Irrigated in the district is lower (35.21%) than in the state (42.48%). Similarly, while 52.83% of the workers depend on agriculture in the district as against 49.6% in Gujarat.

CHAPTER – 1

INTRODUCTION

CHAPTER – 1
INTRODUCTION

Background:

The concept of human development envisages the expansion of human capabilities, widening of choices and enhancement of freedom and fulfilment of human rights. The human development concept is thus much broader and deeper than mere human capital in the context of economic growth.

Human Development therefore, has to be examined from several dimensions. Primary education is the foundation and is a social goal. The emphasis is on universal primary education and with gender equality. Secondary and higher secondary education which enables further education and skill development is important from the point of view of access to better livelihood and employment opportunities.

Similarly a crucial aspect of human development is the health of the people. Maternal and child health are at the core. Equally important is the issue of nutritional status and incidence of diseases. Aspects of preventive health care, drinking water and sanitation are not only important but also crucial.

Above all, it is the livelihood opportunities and the ability to avail and use such opportunities to improve the standard of living. Livelihood avenues in the field of agriculture, animal husbandry, non-farm economic activity and industrialization and skill development may have to be examined in this context.

National Human Development Reports, India:

Following the UNDP framework, the Planning Commission, Government of India, prepared the first National Human Development Report in 2001. In the Report, the Gujarat State was ranked at 6th position with index 0.479 among the 10 major states in India.

Now Human Development Report 2011 is also published. The report examines whether certain sections of the Indian society suffer from multiple deprivations by investigating how different castes and religious groups fare in terms of various socio-economic indicators. In particular, it analyses whether the social indicators of excluded groups are converging or diverging with rest of the population. Gujarat has made considerable progress since 2001 in respect of many social indicators.

For Gujarat, the area of concern was the gap between the level of economic development in the State and the level as reflected by the indicators of human development.

Gujarat Human Development Report:

Gujarat Human Development Report, 2004 brought into focus several areas of concerns from the angle of social development in the state.

Strategy to Accelerate Human Development in Gujarat:

A vision statement lays emphasis on the following to achieve the goals of high level of human development in the state.

Every single person in the State of Gujarat, irrespective of gender, caste or creed, would

- Be literate and healthy;
- Have shelter and clean environment;
- Have drinking water and sanitation;
- Be gainfully employed;
- Be able to live without fear; and
- Have equal opportunity.

The State intended not only to accelerated human development, but also on making it inclusive.

Since human development issues are multi-dimensional and inter-related in education, health, livelihood, gender and vulnerability, the Government of Gujarat has unveiled innovative and comprehensive strategy and programs targeting themes like education, health and also targeting the special problems of the people living in specific areas like the coastal areas, eastern belt from Sabarkantha to Dangs district in-habited by the schedule tribes population. Thus State Government has launched several schemes and programmes as mentioned below:

Government Initiatives in context to Human Development in Gujarat:

The major government initiatives to address the Human Development Issues in the state can be classified in to two categories. Category- 1 consists of Flagship Programs which focus on specific regions and the people and will address all types of challenges – relating to livelihood, education, health, infrastructure etc. in an integrated manner.

Category – 2 consists of Government programs which are on Mission Mode. The mission mode programs cut across geographical boundaries and will focus on particular themes- for example, primary education, maternal and child health etc.

Flagship Programmes:

Vanbandhu Kalyan Yojana (2007):

This program is implemented in 43 talukas in 11 districts with the objective of providing major thrust on the development of the region as also the people in the region to bring them at par with the development level in other regions and the people in the state. Rs. 15000 crore had been allocated for the program initially. Since then, the funding has increased significantly.

Sagar Khedu Sarvangi Vikas Yojana (2007):

This program was launched under the Eleventh Five Year Plan with the allocation of Rs. 11000 crore. It covers 60 lakh people in 3000 villages of 38 costal talukas in 13 districts.

The program focuses on skill development, employment, tourism, drinking water, salinity ingress prevention, water conservation, ecology etc.

The program also has a specific focus on skill and technology up gradation of fishermen. The program is likely to accelerate port-led development and improve the human development status of the people.

Garib Samrudhi Yojana: (2007)

It focuses on employment, health, education, housing etc of the urban poor. It also aims to ensure slumfree towns and cities.

Mission Mode Programmes:

Kanya Kelvani: Sarve Siksha Abhiyan

This program focuses on the objective to reach 100 % enrolment and retention of boys and girls in the primary stage of education up to Std 7 / 8. The program has the special focus on the education of a girl child, and provides for necessary sanitation facilities for girls, financial incentive to girls etc. Similarly, it also focuses on the problems of education of the children of the migratory households and provides for alternative / non-formal schooling of the drop out children, main streaming wherever possible, provision of associate schools and mother schools and seasonal hostels.

Vidya Lakshmi Bonds (2002-03):

Focusing on the education of the girl child with monetary incentive of a bond of Rs.1000/- .

Special Arrangement of Alternative Schools for Migratory Households:

Main streaming or channelizing to alternative school system, the children in the age 6-14 years who are either never enrolled or have drop-out in between.

Special arrangements of associate schools / alternative schools have been made for migratory households for the education of their children. Seasonal hostels particularly for children in the age 10 to 14 years from the migratory households.

Nirogi Bal:

This program provides support of healthcare for mother and the child from the stage of conception to adolescent stage. The interventions include Chiranjivi Yojana for institutional delivery and ANC care, Janani Shuraksha yojana for the protection of the mother and the health of the newly born child including the nutrition.

Skill Development Mission (SDM):

The program aims to enhance the employability and productivity through skill development for sustainable livelihood particularly for the vast number of people (particularly youngsters) in the unorganized sector.

Nirmal Gujarat:

This initiative has the objective to ensure clean land, clean water, and clean air, improvement in the environment and energy conservation.

Gnan Rath Yojana (2003):

Under this Scheme, computer and video connectivity between State Education and Research Council and District Education and Training Bhavan is established by GSWAN, VSAT, computer literacy is sought to be promoted.

Gunotsav:

Main objective of this scheme is to promote quality of education by improving the competence of the teachers and learning effectiveness through periodic evaluations.

Akshar Sanskar Prakalp:

It aims to raise literacy rate from 69 % to 80 %; reduce M / F literacy gap to 20%. In order to achieve almost complete retention of students between Std- 1 to 5, and 1 to 7 by 2010, Steps have been taken for recruiting proper, adequate and qualified manpower.

Garib Kalyan Mela:

This is highly innovative programme through which benefits to the poor are provided directly. Garib Kalyan Mela is organized in each taluka every year and hence, it has also become an effective instrument of empowerment.

Given this context of the government resolve to accelerate human development in the state, the present report focuses on the District of Bhrauch.

Krushi Rath Yojana:

It was implemented during 2005-08 which includes Krushi exhibition, krushi mela, seminars, and soil health card for farmers etc. Since then the program is continued as intensive agricultural extension program.

These programs have yielded spectacular results for the agricultural economy in the state, with an average agricultural growth of about 12 % per annum.

Bharuch District: SWOT Analysis

The present Bharuch District was re-constituted under the Government Notification in September 1997 by excluding the erstwhile talukas of Nandod, Dediapada and Sagbara.

The district is situated between the Parallels of latitude 72 degree and 28 ounces, and 73 degree and 30 ounces and the meridians of longitude of 21 degree and 26 ounces and 22 degree and 16 ounces.

The length from the North to South of the territory is 96.86 Km, and from East to West is about 108.19 Km.

Strengths:

- The district has many strengths. The headquarter Bharuch city is a junction to Delhi – Ratlam – Vadodara – Mumbai as well as Delhi – Ahmedabad – Mumbai broad gauge railway line.
- Also, the six lane express way from Vadodara to Mumbai is passing from near the Bharuch city. Delhi-Mumbai Industrial Corridor (DMIC) is also passing from Bharuch district.

- One of the biggest rivers of India-Narmada is passing through the district and has positive impacts on soil fertility, water availability and evnvironment on areas adjoining the banks.
- On the western side, Dahej port is fuelling port-led development.
- Because of this strategic location and access to infrastructure, the district is having high potential for rapid economic development.
- The District also has lot of diversity- different socio-religious popupation groups, talukas with population of scheduled tribes accounting for more than two-third of the total. The coastal areas in the district have fishermen community also.
- It has sea coast of about 125 Km.

Weaknesses:

- However, in several talukas, land resource have constraints such as, soil erosion, salinity ingress in coastal areas, water logging in plains, poor quality of land and low natural fertility.
- There is also poor quality of underground water in nearly half of the area. There is also poor infrastructure in rural areas for promoting fishery.

Opportunities:

- However, there are many opportunities due to industrial development, development of ports, special economic zones and increase in irrigation potential from Narmada waters.
- Backward and forward linkages emerging from rapid industrial and port development, provide huge scope for small and medium enterprises across activities.
- Prospects for organised industrial employment for the youth are high.
- A variety of initiatives for the rapid development of agriculture and allied sector activities as detailed in the C-DAP which includes Agriculture and Technology Management Agency (ATMA), are promising inclusive development.
- More over due to the location of oil and gas fields in Vagra, the relatively infertile land for agriculture has become valuable resource.

Threats:

- Due to concentrartion of chemical industry, the Industrial pollution and hazards remain a major threat.
- Weak linkages between aspiring local youth and emerging employment opportunities and occupations.
- With rapid urbanization, the urban infrastructure may come under serious pressure and is likely to impact the quality of life.
- Occasional floods damage standing crops and property.

- Over use of canal irrigation water and of chemical fertilizer are posing threats for sustainable agricultural development.

Boundry:

The district is bounded by Anand and Vadodara districts in the North, Gulf of Khambhat in the West. Surat district is in the South and Narmada district is in the east. Amod, Vagra, Jambusar and Hansot talukas are to the west of Mumbai-Delhi railway line as well as to the west of national highway. Bharuch and Anklesvar talukas are in the middle. Valia and Jhagadia talukas which are predominantly tribal are in the east and the south east.

The area covered by the district is 6527 Km Sq. The district ranks 13th among the districts in terms of area. The density of population is 238 per sq km. (2011).

Demographic Details:

Population:

The population of Bharuch district (Census 2011) is 1551019 of which 1026060 or 66.15% is rural and 33.85% is urban population. The total population has increased by 13.14 percent between 2001 and 2011. However, the district has experienced spectacular growth of urban population by 49.88 %. The rural population in the district on the other hand almost stagnated as it increased only by 0.42 %.

Population	Rural	Urban	Male	Female
1551019	1026060	524959	805707	745312

Source: Census of India, 2011.

Population of Scheduled castes and tribes:

4.5% of the population of the district belongs to Scheduled Castes (as against 7 % in the state) and 32.4 % belong to Scheduled Tribes as against 14-15% % in the state. Bharuch District ranks 6th in terms of Scheduled Tribes population across districts in the state. Jhagadia and Valia talukas which also happen to be the largest talukas in terms of population, are declared as tribal areas each having more than 65 % as tribal population. In 2011 the scheduled tribe population is slightly lower to 31.48% as compared to 32.40% in 2001.

Similarly, the scheduled castes population which was 4.5% in 2001, has also registered some decline and is 4.01% in 2011.

SC Population	ST Population	Scheduled Castes		Scheduled Tribes	
		Male	Female	Male	Female
62235	488194	31979	30256	250398	237796

Source: Census of India, 2011.

Population by Religion:

The population following Hinduism in the district was 77.3 % as against 89.1 % in the state; similarly 9.1 % of population in the state were the followers of Islam religion but they accounted for 22.5 % in the district in 2011.

Sex Ratio:

The sex ratio in Bharuch district was 925 in 2011 as compared to 919 in Gujarat. The sex ratio in Bharuch district increased from 921 to 925 between 2001 and 2011. However, the ratio in Gujarat is somewhat lower (919) in 2011 as compared to 2001 (920).

2001		2011	
Sex Ratio	Sex Ratio (0 – 6 Years)	Sex Ratio	Sex Ratio (0 – 6 Years)
921	918	925	920

Source: Census of India, 2011.

Also the sex ratio in the population in the age group of 0 to 6 was significantly higher (920) in Bharuch district than in Gujarat (890) in 2011. This indicates that the birth and survival probability of a girl child in the district is higher than at the state level.

Units of Administration:

There are 8 talukas and 657 inhabited villages. There are 4 municipalities and 543 gram panchayats covering 658 villages and the total population of 13.71 Lakhs. In other words 113 villages are a part of group panchayats, mostly in tribal talukas of Valia and Jhagadia.

Micro Regions:

On the basis of topography, climate, geology, soils and natural vegetation, the district can be divided into sub-micro regions - Khambhat Silt, Bharuch plain, Lower Narmada Valley, Narmada Gorge, Satpura Hills, Tapi Basin, Valia Plain and Khambhat coast.

Drainage:

The district is drained by Narmada, Dhadhar and Kim rivers Smaller Rivers like Kaveri, Karjan and Dev rivers flow into Narmada River. Narmada is the biggest river in the district and is flowing from east to west. Dhadhar which is flowing from north to south enters the district in Jambusar taluka and is 46 Km long. Kim River originates in Ramanpura village of the Valia Taluka. It flows from east to west and is 115 Km long. Kaveri river flows only in Jhagadia Taluka and is 40 Km long.

All these rivers flow parallel to each other in the district and have contributed to alluvial plains of south Gujarat including Bharuch district.

Rainfall:

The rainfall in the district is received during the south – west monsoon season from June – September. July is normally the month with the highest rainfall. The annual average rainfall of last thirty years in the district across talukas varied from 889 mm in Bharuch to 518 mm in Amod with the district average of 707 mm.

Forestry:

Out of the total reported district area of 6527 Sq. Km, 245 Sq Km. is the forest area. It accounts for about 4% of the district area. Teak, Dhavado, Sadada which are found in Jhagadia taluka are of poor quality. In Valia taluka also, besides the above mentioned species biyo is also grown. However, these are of stunted growth and the density is very poor. The total value of the forest produce is limited.

Minerals:

Major mineral products are silica sand, lignite, ball clay and agate stone.

Soil:

Black soil covers the largest area i.e. 402860 ha. While gorat soil covers about 121150 ha. Both the soils are fertile for agricultural production – foodgrains and commercial crops in Kharif as well as in Rabi season. Bhatha and Kyari soils are even more fertile but cover limited areas. The soil in the coastal talukas of Hansot, Vagra and Jambusar is affected by salinity. Underground water is salty and hence many of the coastal villages in these talukas face the problems of drinking water as well as for irrigation.

Education:

Bharuch district occupies quite favourable position in terms of literacy and primary education in the state. There is no educationally backward taluka in the district. The enrolment in class-I is nearly total while the dropout rates in primary education are very low and falling further. It is noteworthy that there are as many girls as the boys among all the students in primary education in the districts. However, there is a trend towards private schools. About 35% of the students in the district are enrolled in private schools. Hence, quality of education in government schools would be the key factor to compete with the private schools.

Considering the achievements in the primary education, the district may now focus on providing almost universal access to secondary and higher secondary education particularly in Science stream to the children of vulnerable sections of the society in general and Vanbandhu children in particular.

Health:

Despite some gaps in medical and para-medical personnel in the rural primary health care system, it can be taken that, the district has fairly well established and functioning rural health care services down to the remote villages across talukas.

The achievements in terms of reducing the infant deaths and maternal deaths are commendable. However, the major problem is of malnutrition. This is despite the working of the ICDS and public distribution system and several other interventions. Although the problem does not seem to be wide spread, its incidence is quite visible among women and children of the vulnerable sections of the society whom we met in field visits. This is a challenge to be tackled through innovative approaches.

The 108 medical emergency services is the most successful and is used by all sections of the population. It is being used increasing in pregnancy related cases also.

The district has covered about 63 % of the BPL families under the Rashtriya Swastha Bima Yojana (RSBY). Several categories of migrant workers however do not seem to have been covered for the benefit under RSBY. It has not yet reached to the most vulnerable families. Hence, a registration drive may be necessary to achieve the registration of 100 percent.

Workers and industrial classification:

Census 2011 data reveal that 12.44% of the total workers in the district, are recorded as cultivators but, 40.51% are agricultural labourers, 1.44 % are in household industry while a significant percentage of 45.77 % are classified as other workers.

Important crops:

In agriculture, Cotton and Tur are the two most important crops. However, about half of the acreage under cotton is without irrigation. Moreover, in both these major crops, the yield per ha in the district is lower than the yield in the state.

It is noteworthy that the farmers in the district are now taking to horticulture and to value added cropping pattern. Considerable focus is placed on the water economising techniques of irrigation and on water use efficiency and on water conservation. At the same time, the area of concern is the in-discriminate use of canal water for irrigation leading to water logging and salinity.

Animal husbandry:

While there is diversification into animal husbandry and dairy on the one hand, the BPL families find some income and food security in wide spread adoption of poultry and goat keeping. The allied sector activities of goat keeping, poultry, fishing, dairy and agro processing have high potential to increase and stabilise income of the poorer sections of the society. The C-DAP has rightly focused on these allied activities which will make the development inclusive.

Land development: non-agricultural use

In the coastal areas, salinity as well as in some parts water logging, make the land infertile. Hence, the land development becomes very important issue. It is however noteworthy that, due to the development of port and Special Investment Region (SIR), the land values have gone up. The lands which have been inferior for agriculture have become valuable for industrial and other uses and enhanced the aspirations of the people for prosperous future.

The scale of special programmes to generate wage employment like MGNREGA and self-employment like SJSY and Vajpayee bankable Yojana has increased in terms of number of beneficiaries as well as the amount of loan and works of capital formation such as approach roads, water harvesting structures have helped to strengthen the economic base and also environment.

Industrial Development:

What is even more important is that, the district is experiencing rapid industrial development. The development of the port Dahej as well as the Petroleum Chemicals and Petrochemical Investment Region are attracting large scale investment.

Bharuch has several prestigious industrial projects and activities. Among these are Oil and Natural Gas Commission (ONGC); Asia's largest chemical industrial estate at Ankleshvar; chemicals port of India at Dahej; Gujarat Narmada Vally Fertilizers (GNFC); Multinational companies such as HOECHST; BOROSIL; ASIAN PAINTS, GLAXO and WACKHARDET.

While these developments are promising good quality of employment, it will give rise to rural-urban migration and the urban centers are likely to face consequent problems of housing, sanitation, drinking water and environment.

Above all, the youths of the district particularly from the scheduled tribes would need special attention for their education and skill development if they are to be the beneficiary of the growing opportunities.

It is a welcome sign that the district has comprehensive skill development infrastructure in the public as well as in the private sector which also includes the Kaushalya Vardhan Kendras (KVKs). What is probably needed is to have a systematic survey of the occupational skill composition in the emerging new jobs and establish a linkage with the existing skill development and training infrastructure in the district.

Places of interest:

Shuklatirth is in Bharuch taluka and is on the bank of Narmada. It is the place of pilgrimage as well as tourist resort.

Dargah of Bawa Rustom is at Palej in Bharuch taluka and is the Dargah of Muslim saint. A three day fair is organized on 22 day of Jamat - Ul - Avval month.

Bhadreshwar Mahadev Temple is in the village Bhadreshwar in Bharuch taluka and is the place of pilgrimage. A kumbh mela is organized every 18 years.

Annual Urs at Pardi Mokha, Ankleshwar Taluka is held at a tomb of Sultan Shah Pir, a Muslim Saint. The place is known as Pir Pardi and is the place for pilgrimage for Muslims.

Sasu Vahuna Dera at village Kavi in Jambusar taluka is of 17th Century and are the monuments of archaeological interest. It is also believed that Kapil Muni had his ashram there.

Kabir Wad is situated on an island in the broad bed of river Narmada and is at a distance of 90 Km from Vadodara. Giant Banyan tree covering about 17 Acres of area is of great attraction. It is a picnic spot also.

Men of letters:

Bharuch District is home to many distinguished men of letters and visionaries who include Shree K.M Munshi, Chhotubhai and Ambubhai Purani, Poet Sundaram and Musician Omkarnath Thakur among other.

Vulnerability issues:

The scheduled tribe population in the district accounts for 32 %. In Valia and Jhagadia talukas, scheduled tribes population accounts for 66-71% in each. Nearly two third working population in rural area of the district is dependent on wage labour both agriculture and non-agriculture.

On account of the major concentration of chemical and chemical product industries in the district, the industrial pollution particularly in Ankleshwar and Bharuch are the areas of concern.

Although rivers in the district have formed large alluvial fertile plains for agriculture, these are extensively dissected by gully erosion and deep cut channels making difficult to bring land under cultivation.

The area in the coastal region called Bara, is subjected to tidal effects through the year.

Along the coastal area of about 50 to 60 Km long, there is a problem of salinity ingress which has adversely affected the quality of water for drinking as well as for agriculture and animals husbandry.

There are about 8000 fisherman families whose livelihood issues have become acute on account of rapid industrial and port development.

Flooding of villages on the bank of river Narmada sometimes is causing extensive damage to crops and to property.

The rapid industrialization of Bharuch district will generate large number of opportunities for employment and improvement in living standard of the people. However, the concentration of chemical industry can increase industrial pollution and hazards in the area. Therefore, the mechanism and regulations should ensure that the harmful effects are prevented.

On the whole, the district is on the threshold of accelerating overall development. All the sections of the society have become very much aware of these growing opportunities and to a large extent know about government schemes and programmes for their social and economic welfare.

The development process has become inclusive in nature. To make is sustainable, it is necessary to focus for high school and higher secondary education, public distribution system, social and health insurance.

CHAPTER – 2

Education

CHAPTER – 2
EDUCATION

Every individual is born with a collection of abilities and talents. Education in its many forms has the potential to help, fulfil and apply them. Hence, access to educational opportunities in general and of quality education in particular, is the key to success in life.

Literacy and primary education thus, play the foundational role for professional education and development of skills. With primary education becoming widespread, additional expenditure gets focused more on backward rural areas vulnerable social groups, girls and urban poor. In this sense, primary education becomes inclusive in nature. It is also important to note that the primary education especially of girls, has favourable effects on the next generation's health, fertility and education.

Although education is much more than the preparation for labour market entry, the fact is without secondary and higher secondary education which is now, a threshold level of education, entry in to the labour market will not be easy. Hence, as the transition of students beyond primary stage are reaching the desired levels in the state in general and Bharuch district in particular, the policy makers will focus on secondary and higher secondary education and its quality.

The level and changes in the literacy, primary education, secondary and higher secondary education and various government initiatives in Bharuch district are examined in this context. The analysis based on data, has also been supported by evidence from the field visits wherever possible.

Literacy Rates:

Literacy rates for male, female and persons in 1991, 2001 and 2011 in Bharuch district have been compared with the same in Gujarat state. Literacy gap across talukas are also analysed.

Table:- 2.1 shows the literacy rates, 1991 to 2011 for male and female in Bharuch District and in Gujarat.

Literacy Rate (%)						
Year	Persons		Male		Female	
	Gujarat State	Bharuch District	Gujarat State	Bharuch District	Gujarat State	Bharuch District
1991	61.29	65.76	73.12	76.31	48.64	54.27
2001	69.14	74.41	79.66	82.98	57.8	65.11
2011	78.03	81.51	85.78	87.45	69.68	75.09

Source: Census of India, 1991, 2001 & 2011.

It will be observed that the literacy rates for male, female and persons in Bharuch district are higher than in the state in 1991, 2001 and in 2011. The literacy rates for male in 2011, was 85.78 % and for female 69.68 %. Between 2001 and 2011, the literacy rates have increased in Gujarat as well as in Bharuch district. However, the rates in the district have increased at slightly lower rate than in the state.

The literacy gender gap in the district in 2011 was 12.36 %age as against 16.1%age in the state.

Table 2.2: Literacy Rates by Sex and Talukas, 2011 Bharuch District

Name of State / District / Taluka	Percentage			
	Persons	Males	Females	Literacy Gap
Jambusar	78.70	86.51	70.24	16.27
Amod	78.91	85.95	71.42	14.54
Vagra	80.21	87.79	71.39	16.40
Bharuch	86.18	90.49	81.62	8.87
Jhagadia	74.66	82.29	66.62	15.67
Anklesvar	85.74	90.44	80.42	10.03
Hansot	80.45	86.26	74.23	12.03
Valia	73.14	80.17	65.83	14.34
District Total	**81.51**	**87.45**	**75.09**	**12.36**

Source: Census of India, 2011

It is striking to note that the female literacy rates except in Bharuch and Ankleshwar talukas are lower than the district average. The literacy rates in tribal talukas of Valia and Jhagadia are conversing with other talukas due to relatively faster increase in a literacy rates over the decade. Yet female literacy rate in tribal talukas was quite lower than the female literacy rate in the district average.

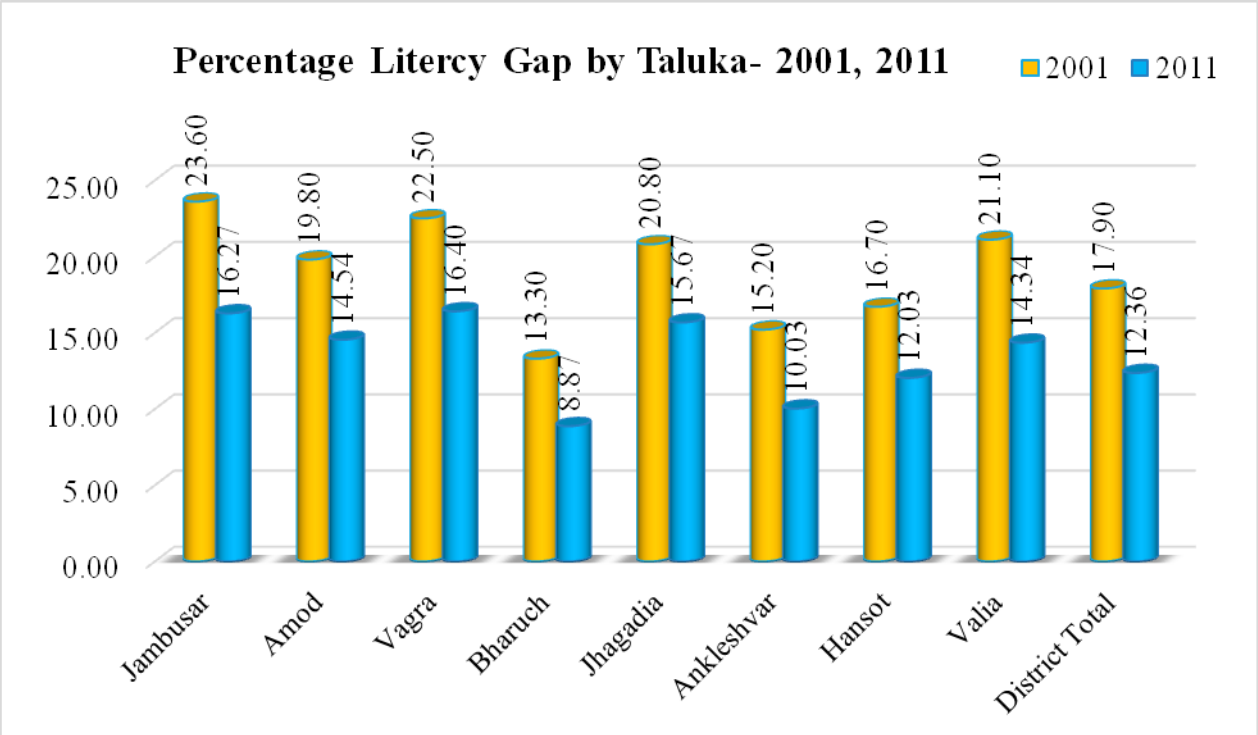


Table:-2.3
Percentage Litercay Gap by Taluka - 2001 , 2011 - Bharuch District

Name of Taluka	Gap in Male - Female Literacy Rate	
	2001	2011
Jambusar	23.60	16.27
Amod	19.80	14.54
Vagra	22.50	16.40
Bharuch	13.30	8.87
Jhagadia	20.80	15.67
Ankleshvar	15.20	10.03
Hansot	16.70	12.03
Valia	21.10	14.34
District Total	**17.90**	**12.36**

Source: Census of India

The gap in the literacy rates has narrowed down between 2001 and 2011 across talukas. The rural urban literacy gap was 10% points for persons, 7% points for male and 14% points for females in 2011 in the district.

Primary Education in Bharuch District:

All government primary schools are managed by local bodies- panchayats and municipalities. In addition to government schools, there are government aided and unaided private schools. There are some Asharm Shalas and Uttar Buniyadi schools also. Primary schools include primary from standard 1 to 5 and upper primary education from standard 6 to 7/8. Since June 2010, std 8 is brought under the upper primary stage of schooling. The right to education Act is also implemented from June, 2010.

In all, 95.12% of the villages are having 1 to 7 std schools in the rural areas of the district. Only 3% of the villages have 1 to 5 std schools. At the same time, it may be noted that 18 schools are single classroom schools and 9 schools are single teacher schools. Although this may help to ensure the access to school, such schools may have problems with the quality of education and hence, would need special attention.

Number of primary schools and class rooms:

The table below shows, the total number of primary schools and the total number of classrooms between 2008-09 to 2011-12. There were 1181 primary schools in 2008-09. In 2011-12, one more school was added taking the total to 1182.

The latest figure for the year 2013 indicate that there were 1208 primary schools. This means 26 more primary schools have been added to ensure universal access to schools.

Table:- 2.4 No of Primary Schools and total no of Classrooms : 2008-09 to 2011-12

Sr.No	Year	No of School	No of Class Rooms
1	2008-09	1181	7166
2	2009-10	1180	7174
3	2010-11	1181	7313
4	2011-12	1182	7542

Source: Sarva Shiksha Abhiyan (SSA), Bharuch.

The average number of class rooms per school increased from 6.07 in 2008-09 to 6.38 in 2011-12.

Amenities in primary schools across talukas:

While access to primary school has become universal in the district, the objective is to ensure that all primary schools are equipped with basic amenities and facilities to provide the best possible learning environment.

Table:-2.5 Primary Schools with Different Types of Amenities by Taluka, 2013 - 2014

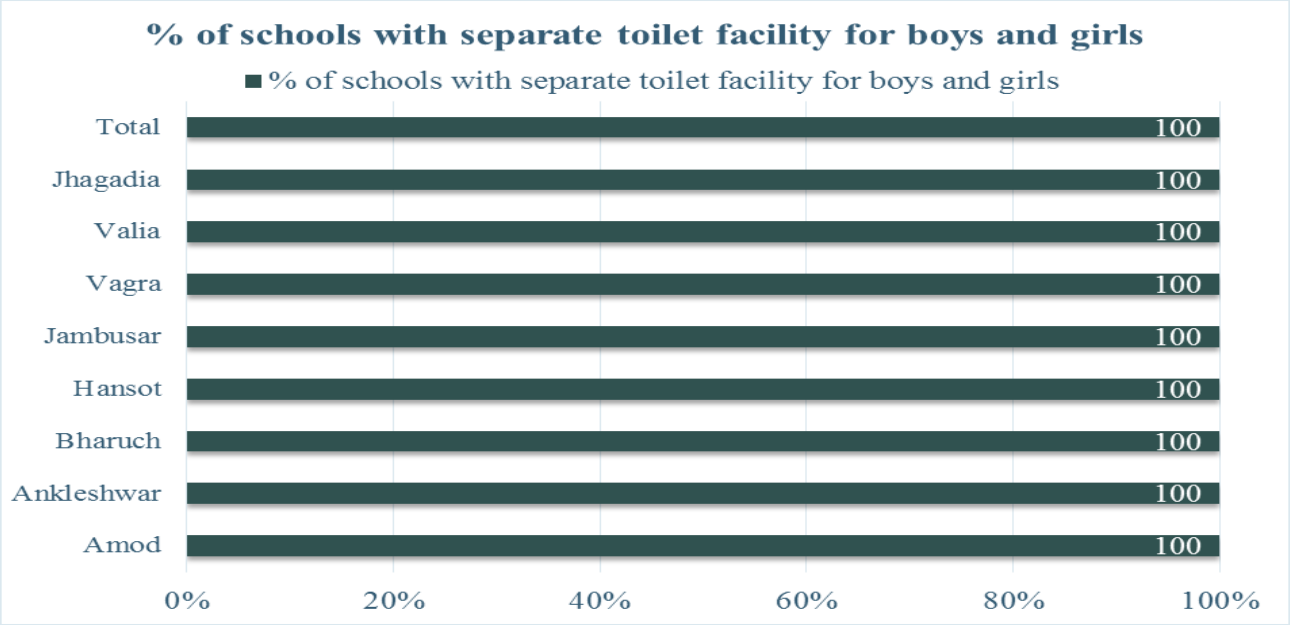
Sr. No	Nameof Taluka	Schools with Amenities					
		Toilet Facility for boys & Girls	Facility of Potable Drinking Water	Facility of Compound Wall	Facility of Play Ground	Facility of Electricity	Computer Facility
1	Amod	75	75	75	62	75	31
2	Ankleshwar	177	177	164	130	164	75
3	Bharuch	248	248	238	200	238	120
4	Hansot	69	69	68	56	68	41
5	Jambusar	142	142	135	95	135	89
6	Vagra	79	79	78	59	78	62
7	Valia	175	175	170	114	170	62
8	Jhagadia	243	243	231	150	231	128
Total		**1208**	**1208**	**1159**	**866**	**1159**	**608**

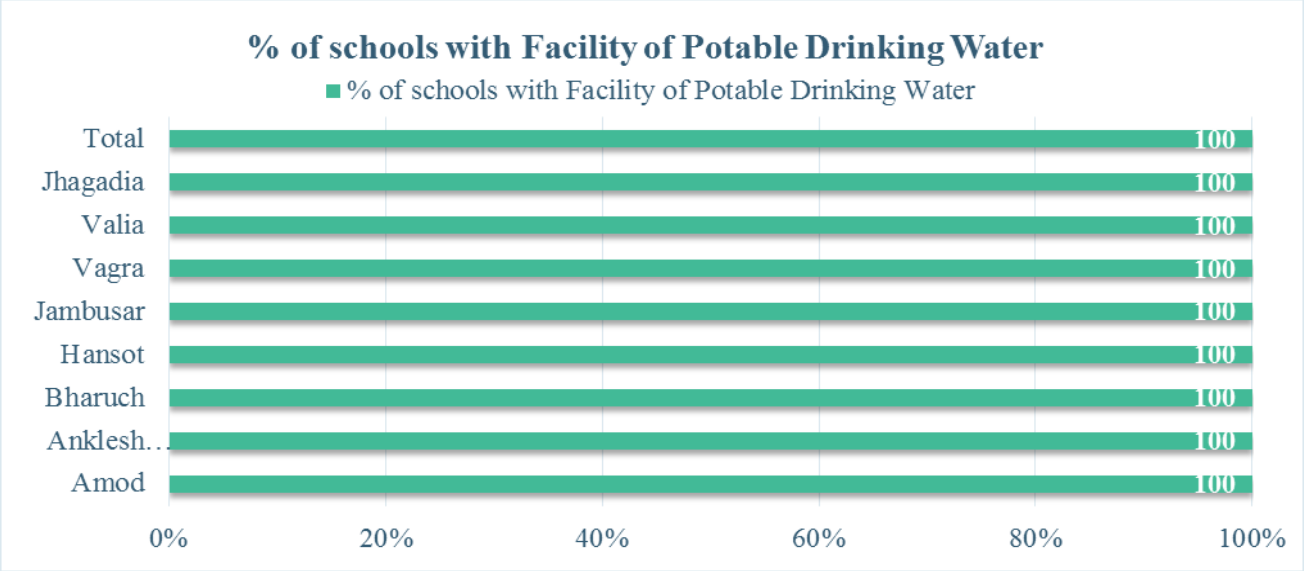
Source: Sarva Shiksha Abhiyan (SSA), Gandhinagar

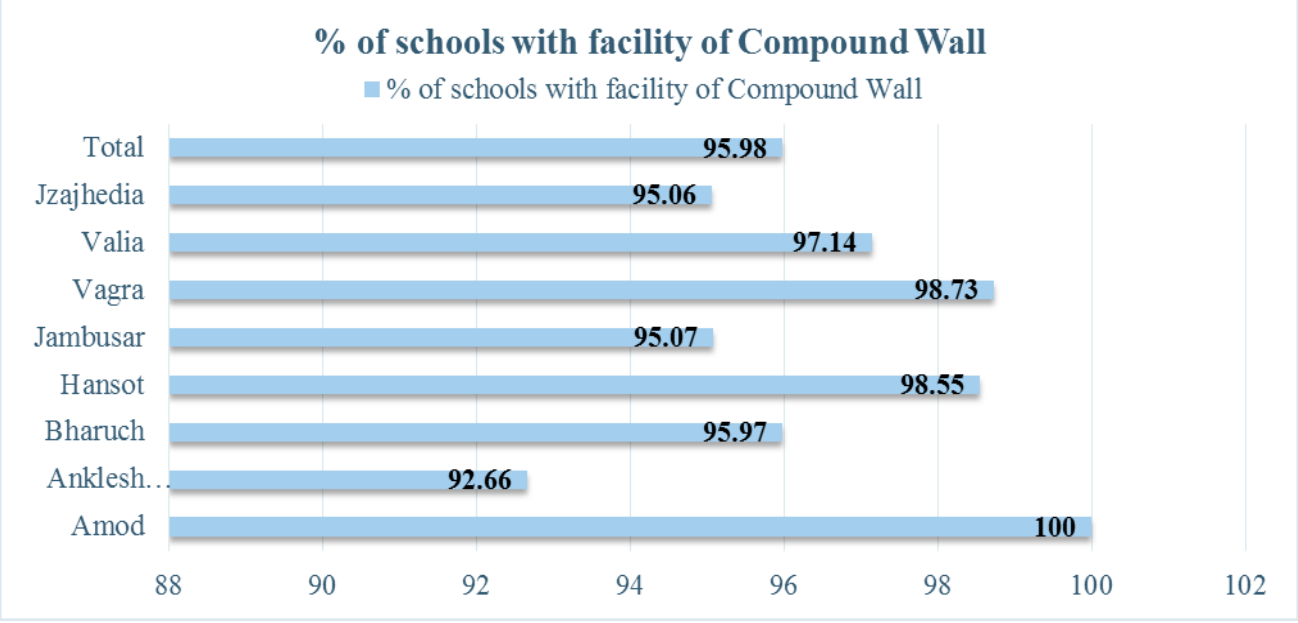
Table:-2.6

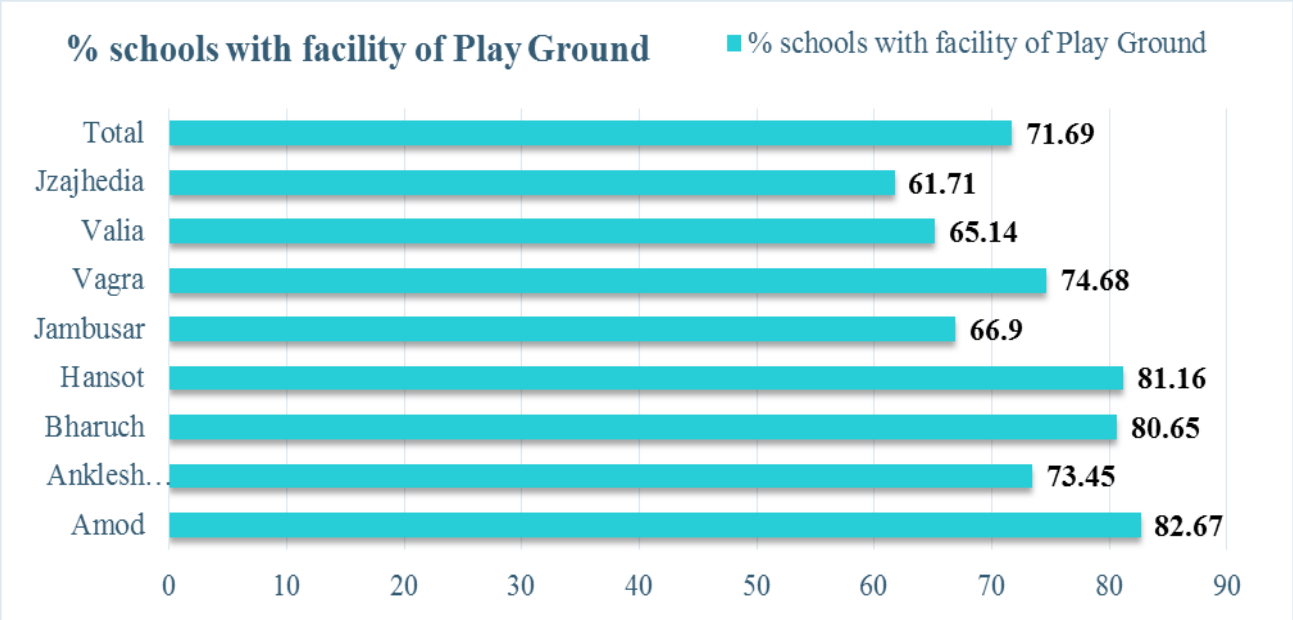
Percentage coverage of aminities in primary schools 2013-14, Bharuch District.

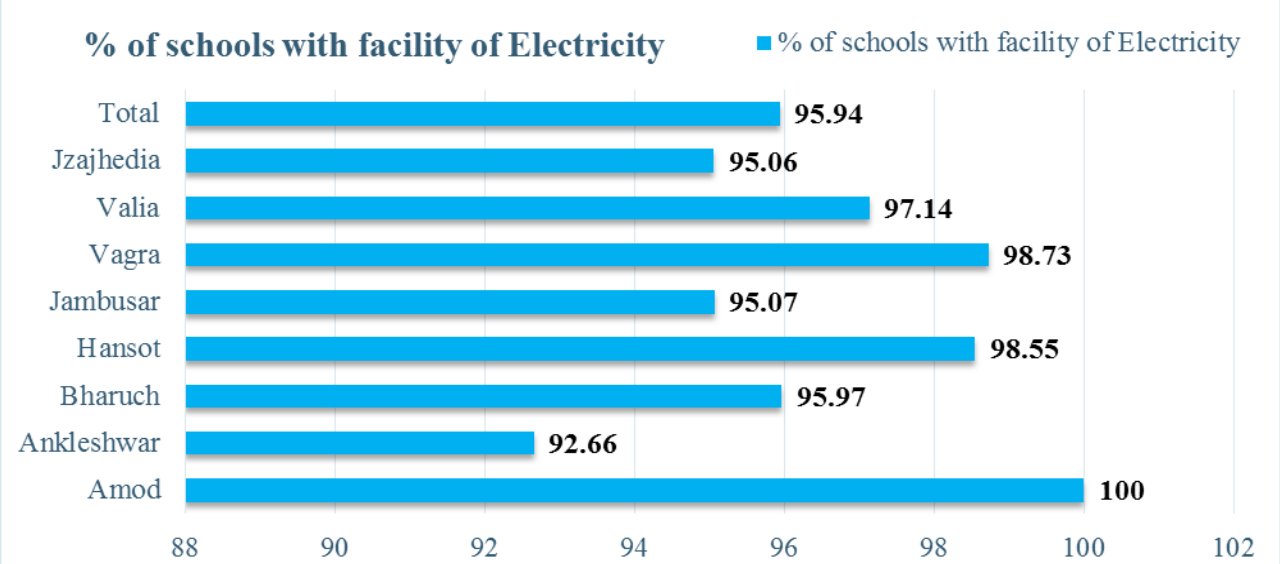
Name of Taluka	% of schools with toilet Facility for boys & Girls	% of schools with facility of Potable Drinking Water	% of schools with facility of Compound Wall	% schools with facility of Play Ground	% of schools with facility of Electricity	% of schools with computer Facility
Amod	100	100	100	82.67	100	41.33
Ankleshwar	100	100	92.66	73.45	92.66	42.37
Bharuch	100	100	95.97	80.65	95.97	48.39
Hansot	100	100	98.55	81.16	98.55	59.42
Jambusar	100	100	95.07	66.9	95.07	62.68
Vagra	100	100	98.73	74.68	98.73	78.48
Valia	100	100	97.14	65.14	97.14	35.43
Jhagadia	100	100	95.06	61.71	95.06	52.67
District Total	100	100	95.98	71.69	95.94	50.33

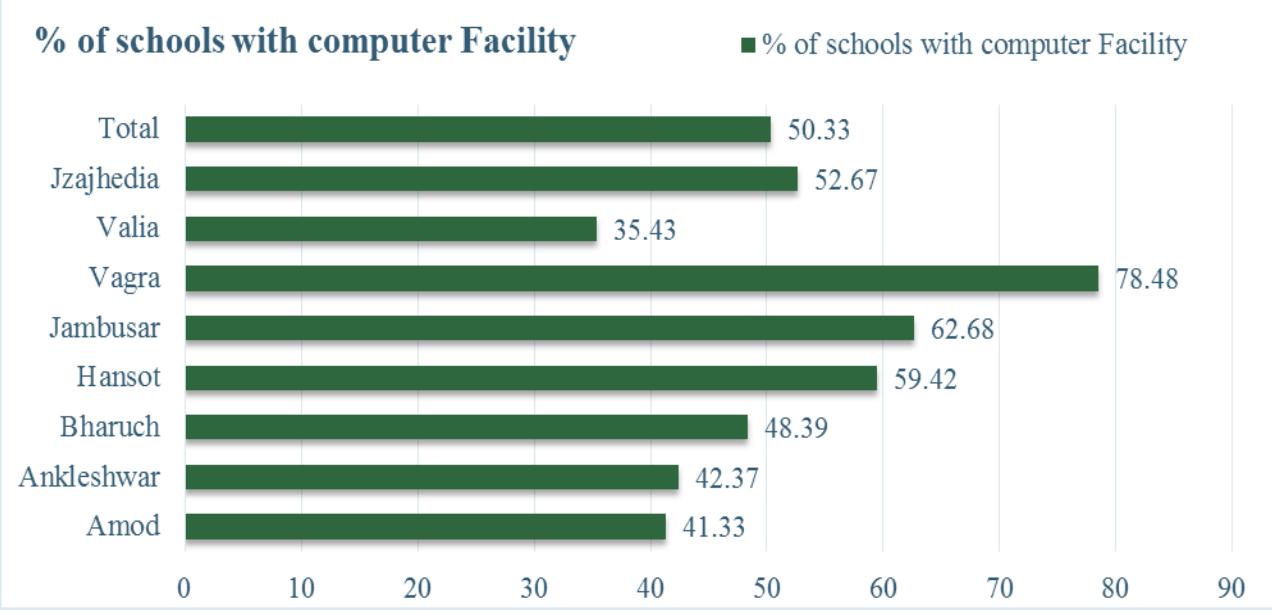

% of schools with separate toilet facility for boys and girls
% of schools with separate toilet facility for boys and girls
Total
Jhagadia
Valia
Vagra
Jambusar
Hansot
Bharuch
Ankleshwar
Amod
100
0%
20%
40%
60%
80%
100%


% of schools with Facility of Potable Drinking Water
% of schools with Facility of Potable Drinking Water
Total
Jhagadia
Valia
Vagra
Jambusar
Hansot
Bharuch
Anklesh..
Amod
100
0%
20%
40%
60%
80%
100%


% of schools with facility of Compound Wall
% of schools with facility of Compound Wall
Total
Jzajhedia
Valia
Vagra
Jambusar
Hansot
Bharuch
Anklesh..
Amod
95.98
95.06
97.14
98.73
95.07
98.55
95.97
92.66
100
88
90
92
94
96
98
100
102


% schools with facility of Play Ground
% schools with facility of Play Ground
Total
Jzajhedia
Valia
Vagra
Jambusar
Hansot
Bharuch
Anklesh..
Amod
71.69
61.71
65.14
74.68
66.9
81.16
80.65
73.45
82.67
0
10
20
30
40
50
60
70
80
90


% of schools with facility of Electricity
% of schools with facility of Electricity
Total
Jzajhedia
Valia
Vagra
Jambusar
Hansot
Bharuch
Ankleshwar
Amod
95.94
95.06
97.14
98.73
95.07
98.55
95.97
92.66
100
88
90
92
94
96
98
100
102


% of schools with computer Facility
% of schools with computer Facility
Total
Jzajhedia
Valia
Vagra
Jambusar
Hansot
Bharuch
Ankleshwar
Amod
50.33
52.67
35.43
78.48
62.68
59.42
48.39
42.37
41.33
0
10
20
30
40
50
60
70
80
90

It can be seen that the basic amenities of separate toilet for boys and girls and drinking water in the district are available in all primary schools across all villages.

96% of the schools have electricity. However, 5 to 7% of the schools in Jhagadia and Ankleshwar were without electricity in 2013-14.

Probably, these are pockets and falias with highly scattered pattern of habitation. 71.69% of the primary schools have the facility of playground and 95.98% also have the compound wall. In Ankleshvar 7% schools do not have a compound wall. However, schools with computer facility are only half of the total. This gap is striking in the case of Amod, Ankleshwar and valia talukas.

Number of teachers in primary schools:

There were 6898 teachers in 1180 schools in 2009-10 or 5.85 teachers per school. In 2013-14, the numer of teachers per school increased to 7.12. About 55% were female teachers. Also, about 13% of the teachers belonged to the schedule tribes and 8.32 % were from scheduled castes.

Table –2.7 Number of Teachers in primary Schools: 2009-10 to 2013-14

Sr.No	Year	No of schools	No of Teachers
1	2009-10	1180	6898
2	2010-11	1181	7100
3	2011-12	1182	7779
4	2012-13	1226	8743
5	2013-14	1208	8603

Source: Sarva Shiksha Abhiyan (SSA), Gandhinagar

The total number of teachers in all primary schools increased from 6898 in 2009-10 to 8603 (in 1208 schools) in 2013-14. In other words, there were 7.12 teachers per school. Also, among the total female teachers in primary schools, scheduled tribes teachers and scheduled castes female teachers accounted for 8.91 % and 7.55 % respectively.

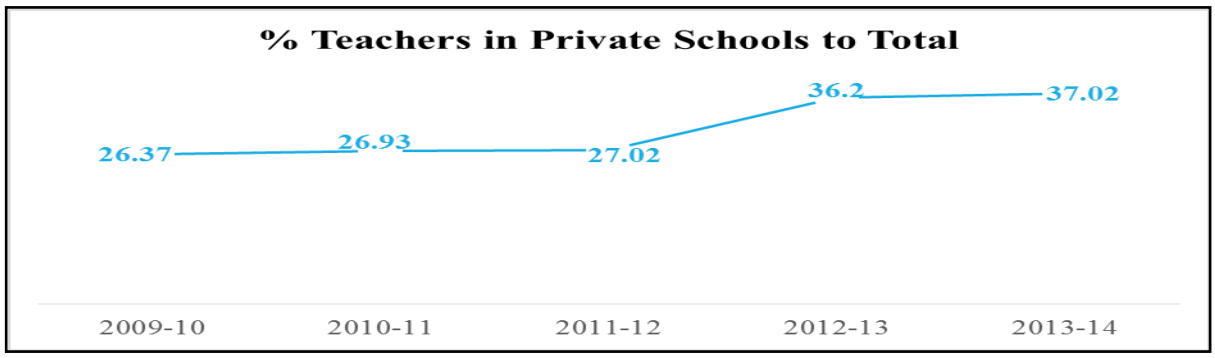
This indicates that the proportion of schedule tribes teachers in the total as well as among the female teachers in primary schools, is much less than their proportion in the population. This gap can be filled in as more and more schedule tribe students transit to secondary and higher secondary education.

It is observed that the primary schools provide more employment to females who complete primary teachers training (PTC) course after std 10 or std 12 in secondary and higher secondary education. They can also do the course of Bachelor of Education (B. Ed.) after graduation and can qualify as teachers in secondary schools.

Table 2.8 No. of Teachers by Category of Schools, 2009-10 to 2013-14

Year	Government	Private	Total	% teachers in private schools to total
2009-10	5078	1819	6897	26.37
2010-11	5188	1912	7100	26.93
2011-12	5677	2102	7779	27.02
2012-13	5578	3165	8743	36.20
2013-14	5421	3187	8608	37.02
Source: SSA, Gandhinagar				

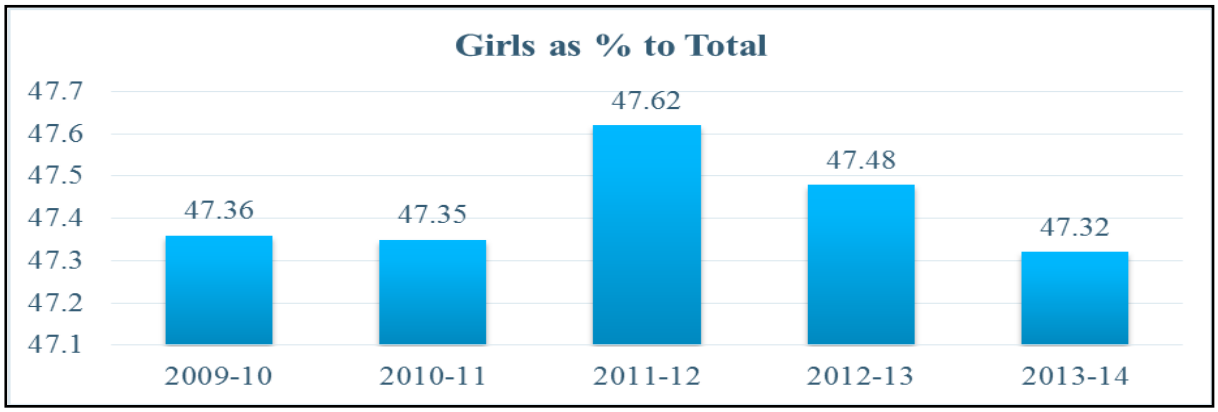
Apart from increasing percentage of private schools and enrolment, the percentage of teachers in private schools have also increased over time.



Trend in Enrolment in Primary Schools:

Table 2.9 Enrolment in All Primary Schools in Bharuch District, 2009-10 to 2013-14

Year	Boys	Girls	Total	Girls as % to Total
2009-10	112632	101341	213973	47.36
2010-11	113923	102440	216363	47.35
2011-12	114648	104210	218858	47.62
2012-13	124774	112801	237575	47.48
2013-14	122861	110352	233213	47.32
Source: SSA, Gandhinagar				



The total enrolment in all primary schools was 213973 in 2009-10. It increased to 233213 or by 8.99% by 2013-14. Considering the decrease in the population in the age group 0-6 years between 2001 and 2011. This increase is reasonable and indicates almost complete coverage of the school going children.

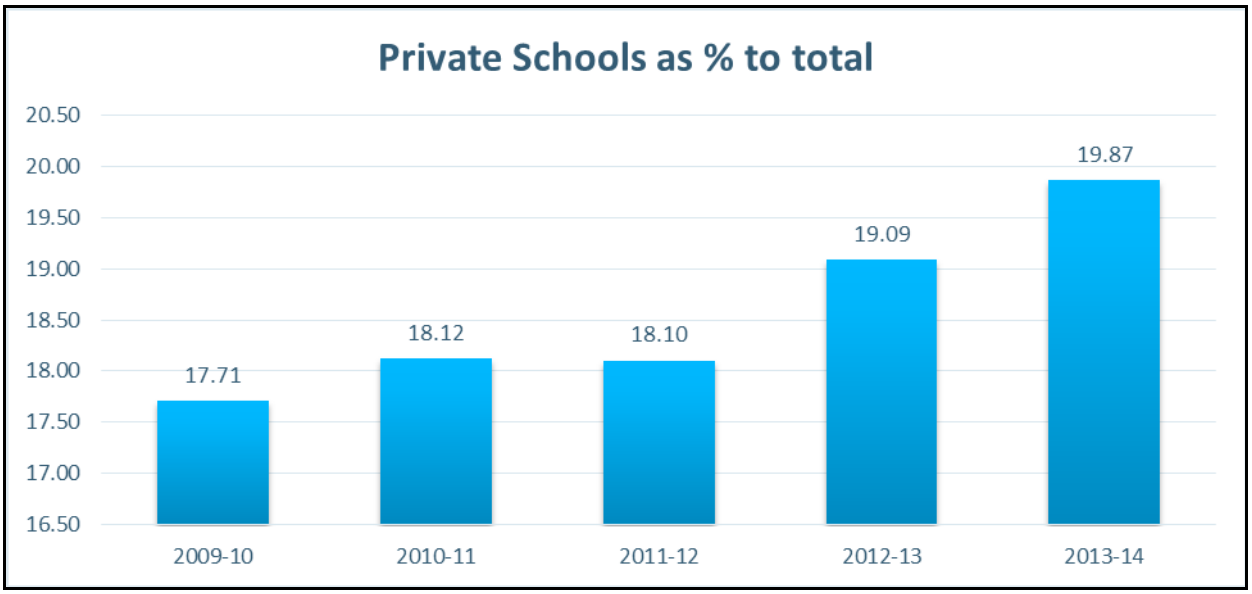
It can be also seen that the girl students as percentage to the total have remained at around 47% through out. Given the sex ratio, this also shows almost gender parity in enrolment in primary schools in the district.

Trend towards private schooling in primary education:

Out of 1208 primary schools, 240 or 19.86% were private schools in 2013-14 in the district. The private schools as percentage to the total schools in the district has gone up from 17.71% in 2009-10 to 19.86% in 2013-14.

Table:-2.10 Number of Schools by Category in Bharuch District, 2009-10 to 2013-14

Year	Government	Private	Total	Private as % to total
2009-10	971	209	1180	17.71
2010-11	967	214	1181	18.12
2011-12	968	214	1182	18.10
2012-13	992	234	1226	19.09
2013-14	968	240	1208	19.87
Source: SSA, Gandhinagar				



While competition between public and private schools may improve the overall performance, the universal primary education is the responsibility of the state. Improvement in the quality of education in government schools can make them as attractive as the private schools. In fact, it is likely that, the teachers in government schools are better paid than the teachers in other schools.

Enrolment in Std 1:

The stagnation in enrolment in primary schools can be seen in the context of the overall decrease in the enrolment in std 1. The enrolment of boys in std 1 was 112632 and for girls 101341 in the year 2009-10. In the year 2013-14, the enrolment of boys in std 1 decreased

to 122861 and of girls decreased to 110352. However, It may also be noted that almost equal number of boys and girls are enrolled in class 1 during the period mentioned above.

Table 2.11: Enrolment in schools (Std 1)

Year	Enrolment in schools (Boys)	Enrolment in schools (Girls)	Enrolment (Total)	Percentage of girls enrolled
2009-10	112632	101341	213973	47.36
2010-11	113923	102440	216363	47.35
2011-12	114648	104210	218858	47.62
2012-13	124774	112801	237575	47.48
2013-14	122861	110352	233213	47.32

Source: Sarva Shiksha Abhiyan (SSA), Gandhinagar

Over a period of time, the number of students enrolled in class 1 in government primary schools has decreased. However, the proportion of boys and girls in the yearly enrolment is equal and has not changed.

The decline in the enrolment of students in the government primary schools however does not indicate increase in the number of never enrolled children of school going age nor does it indicate any reduction in retention rate of students from std 1 to 7.

This is evident in two factors –the shift to non-governmental aided and unaided private primary schools in the district. About 35 % of the students have been enrolled in private schools. Second, there is significant decline in the population in the age group 0-6 Years during 2001-2011 in the district.

Decline in Child Population (0 to 6 years):

Apart from the shift to private schooling in primary education, there is also the factor of declining child population between 2001 and 2011. Hence, the overall decline in the enrolment in std 1 to 7 in government schools can be seen in this context of decline in the proportion of children in the age 0 to 6 years also.

The 0 – 6 years of age population which accounted for 14.16 % in 2001 decreased to 11 % in 2011 in the district.

Enrolment, retention and drop outs in government primary schools:

Retention of students from class 1 to 5 and from class 1 to 7 of primary education is affected by a variety of factors – basic amenities in schools, access to primary and upper primary schools, shifting to private schooling, gross and net enrolment ratios and economic compulsions of parents and the nature of their occupations.

The table below shows the Drop-out Rates in primary schools for the period 2009-10 to 2013-14 for boys, girls between class 1 to 5 and between class 1 to 7 for Bharuch district and Gujarat state.

Table:- 2.12
Drop-out Rates in primary schools (std 1 to 5) 2009-10 to 2013-14.

Year	Bharuch			Gujarat		
	Boys	Girls	Total	Boys	Girls	Total
2009-10	1.3	2.1	1.68	2.14	2.17	2.2
2010-11	1.6	2.58	2.07	2.08	2.11	2.09
2011-12	2.6	2.89	2.75	2.05	2.08	2.07
2012-13	1.09	0.82	0.96	2.02	2.06	2.04
2013-14	0.99	1.39	1.18	1.97	2.02	2
Source: Sarva Shiksha Abhiyan (SSA), Gandhinagar						

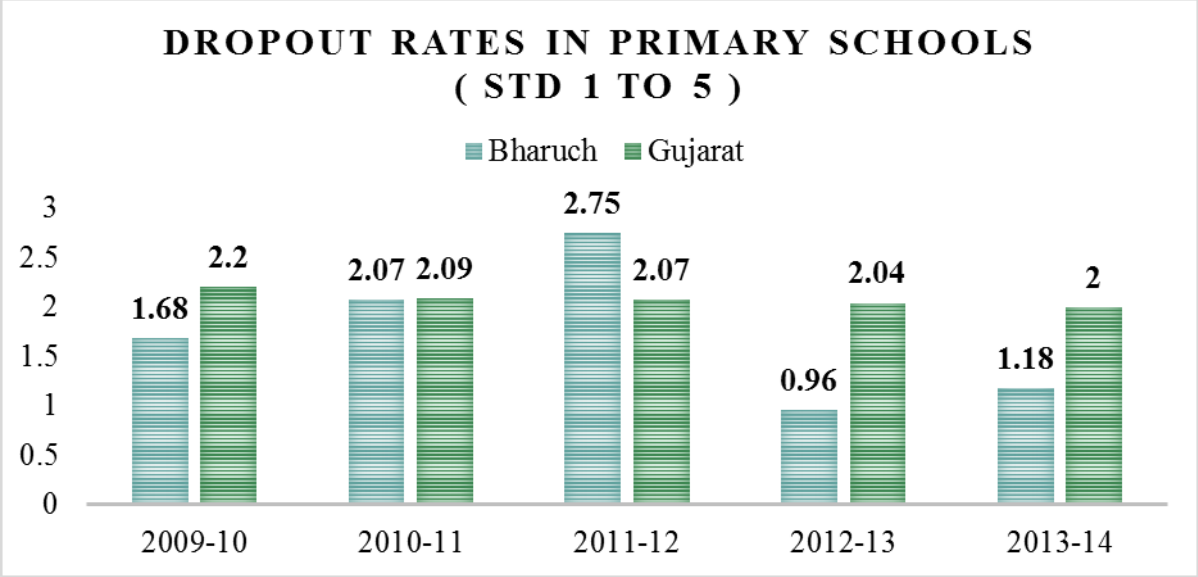


Table:- 2.13 Dropout Rates in primary schools (std 1 to 7), 2009-10 to 2013-14.

Year	Bharuch			Gujarat		
	Boys	Girls	Total	Boys	Girls	Total
2009-10	0.96	2.38	2.03	8.33	8.97	8.65
2010-11	1.17	1.9	1.52	7.87	8.12	7.95
2011-12	5.58	5.87	5.73	7.35	7.82	7.56
2012-13	2.34	1.66	2	6.87	7.37	7.08
2013-14	1.19	2.52	1.88	6.53	7.28	6.91

Source: Sarva Shiksha Abhiyan (SSA), Gandhinagar

The dropout rates between class 1 to 5 and between class 1 to 7 have fallen significantly in Bharuch district as also in Gujarat state (particularly between class 1-5) between 2009-10 to 2013-14.

The dropout rates among the boys as well as among the girls are significantly lower in Bharuch district than in the state. The drop-out rates for girls continue to be somewhat

higher than among the boys. The dropout rates in 2013-14 in Bharuch district (both between class 1 to 5 and class 1 to 7) are much lower than in the state.

The differences between the gross and net enrolment ratios also indicate the risk of dropout because of the mismatch between the eligible age group for schooling and actual attendance by age in different classes.

Table 2.14 Gross and Net enrolment ratios 2012-13

District / State	GER - boys	GER – Girls	GER - Total	NER - Boys	NER - Girls	NER - Total
Bharuch	100.97	100.70	100.83	99.40	99.21	99.31
Gujarat	102.06	100.87	101.45	99.54	98.97	99.25

Source: Sarva Shiksha Abhiyan, Gandhinagar

It can be observed, the Gross Enrolment Ratios (GER) in Bharuch district are lower than those in the state. The Net Enrolment Ratios (NER) are higher in the district as compared to those in the state. This means that Bharuch district has yet a task and challenge to ensure that all eligible age group children get enrolled in their appropriate class and stage in primary schools.

In order to understand the ground level realities of infrastructure and facilities of primary schools a field visit was undertaken to some village schools in Amod, Vagra and Jambusar talukas. These were randomly selected villages in which, we had the occasion to interact with the teachers, students and to observe on-going classes, arrangement for mid-day meals, toilet facilities for boys and girls, drinking water facility and the cleanliness of the school premises etc. These amenities are provided under Sarva Shiksha Abhiyan.

The first photograph shows good physical infrastructure, the second shows, a group of students-children in primary school in village Rodh, Taluka - Amod.

The second picture has captured the profile of boys and girl students. The other three pictures indicate the problems relating to cleanliness, hygiene.

The picture of Vichhiyad village, Taluka - Vagra, indicate lively school environment and girls students learning in the class.

The last three pictures are of primary school, Mangnad, Taluka - Jambusar. They indicate the use of aqua guard for drinking water, clean and neat school premises and display of time table of mid-day meal.

(Spacious physical infrastructure)

(Boys and Girls are smart and well dressed and are posing for a group photo)

(lack of maintenance of the premises for preparing mid day meal – the place is unhygienic)

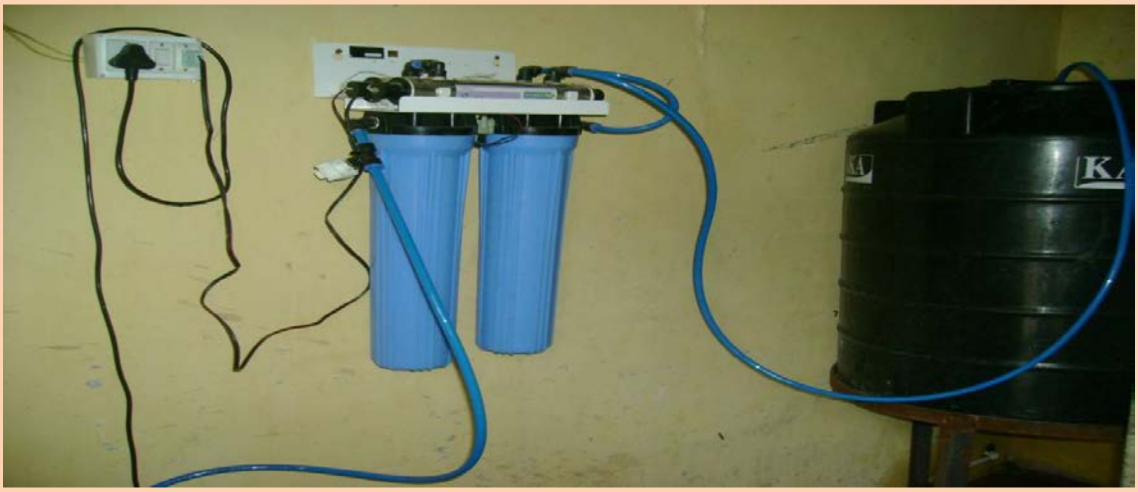
(Unhygienic surroundings of basic facilities)

(The surroundings of the drinking water facility are unhygienic)

(Educating a girl child- Primary school- Vichhia , Taluka - Vagra)

(Clean environment of Primary school- Magnad , Taluka - Jambusar)

(Mid day Meal – Time table- Magnad, Ta – Jambusar Primary school)



(Potable and safe drinking water – Primary school, Magnad)

Observations:

By and large, the ambiance of the school premises was good. Unfortunately in some cases they were untidy. There was a problem of maintenance and small repairs although we did not come across anybody telling us that there were no resources. The management of the schools should take care of the proper maintenance & repairs and cleanliness of the facilities. It can be seen from the photographs that both boys and girls were in proper dresses, were eager and dynamic and were also healthy. However, more needs to be done to maintain good standard of sanitation, hygiene, and drinking water facility.

We also found that due to less number of total students in the school, students from more than one standard were sitting together.

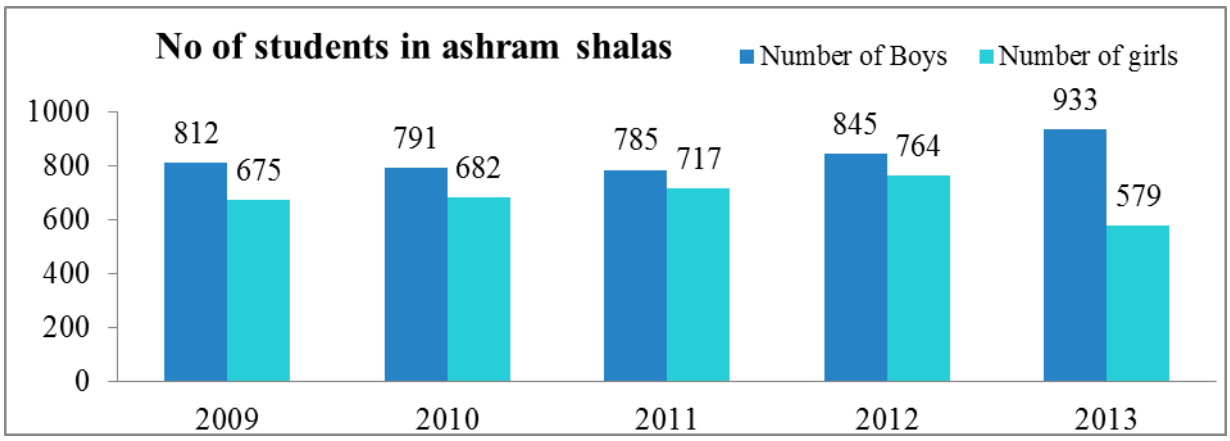
Drinking water facility with RO plant was also seen in one of the schools, but in another school the facility was untidy. Some children were found carrying water in plastic bottles for drinking. The room where, mid day meal is prepared needs to be hygienic and a clean place. This can be seen from the photograph. Valia and Jhagadia talukas are declared tribal talukas. There are also tribal pockets in other talukas. Hence, Ashram Shalas help to provide education for the children in the remote and inaccessible villages.

Ashram Shalas and Uttarbuniyadi Shalas:

Table:-2.15
Ashram Shalas and Uttar Buniyadi Schools: 2009 to 2013

Year	Number of Ashram Shalas	Approved strength of students	Filled in posts of teachers	Vacant Post	Number of Boys	Number of girls	Total
2009	11	1350	49	6	812	675	1487
2010	11	1350	49	6	791	682	1473
2011	11	1350	49	6	785	717	1502
2012	12	1470	54	6	845	764	1609
2013	12	1470	54	6	933	579	1512

Source: District Primary Education Office, (Sarva Shiksha Abhiyan) Bharuch



There were 9 Ashram Shalas and 2 Utter Buniyad shalas in 2009. The number of Ashram Shalas increased by 1 namely Ashram Shala in Netrang. The approved strength of students was 1350 in 2009 but increased to 1470 or by 80 students in 2013. The approved strength of students in each ashram shalas was between 120 – 150 students and it was 80 students in utter buniyadi shala.

The number of girl students was 675 in 2009 but decreased to 579 in 2013.The number of boys were 812 in 2009 and increased to 933 in 2013.

The physical condition of the Ashram Shala / Utter Buniyadi shala building is reported as pacca in 7 ashram shalas and pacca with manglori tiles in 3 ashram shalas. The physical condition of the building of the Uttter Buniyadi shalas is pacca. The status of amenities such as electricity, drinking water, toilet and bathroom is reported to be as having all these aminities. The Ashram Shalas are in tribal talukas in the villages – atali, elav, chasvad, thava, vankhunta, moriyana, haripura, kantipada, dodvada and netrang. Utter Buniyadi shalas are in kodvav and ratanpur.

Government initiatives in Primary Education:

Under Sarva Shiksha Abhiyan, a range of initiatives have been taken to promote the education of a girl child, to ensure 100% enrolment and retention in primary schools and, to improve quality of education etc.

Kanya Kelavani Yojana:

Kanya Kelavani Yojana focuses on education of the girl child. It has even greater focus on the education of the girl child from vulnerable families living in low literacy villages in the district. The girls whose parents have been identified as below poverty line and are living in these villages as per Census of 2001, become eligible for Vidya Lakshmi Bond.

Vidya Lakshmi Bond:

A girl child from such family and village who completes std 7 of primary education and, is enrolled in std 8, becomes eligible to receive Vidya lakshmi Bond under the kanya kelavani yojana of the Government of Gujarat. On maturity, the sum of Rs.1000 (face value of bond) will become a multiple of Rs. 1000 and the girl herself will be able to utilize as per her requirements and choice.

During 2010-11, 67 girl students from the above mentioned categories of families and villages received vidya lakshmi bonds.

In June 2011, 51 girls – 28 from 10 villages in Jhagadia taluka, 13 girls from 5 villages in Valia taluka, 7 girls from 4 villages from Jambusar taluka received vidya lakshmi bonds. In Amod, Hansot and in Bharuch also, 1-2 girl students received vidya lakshmi bonds. Also during the year2012, 405 girls received the bonds.

This suggests that this incentive scheme for a girl child is yielding positive results for continuation of education beyond primary stage among the most vulnerable families in the district.

Shala Praveshotsav:

Each Primary school in the district celebrates Shala Praveshotsav not only to create awareness for enrolment in class 1 but also, to explain the value of education among the parents. All the children in the eligible age for entry in class 1 are enrolled on that occasion and for this purpose, Rs. 10000 are allocated per event for organizing it every year. The highest importance is attached to this annual event. This can be judged from the presence of the Hon. Chief Minister on such occasions (see the photographs showing CM fondly speaking to a girl child and a handicapped boy.)

Inauguration of the Kanya Kelavani Mahotsav.

Shala Praveshotsav: Occasion is graced by the -then hon'ble C.M of Gujarat.

Gunotsav:

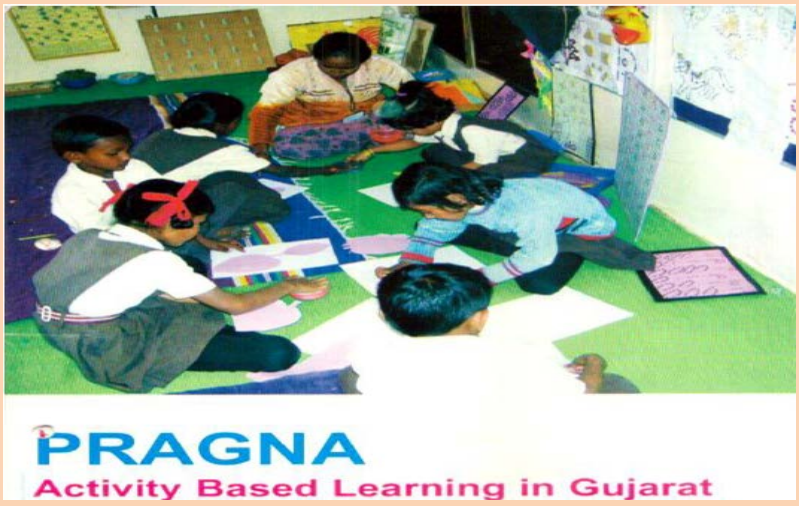
The state has provided physical infrastructure and manpower for primary education even in the remotest of the villages in the district. However the quality of education remains an area of major concern. In order to improve the quality of education, the Government is organising Gunotsav every year with the participation of the high level officials of the government. Several aspects of learning, status of infrastructure, capabilities and commitment of teachers, quality and status of basic amenities in the schools etc are thoroughly evaluated which can help in grading schools. The findings of the evaluation of schools indicate that a majority of the schools were in B,C,D grades in 2011.

Also the findings of teachers evaluation indicated that large number of teachers were in C,B,A,D grades in that order.

PRAGNA Schools and BALA Schools:

The district administration, Bharuch has taken a number of remarkable and innovative projects to bring about a fundamental transformation in how the children can be taught and how they can learn by using their talent.

Ability Based Learning Approach in Primary Schools under Implementation in Bharuch District:



Pragna, an Activity Based Learning (ABL) approach was initiated in Gujarat in January, 2012. An MOU was signed between Sarva Siksha Abhiyan (SSA), Gujarat and Pratham, Gujarat (a national NGO of Repute).

This new approach, challenges the conventional approach and padagogy used in primary school for teaching and learning – teacher centric, little or no scope for interactive learning and teaching, cannot address diversity in talent and creativity among the children etc. Pragna opens up the class room in a holistic and learner based way of working with children.

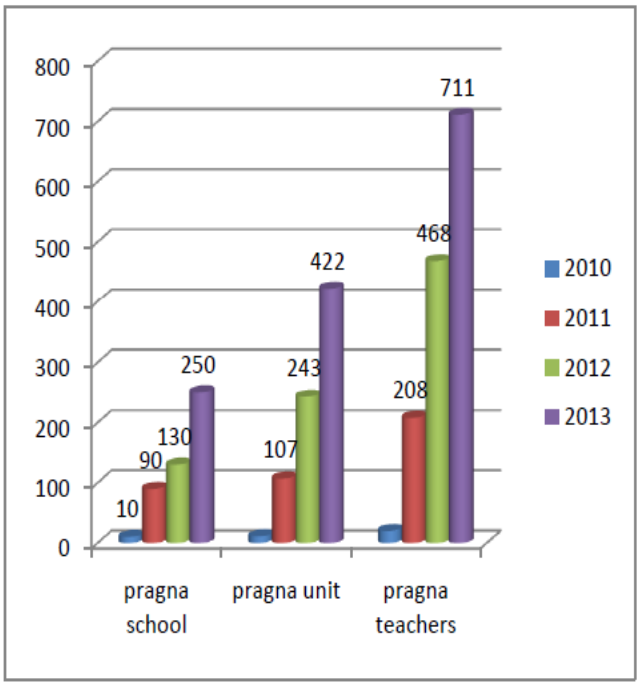
The material used for teaching and learning is designed by the UNICEF, Pratham and the Gujarat Council of Education Research and Training (GCERT).

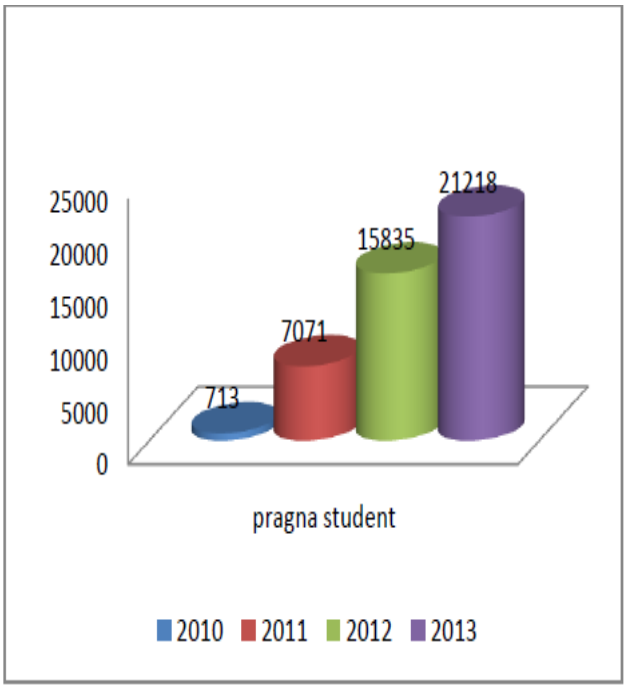
The ABL way is a step by step learning approach using the learning system consisting of ladder, cards etc.

Pragna in Bharuch District:

The Pragna approach (ABL) was implemented in primary schools in Bharuch district from 2010. The focus is on children in standard 1, 2 , 3 and 4 – the formative years in the life of a child.

Progress of Pragna Schools in 2010 to 2013:





In the year 2010, Pragna approach was implemented in 10 schools covering 713 children in the district. In 2013, 250 schools and 21218 students are covered under this innovative approach.

In 2013, there were 422 Pragna units and 711 Pragna Teachers as a part of the Pragna system which included quality control, monitoring etc.

Building As Learning Aid (BALA):

Another initiative is that the district administration, Bharuch has launched and innovative project in which the school building and its campus are so designed as to become a learning environment for the school children.

The photographs below are of a BALA school in Jhagadia taluka. It provides glimpsis of this new concept of school building, campus and how children are in the harmony of nature.

The approach is radically different from the conventional concept of school building with box type class rooms and lacking in harmony with nature and devoid of any inspirational value.

The government with the help of Gujarat Narmada Valley Fertilizers Limited (GNFC) Bharuch has operationalised this concept by setting up BALA schools in the villages which were found with 0 – 35 % literacy rates – socially backward villages in the district.

- The model school environment – lobby, classroom, walls, compound etc. Inspire new thoughts and ideas and learning process.

- It promotes team building and team spirit.

- Encourages interaction and sharing of ideas among the students.
- Provides scope for activating hidden talent among children.
- Between 2006-07 to 2012-13, 168 primary schools in the district have became model schools involving the expenditure of Rs. 375.61 lakhs.
- Similarly, 62 anganwadies have been converted in to modal anganwadi in 2009-10 involving the expenditure of Rs. 75.07 lakhs.

Impact of PRAGNA and BALA School Approach:

PRAGNA:

- The children are able to learn fast.
- Children are adopting self learning approach for education and are preparing Teacher Learning Equipment.
- Students come to school on time.
- The grasping power of the students have increased.

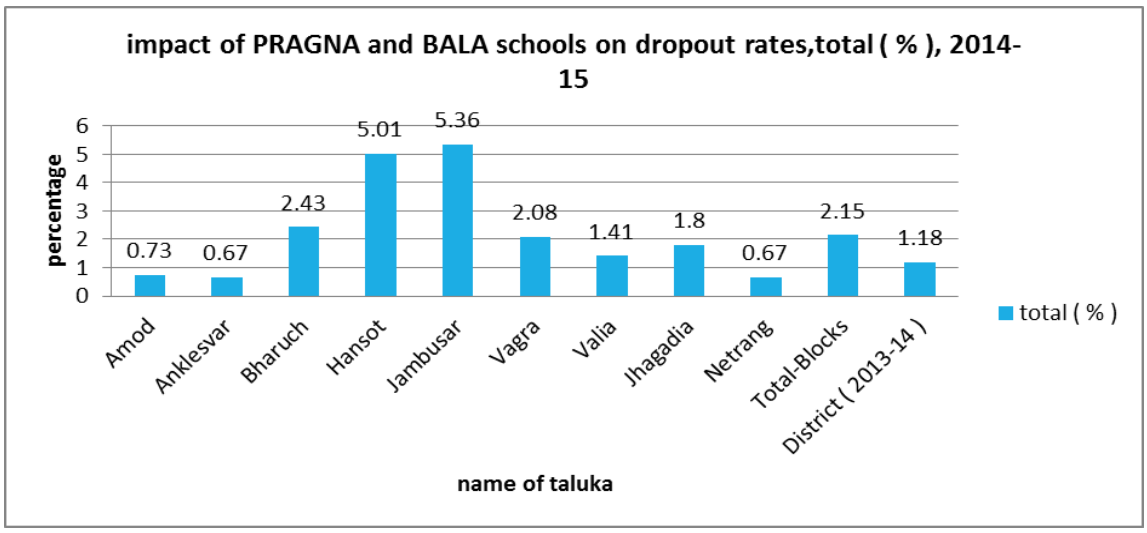
- Because of BALA school children becomes self reliant in sports, in reading, in maths and in learning geography.

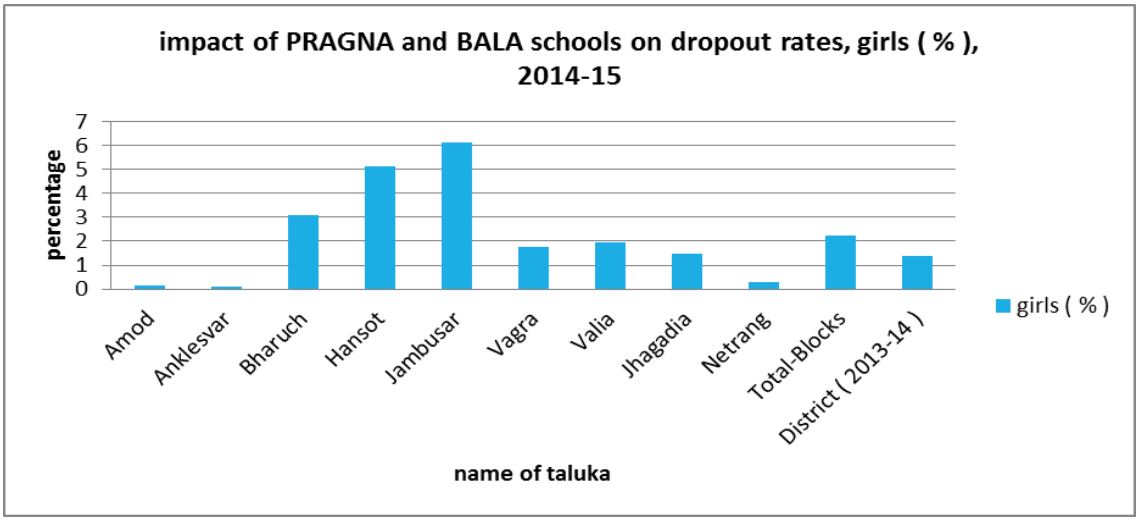
  The dropout rates in the identified blocks and for the district as a whole from std 1 to 5 are shown below (2013-14).

Table:- 2.16 Impact of PRAGNA and BALA Schools on Dropout Rates in Primary Schools, 2014-15

Sr.No	Name of Taluka	Dropout rate		
		Boys (%)	Girls (%)	Total (%)
1	Amod	1.28	0.15	0.73
2	Anklesvar	1.18	0.08	0.67
3	Bharuch	1.82	3.11	2.43
4	Hansot	4.9	5.13	5.01
5	Jambusar	4.63	6.16	5.36
6	Vagra	2.37	1.77	2.08
7	Valia	0.93	1.93	1.41
8	Jhagadia	2.09	1.49	1.8
9	Netrang	1.04	0.3	0.67
10	Total-Blocks	2.06	2.25	2.15
District (2013-14)		**0.99**	**1.39**	**1.18**

Source: District primary education officer, Bharuch.





The overall dropout rate in Block such as Amod, Ankleshvar, and Netrang is lower than the district level dropout rate i.e 1.18. However, in Bharuch, Hansot, Jambusar and Vagra the dropout rates in these blocks are higher than in the district.

The dropout rate for girls (1 to 5 std) in blocks of Amod, Ankleshvar and Netrang are lower than the district average. Why these new projects have not made desired impact in several talukas needs to be investigated for corrective steps.

The Mid-day meal program is implemented in government primary schools. It covers 140744 primary school students per day in the district. However, actual number of beneficiaries of the mid-day meal programme is somewhat lower than the target number. This is obvious because some students may be absent on any particular day. Hence, the data on the number of beneficiary students suggests that 138861 students are benefiting on an average under the program.

The vast majority of the beneficiary students are from the weaker sections of the society- 52% from schedule tribes; 21% from other backward caste; 20% from minorities and only 4.76% were from general category.

The program therefore serves an important social cause, besides its role in increasing the retention rate of students in primary education. However, the areas of concern which were noticed during field visits are: such as lack of uniformity in several aspects, Unhygienic environment, lack of cleanliness of the premises, utensils. There is lack of uniformity in the standard of cooking of different food items. It often depended on the perception of the person in charge of cooking and of the teacher in charge of the program.

Secondary and Higher Secondary Education

Transition to secondary and higher secondary education lays the foundation for sustainable employment and good quality of life.

Table:-2.16

Secondary (Std 8 – 10) and Higher Secondary (Std 8 – 12) Schools in Bharuch District

Year	Secondary School (8-10)	Higher Secondary Schools (8-12)	Total
2009-10	149	124	273
2010-11	166	118	284
2011-12	154	127	281
2013-14	129	160	289

Source: Commissioner of Schools and Mid day Meal.and District Education Officer,Bharuch.

The total number of secondary and higher secondary schools increased from 273 in 2009-10 to 289 in 2013-14.

The secondary and higher secondary schools do not have std 8 from 2010-11. In 2013-14 out of 289 total schools, 160 were higher secondary schools. This new high schools have been started in Hansot, Vagra and Bharuch talukas.

Teachers:

In these schools, there were 1720 teachers in the secondary (std 8 to 10) and 587 teachers in the higher secondary schools (std 8 to 12). In all, thus there were 2307 teachers. Among these, 878 or 38% were female.

Student – Teacher Ratio:

There were 37 students per teacher. The ratio was 38 students in secondary schools and 36 students in higher secondary schools. The ratio is at the desired level.

Access to secondary and higher secondary education across talukas:

Number of secondary and higher secondary schools in 2013-14 along with the ratio of Km.Sq per school and population per school across talukas is shown in.

Table-2.17

Secondary (Std 8 to 10) and Higher secondary (std 8 to 12) Schools 2013-14

Sr. No.	Name of the Taluka	Secondary Schools (Std 8-10)	Higher secondary (Std 8-12)	Total	Population to School ratio	KM2 Square Per school
1	Jambusar	20	13	33	5695	35
2	Amod	8	5	13	8447	42
3	Vagra	12	6	18	4862	52
4	Bharuch	42	44	86	4217	07
5	Jhagadia	28	7	35	5250	28
6	Ankleswar	21	37	58	4779	08
7	Hansot	9	6	15	4585	27
8	Valia	14	9	23	5441	21
District Total		**154**	**127**	**281**	**5497**	**27.5**

Source: District Education Officer, district panchayat bharuch.

Note: population per school and km2 are as per 2001 census.

It will be observed that a majority of secondary and higher secondary schools are concentrated in four talukas – Bharuch, Ankleshwar, Jambusar and Jaghadia.

However, even a small taluka like Amod has minimum of 13 secondary / higher secondary schools. Hansot has 20 schools and Vagra also has 20 schools in 2013-14.

In tribal talukas – Valia and Jhagadia, there are 23 and 35 secondary / higher secondary schools respectively. It may be noted that access to even higher secondary schools across talukas seem to be significant.

Ratio of Population to secondary / Higher secondary schools:

The overall ratio of population per school was 5497. The highest ratio was 8447 in Amod taluka and the lowest was 4217 in Bharuch taluka. In the rest of the talukas, one secondary and higher secondary school was serving a population of 5000-6000.

Km.Sq Area per Secondary / Higher Secondary School:

For the district as a whole, one secondary or higher secondary school is available in Km./Sq area of 27.5 Km. i.e. 5 – 6 Km radius for access to secondary school.

In Bharuch and Ankleshwar talukas, a secondary school is accessible in the radius of 2-3 Km. only. The highest Km Sq area is 52 in Vagra and the lowest is 7 in Bharuch taluka.

On the whole, even in rural areas, a secondary or higher secondary school is accessible at the most within a distance of 5 to 7 Km radius in any taluka in the district.

Assuming that every village cannot have a high school, or higher secondary school, the prevailing scenario of access to high school for secondary and higher secondary education can be considered quite favourable. The fact is that the existing infrastructure has the potential to accelerate the transition of more and more students from primary stage to secondary stage across the talukas in the district. Some supporting measures like transport connectivity and timings can be of further help.

Trend in Enrolment of all and, Scheduled Tribes students in Secondary and Higher Secondary Education in Bharuch District:

Enrolment:

The total enrolment in the secondary (std 8 to 10) and higher secondary (std 11 and 12) education was 66234 in 2011-12. Among these students, 45031 were in secondary and 21203 were in higher secondary schools. It may me noted that these figures of enrolment in secondary education does not include the enrolment of std- 8 in 2011-12. Since June, 2010, std 8 is shifted to upper primary stage of education.

Enrolment in Secondary education (Standard 8-10):

Between 2007-08 and 2009-10, the enrolment of all students increased from 63334 to 65027 or by 2.67%. The figures of the total enrolment in the year 2010-11 and 2011-12 are lower because it does not include the enrolment in std 8 from June, 2010.

During the same period, the enrolment of scheduled tribes students increased from 14329 to 18029 or by 25.76%, Which is much faster than the rate of increase for all students.

It is found that the percentage of ST students among all students in secondary schools – std 9 and 10 was 30.83% in 2012-13 and 27.62% in 2013-14. Thus although the percentage of ST students in the total, fluctuate in different years, on the whole, 28% ST students are almost in line with the population proportion.

The enrolment of all students in higher secondary education (std 11-12) was 18853 in 2007-08 and increased to 21203 or by 12.46% in 2011-12. During the same period, the enrolment of scheduled tribes students in higher secondary education increased from 2185 to 5291 or by 142%. Even by 2010-11, the increase in the enrolment of ST students has far exceeded than that of all students. The percentage of ST students in the total in std 11 and 12 was 24.95% in 2012-13 and 21.52% in 2013-14. This also shows that the majority of the ST students in std 9-10 transit to higher secondary standards.

Percentage ST Girl Students among all girl students in Secondary Schools:

The percentage ST girl students among all girl students in secondary schools in 2012-13 was 30.13%. In 2013-14, the percentage decreased to 27.88%.

In higher secondary schools, the ST girl students accounted for 25.49% in 2012-13 but decreased to 20.97% in 2013-14. Thus this decreased proportion of ST students among all students and ST girl students among all girl students in secondary and higher secondary education between 2012-13 and 2013-14 is a matter of concern.

The number of total girl students in secondary education (std 8-10) was 26512 in 2007-08 and it was 27312 in 2009-10 or it increased by 3.02%. The number has decline in 2010-11 and in 2011-12 due to the shifting of std 8 at the upper primary stage of education. The number of Scheduled tribe girl students in secondary education in 2007-08 was 5729 but increased to 7175 in 2009-10 which shows the increase of 25.24%. The percentage ST girl students among all girl students in secondary schools in 2012-13 was 30.13%. In 2013-14, the percentage decreased to 27.88%.

The total number of girl students in higher secondary education in 2007-08, was 8465 but increased to 10334 in 2011-12 or increased by 22%. The number of Scheduled Tribes girls in higher secondary education was 973 in 2007-08. However, it has registered spectacular increase to 2636 or by 171%. Moreover the ST girls students accounted for 25.50% of all girl students in std 11 and 12 in 2012-13 and 20.97% in 2013-14.

The enrolment in arts accounts for about 57.50%, 15.40% in commerce and 25.14% in science stream higher secondary education. What is important is that the number of students in science stream is much higher than in commerce. This trend towards higher enrolment in science stream is a positive feature as it widens the foundation for further professional education in the district.

However, there are also some areas of concern. The access to arts stream and even to commerce is more evenly spread across talukas than the access to science stream.

Out of the total enrolment of 5565 students in science stream, in 2009-10, 5213 or 94% are concentrated in Bharuch, Ankleshvar and Jambusar talukas. Out of 70 higher secondary schools offering science stream 34 are in Bharuch and 22 in Ankleshvar.

Due to rapid increase in secondary and higher secondary education among the scheduled tribes students, it is suggested to consider the following as support measures.

The students from the nearby villages may be using state road transport buses. However, the frequency and timing may require adjustment. A dedicated mini bus service in the catchment area can be also very helpful.

Upgradation of Ashram Shalas can also help in creating the residential accommodation for the students.

Social Profile of Students in the Higher Secondary Stage:

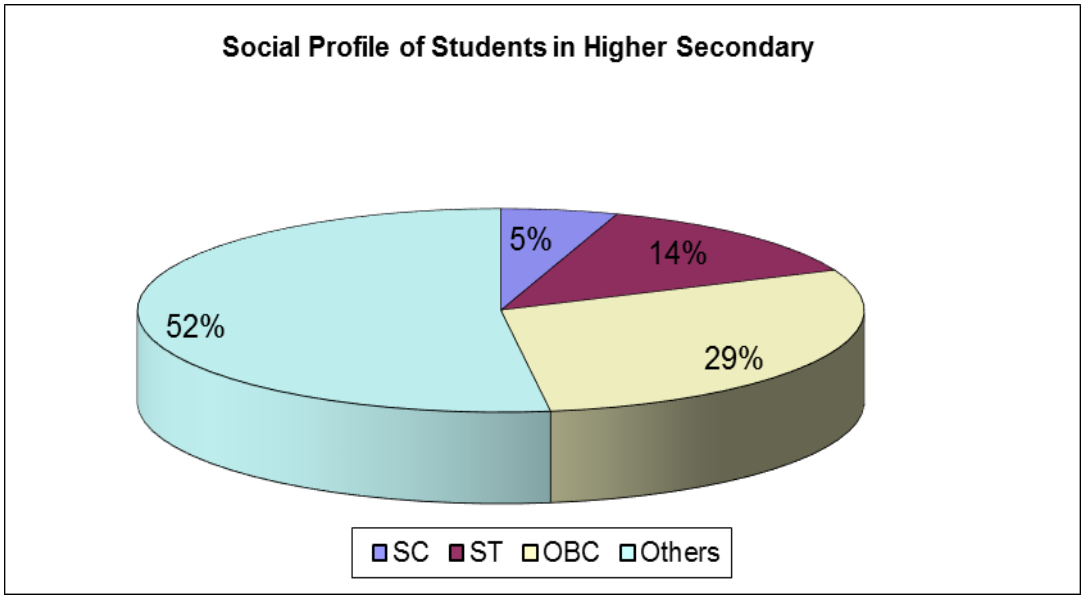
In the higher secondary stage of education in the district, the schedule castes students accounted for 5.19%, the schedule tribes students accounted for 13.37%, the minority/other backward castes students were 29.26% while the students from general social category accounted for 52.18% in 2010-11. If we consider only the science stream, it is found that, a vast majority- 68.18% of the students belonged to general social category in the district. The schedule tribes students in the science stream were only 5.90%.

Table:-2.18

Social Profile of Students in Higher Secondary Education (Std 11 & 12), 2010-11, Bharuch District

Stream of Education	Number of Students				
	Total	SC	ST	OBC	Others
Arts	8196	372	1315	2477	4032
%	100	4.54	16.04	30.22	49.19
Commerce	4226	324	714	1525	1663
%	100	7.67	16.90	36.09	39.35
Science	4918	204	290	1071	3353
%	100	4.15	5.90	21.78	68.18
All	17340	900	2319	5073	9048
%	100	5.19	13.37	29.26	52.18

source: District Education Officer,Bharuch District Panchayat,



Quality of secondary and higher secondary education:

We have taken the indicator of number of students who appeared and passed the secondary school certificate board examination.

Table – 2.19

Results of HSC and SSC Examination of June 2009, 2010, 2011 & 2012 – District Bharuch

Sr. No	Standard	No of students registered	No of students appeared	No of students passed	%
Year 2009					
1	SSC	15819	15759	9801	62.19
2	HSC – General Stream	7706	7626	5651	74.01
3	HSC – Science Stream	2479	2464	1800	73.05
Year 2010					
1	SSC	17012	16972	11683	68.84
2	HSC – General Stream	9149	8651	7139	82.52
3	HSC – Science Stream	2612	2594	1958	75.48
Year 2011					
1	SSC	25315	25297	18417	72.80
2	HSC – General Stream	8015	7947	5845	73.55
3	HSC – Science Stream	2510	2437	1774	72.79
Year 2012					
1	SSC	23750	23655	15991	67.60
2	HSC – General Stream	9280	9215	5505	61.28
3	HSC – Science Stream	2992	2931	1774	60.35

Source: District Education officer, Bharuch

It will be observed that the SSC result in the district was 62.19% in June 2009 and it increased to 68.84%, in June 2010. It further increased to 72.80% in 2011 but has again come down to 67.60% in 2012.

The results in higher secondary examinations are even more encouraging. The standard 12 general stream result in June 2009 was 74% and science stream result was 73%.

In June 2010, the result of the general stream increased to 82.52%, however, in 2011 and 12, particularly in 2012 the HSC general stream result was only 61%, while the science stream result was also higher to 75.48%. However, it was reduced to 60% in 2012.

While the results can be taken as one indicator, the criteria to grade the schools at primary stage, secondary stage and higher secondary stage should be developed by taking in to account performance of students and other parameter.

The students – teacher ratio being reasonable in the range of 30-40 students per teacher. There is a need for continuous improvement in learning levels of students at all stages.

Science stream in higher secondary: Vanbandhu Kalyan Yojna (10 Point Program of the C.M. of Gujarat.)

Under the program, it was proposed to start science stream in higher secondary education in Valia taluka. Accordingly, a science stream 11 standard is started in Netrang in taluka Valia.

Education: Way Forward

- The access to primary schools as well as upper primary schools is either within the village or within 1Km / 3 Km.
- The amenities in schools such as separate toilets for boys and girls, drinking water have also been provided almost in all schools under Sarva Shiksha Abhiyan.
- Moreover, the retention in primary schools have also increased significantly during last 6 to 7 years or drop out rates between std 1-7 have come down at low level 1.19% for boys, 2.52% for girls and 1.88% overall in 2013-14. Logically now the focus is on the quality aspect of the education.
- The Gunotsav program has the objective to improve the quality of education in the schools – grading of schools and evaluation of teachers are done under this program with the participation of the highest level of political leadership and bureacracy.
- Also in our opinion, the subject/class teacher is in a position to prepare and overall grading sheet for students which can reflect the learning level.
- It is suggested that the schools which have been given grade “A” have the potential to emerge as centers of excellence and can compete with the private schools.
- The government may provide some capital grant to upgrade and if necessary to expand their educational infrastructure.
- These best practices schools can also be involved for transfer of their practices to others through periodic visits, meetings etc. They can play the role of hand holding for other schools.

- In Bharuch district, there are several Ashram Shalas – Uttar Buniyadi schools which, apart from being primary and secondary & higher secondary schools, also provide lodging and boarding to ST students. In the changed scenario of competition with private schools, it is suggested that the government may review and upgrade the infrastructure and other facilities in these institutions so as to bring them on par with other.
- Similarly the teachers who have been awarded Grade "A" in the evaluation process, may be encouraged to setup a district level Forum and they can be assigned the task of preparing model lectures and preparation of videoes – topper's category in selected subjects for standards between 5-8 & std 9-12, in subjects such as English, Maths etc.
- Such a Forum can be also involved in refreshers courses for teachers.
- A video can be also prepared to highlight the excellent situation on total sanitation campaign, personal hyiegine and habits, standard of cleanliness and maintenance of facilities such as toilets, drinking water, meal preparation room etc.
- Students may be given ID Card and uniform to establish their identity and association with particular school.
- Sometimes one comes across cases of absenteeism among teachers, irregular timing of their coming and going, negligence of their duty etc. Given this reality the headmaster of the school may have to be more accountable and all such events should be recorded and placed before the local Education Committee and subsequently may reach to the D.E.O. for necessary action.
- At the village level, the education committee has a critical role to play in most of the matters mentioned above.
- Therefore, some village elders with reputation and good background of education or business or service may be also included in the local education committee.
- If the D.E.O has a dedicated phone or mobile even a student can either send SMS or even a photo showing or describing the status of a particular situation in the School. In other words, an electronic Suggestions Box (only for improvement) can be welcome innovation.
- In order to ensure regular attendance of boys and girls from vulnerable social groups living on village periphery / falias, the class teacher can form a committee of representative students from different falias and encourage them to ensure that all students from their respective falias come to school every day.

CHAPTER – 3

Healthcare, Sanitation and Environment

CHAPTER – 3
HEALTHCARE, SANITATION AND ENVIRONMENT

Good health is the most valuable asset of a person. Equally, healthy population is an asset or wealth of a nation or a society. On the foundation of good health, people are able to acquire other assets, such as education and skill, and power to work and earn livelihood and so on. When we say health, it has many dimensions.

The world Health Organization defines health as “A state of complete physical, mental and social well being and not merely the absence of disease or infirmity”.

The total health thus, has several components – medical or curative care and treatment, preventive health, spirituality and attitude to life and events etc. While medical care is very important, equally important is the prevention of morbidity, diseases and malnutrition.

Hence, healthy environment means so many things. Prevention of air, water and land pollution; provision of safe and potable drinking water; garbage collection and disposal; prevention of throwing rubbish on the roads; prevention of adulteration in food and milk; greening and cleaning towns and villages; massive plantation of trees and their protection for survival; above all sanitation and personal hygiene. All these are at the core of preventive health strategy. If implemented effectively, it has the potential to break the vicious circle of morbidity – malnutrition – morbidity. Economic gains also can be on significant scale.

However, it is not the government alone that can achieve this. Government can formulate a strategy and support and facilitate actions. The key players are Panchayats, municipalities – the local governments and above all, the people – individuals, groups etc.

The problem of negative externality is very much the case in the preventive health care. In other words, individuals and groups by their actions, knowingly or unknowingly, cause negative effects on others and on the society at large. Awareness education and enforcement of discipline among the people is necessary for this purpose.

The government of India and Gujarat have adopted this strategy which is reflected in several programmes such as Total Sanitation Campaign (TSC), Nirmal Gram Awards, Swachchata Abhiyan, protection of common property resources like Gam Talav, Seem Talav, and providing safe and potable drinking water in rural and urban areas. The Government of Gujarat is proactive in implementing these programmes.

Social Parameters in the District are better than the state averages:

In the chapter on Education, it was shown that Bharuch District has above state average performance in literacy, primary education and also has better sex ratio. This is despite the fact that, the district is having relatively large concentration of schedule tribes population i.e 32 %; while Valia and Jhagadia talukas are pre dominantly tribal areas – each with 66 % or more tribal population.

Rural Primary health, Physical Infrastructure and Health Personnel:

In addition to the above mentioned favourable educational profile of the people, the rural primary health physical infrastructure and manpower in the health sector in the district, are fairly well established and are in position for service delivery. For the purpose of rural primary health service, the district is divided into 6 blocks. There are 8 Community Health Centers "CHCs" usually with specialist medical manpower. There are 38 Primary Health Centers "PHCs" and 200 sub centers. For urban areas, there are 4 urban health centres and 10 urban health sub centres. Moreover, the district has 3 Mobile Health Units, 2 Mobile Medical Units and, One Advanced Mobile Van.

Table:-3.1

Major Catagories of Medical and Paramedical Manpower in Public Health, 2013-14

Sr.No	Post	Sanctioned Post	Filled Post	Vacant Post
1	Chief District health officer, Class-1	1	1	0
2	Add district health officer, class-1	1	0	1
3	District RCH officer, class-1	1	1	0
4	medical officer, class-2	38	33	5
5	AYUSH MO (contractual)	25	25	0
6	Senior pharmacist, class-3	1	1	0
7	School health supervisor	1	0	1
8	MPHW (M) - regular	200	121	79
9	MPHW (M) - contractual	0	26	0
10	FHW - regular	200	180	20
11	FHW - contractual	0	25	0
12	FHS - regular	38	19	19
13	Staff Nurse - contractual	22	21	1
14	Junior pharmacist	38	9	29
15	Junior pharmacist - contractual	0	19	0
16	Lab technician	38	13	25
17	Lab technician - contractual	0	8	0
18	Sanitary inspector	20	3	17
19	MPHS	3	3	0
20	ASHA	1100	904	196

Source: CDHO Bharuch

Medical and Para-Medical Health Personnel:

As far as medical and para-medical personnel are concerned, a large number of them have been recruited in the last few years. Out of 38 posts of medical officers (MBBS Class –II), 33 posts have been filled. There are still five vacancies in this category.

25 posts of Medical Officer-AYUSH have been sanctioned on contractual basis and all 25 are already filled.

There are 200 posts of multipurpose health worker-Regular (male); 121 posts have been filled. 26 have been also recruited on contract basis, this leaves the vacancies of 57 posts.

Similarly, out of 200 posts of Female Health Worker-Regular, 180 have been filled, but 10 % posts are vacant. On the other hand, 25 have been recruited on contract basis.

The District has 38 posts of Female Health Supervisor. However, only 19 posts are filled so far. There are 22 posts of staff nurse. 21 have been recruited on contract basis.

Laboratory Technician is an important post for conducting some simple tests at primary health centres. There are 16 vacancies in this category, although 8 Lab Technicians have been recruited on contract basis. There are also vacancies in the post of junior pharmacist.

Most of the posts of Sanitary Inspector are vacant, which seem to be a gap in preventive health strategy. Also large number of vacancies for the post of Driver may put constraint on the efficiency of working of Mobile medical units.

The Acredited Social Health Activist (ASHA) workers work at the village level and are a point of immediate contact on issues of maternal and child health. 196 or 18% posts are vacant.

However, inspite of these vacancies, PHCs even in remote areas like; Keshwan village in Vagra taluka are found with qualified manpower and with daily OPD of about 30 to 40 patients.

(PHC, Keshwan, Ta- Vagra, Dist - Bharuch)

(Medical Officer at his Desk, Keshwan PHC, Ta - Vagra)

(OPD Case window open and waiting facility, Keshwan PHC, Ta - Vagra)

Private Health Care Providers:

There are 42 private hospitals/clinics in the district. 41 of these are concentrated in Bharuch, Ankleshwar and Jambusar.

There are 14 private charitable trust hospitals. 8 of these are in Bharuch and Ankleshwar and only 6 are in other talukas. It can be said that, the private as well as NGO health care institutions are concentrated in urban centres. Therefore rural primary health care facility remains crucial for immediate access.

In spite of these gaps in the health care infrastructure, the district occupies a favourable position – favourable as compared to state averages in several health indicators.

Table:-3.2 Live Birth, Infant Deaths and Maternal Deaths in Bharuch District

(2009-10 to 2013-14)

Year	Live Births	Maternal Deaths	Infant Deaths
2009-10	30247	18	468
2010-11	32504	27	397
2011-12	32547	16	407
2012-13	30593	19	414
2013-14	30107	22	382

Source: Office of the CDHO,Bharuch.

By and large, the number of live births, infant and maternal deaths do not exhibit any trend. Rather, these numbers fluctuate in different years. 468 infant deaths in 2009-10 was however the highest while, 382 infant deaths in 2013-14 was the lowest. A rough estimate of infant mortality rate would be 15.47 in 2009-10 and 12.69 in 2013-14.

The District Level Rapid Health Survey-1 (DLRHS)-Report 2011 gives figure of 44 for IMR and the figure of 142 for MMR. These rates at the state level are 41(IMR) which is lower than the district rate and 148 (MMR)which is higher than the MMR in the district.

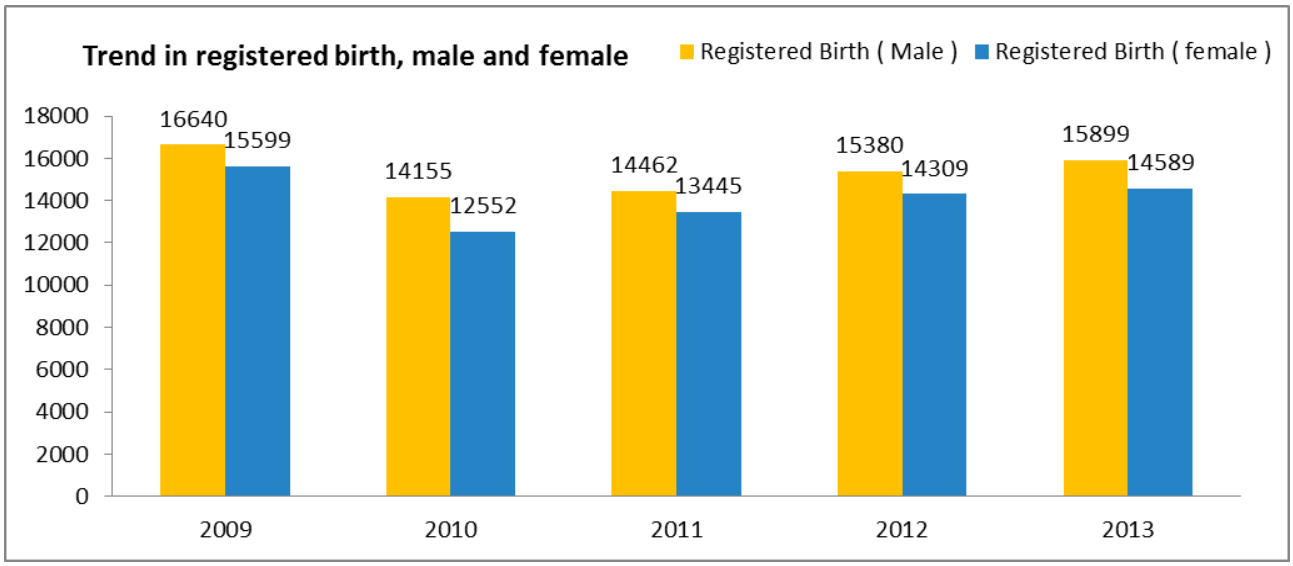
Registration of Births and Deaths:

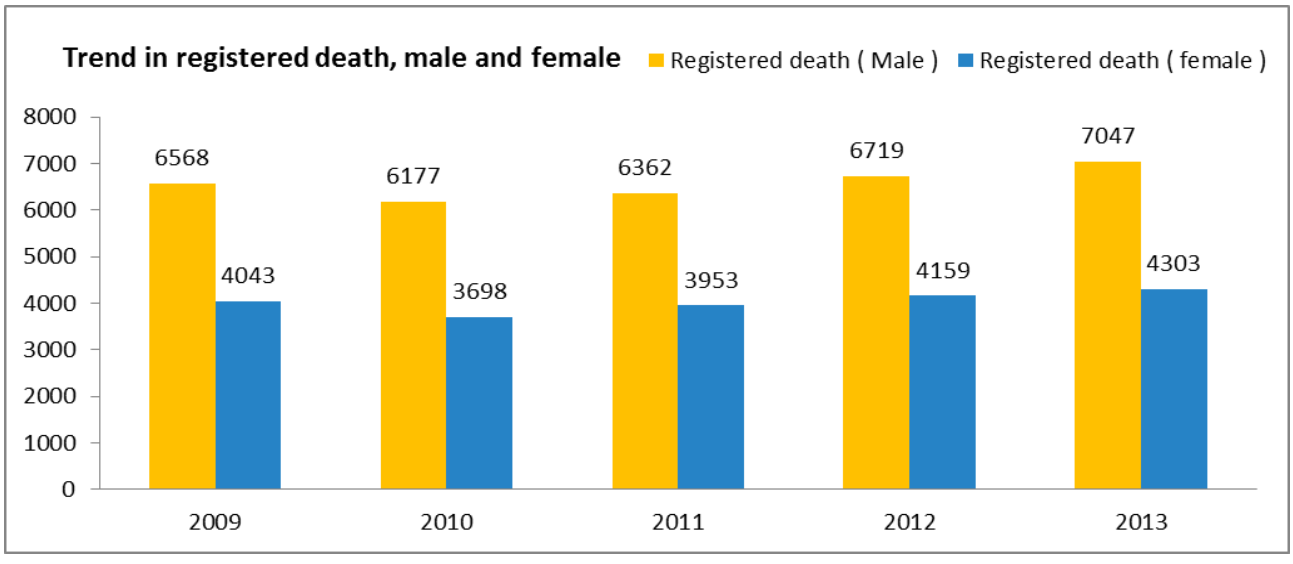
From the view point of reducing IMR & MMR, the registration of births and deaths is a crucial. It is also a document for the family. Inheritance of property or wealth and other rights as a citizen etc. In rural areas in particular, vulnerable sections of the society are not aware of the importance of these documents. Moreover, they do not know where to go and what to do for registration of either birth or death.

Table 3.3 Registered Births and Deaths During 2009 -10 to 2013-14

Year	Registered Births					Registered Deaths			Total Estimated deaths
	Male	Female	Total	Estimated no of deliveries	Total registered deliveries	Male	Female	Total	
2009-10	16640	15599	32239	38719	30247	6568	4043	10611	11231
2010-11	14155	12552	26707	35329	32728	6177	3698	9875	11418
2011-12	14462	13445	27907	35323	32381	6362	3953	10315	0
2012-13	15380	14309	29689	35323	34103	6719	4159	10878	11795
2013-14	15899	14589	30488	35323	33992	7047	4303	11350	11980

Source: CDHO Bharuch District





(Gram Panchayat registers births and death – Display Board, Village. Rodh, Ta. Amod)

Registration of Births:

The total number of registered deliveries includes institutional deliveries in public or private institutions and also deliveries at home attended by trained health personnel. Hence, all such deliveries can be assumed to indicate the total number of registered births.

The average of registered deliveries in 2009 and 2010 were 31488. The average no. of registered births in 2009 and in 2010 were 29473. The difference being 2015 or 6.40%.

Taking the similar averages of 2012 and 2013, it is found that the average no. of registered deliveries was 34048 and average registered births were 30089. The difference being 3959 or 11.63% thus 11.63 % of the live births do not seem to be registered in 2012-13. Assuming that there are no still births. However, over years one also notices improvement in registration of births.

Registration of Deaths:

The no of unregistered deaths (difference between estimated deaths and registered deaths) was 620 in 2009 and 1543 in 2010 or an average of 1002 (8.86%).

In 2012 and 2013, the difference between the estimated deaths and the registered deaths was an average of 774 (6.51%) which is lower.

Some unwanted pregnancies may have been terminated prematurely while some may not be recorded because of the temporary migration of women. There could be also an error in assumption about the likely rate of conception and mode of practices of family planning followed by women in different socio cultural groups.

Considering these gaps in registration of births and deaths, it is suggested that E-gram system at village level is made fully operational. ASHA Worker, trained Dai and Gram Mitra, in addition to the Talati or Panchayat can also help. The notice board on display at Panchayat office of village Rodh, taluka Amod draws the attention of any visitor. Awareness campaign are also useful.

Maternal and Child Health:

Ante Natal Care (ANC) Programme:

The crucial component of the maternal and child health strategy is Ante Natal Care (ANC) Programme. Under the ANC programme, the health personnel working in the field identify pregnancies at village level mostly within 12 weeks and thereby, they are able to provide necessary advice, nutritional supplement, medicines, TT injections etc. depending upon the requirement.

The pregnant women are registered under the ANC and are also taken for medical check - up either to the public health care facility or to a private hospital recognized under the government scheme.

The ANC registration and advice to pregnant women covers 6 to 9 months till the delivery. This is thus a crucial component of the maternal and child health care strategy. The table - 3.4 below gives the data on ANC targets, registration by taluka during 2011-12, 2012-13 and 2013-14.

Table – 3.4
Registered Pregnant Mothers Information

Sr. No.	Name of Taluka	2011-12			2012-13			2013-14		
		ANC Target	ANC Regi-stration	%	ANC Target	ANC Regi-stration	%	ANC Target	ANC Regi-stration	%
1	Jambusar	5575	5969	107.07	5575	5809	104.20	5308	5443	102.54
2	Amod	2710	2574	94.98	2710	2486	91.73	2580	2211	85.70
3	Vagra	2498	2406	96.32	2498	2431	97.32	2378	2192	92.18
4	Bharuch	9777	7701	78.77	9777	8450	86.43	9309	9357	100.52
5	Jhagadia	5124	4723	92.17	5124	4706	91.84	4879	4543	93.11
6	Ankleshwar	7692	6569	85.40	7692	6782	88.17	7326	6730	91.86
7	Hansot	1652	1413	85.53	1652	1352	81.84	1573	1278	81.25
8	Valia	3828	3454	90.36	3828	3644	95.19	3647	3333	91.39
9	District Total	38856	34814	89.60	38856	35600	91.77	37000	35087	94.83

Source: CDHO Bharuch District

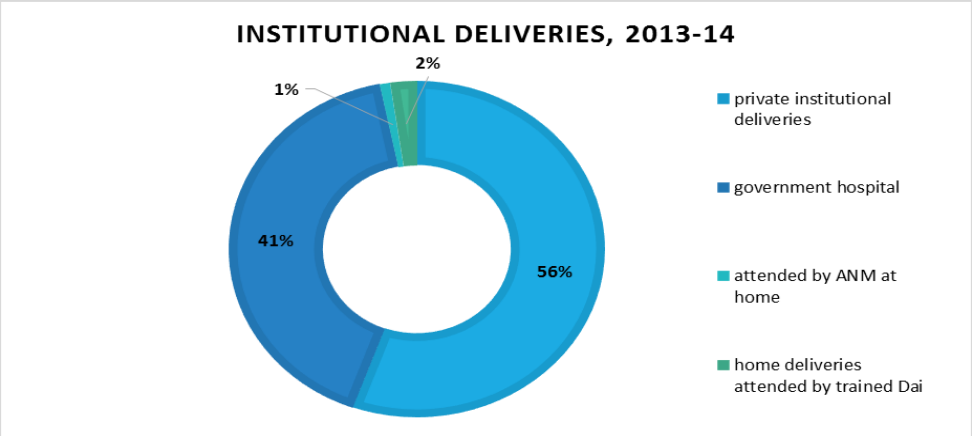
89.60% of the estimated pregnancies were registered under the ANC in 2011-12. The registration increased from 89.60% in 2011-02 to 94.83 % in 2013-14. However, the registration in Hansot and Amod talukas was lower at 81.57% and 85.70% respectively. It can also be seen that the ANC registration in Hansot and Amod talukas has decreased over year. In these talukas, the low ANC registration may be due to the lack of necessary manpower at grass root level for going and contacting pregnant women. Women in the target group may also lack awareness and hence also lack proactive approach in meeting the health worker.

The differences in ANC registration across talukas point to some gaps in the system. For example; in Jambusar, Bharuch, Jhagadia, ANC registration is almost complete between 93 to 102 %. It is also interesting to note that, the tribal talukas have between 91 to 93% coverage under the ANC.

On the whole, it can be concluded that the ANC registration is almost at desired level in most cases. This by itself is an important milestone in the maternal and child health care programmes as it links them to benefits under Janani Suraksha Yojana, Chiranjivi Yojana and Institutional delivery.

Registered deliveries and the place of delivery:

The ANC programme is integrated with the objective of promoting institutional deliveries.The total number of registered deliveries was 33452 in the district in 2013-14.



Out of the total of 33452 registered deliveries in 2013-14, 55.55% were private institutional deliveries, 41.29% were in government hospital/facility, 0.89% deliveries were attended by ANM at home and 2.27% were home deliveries attended by, in most cases by a trained Dai. All these deliveries can be considered as safe and protected deliveries. In other words 96.84% of the registered deliveries in the district were institutional deliveries in 2013-14.

It may be also noted that the government medical facility for delivery has also become very important in the district (41.29%).

The grass root level health personnel like ANM, ASHA, multi-purpose health workers and trained Dai have facilitated the institutional delivery. Hence, motivation of these personnel, training, and coordination in their activities can make the system very effective in the promotion of maternal and child health. Moreover, the primary task of these personnel is the grass root level access and interaction with the target groups.

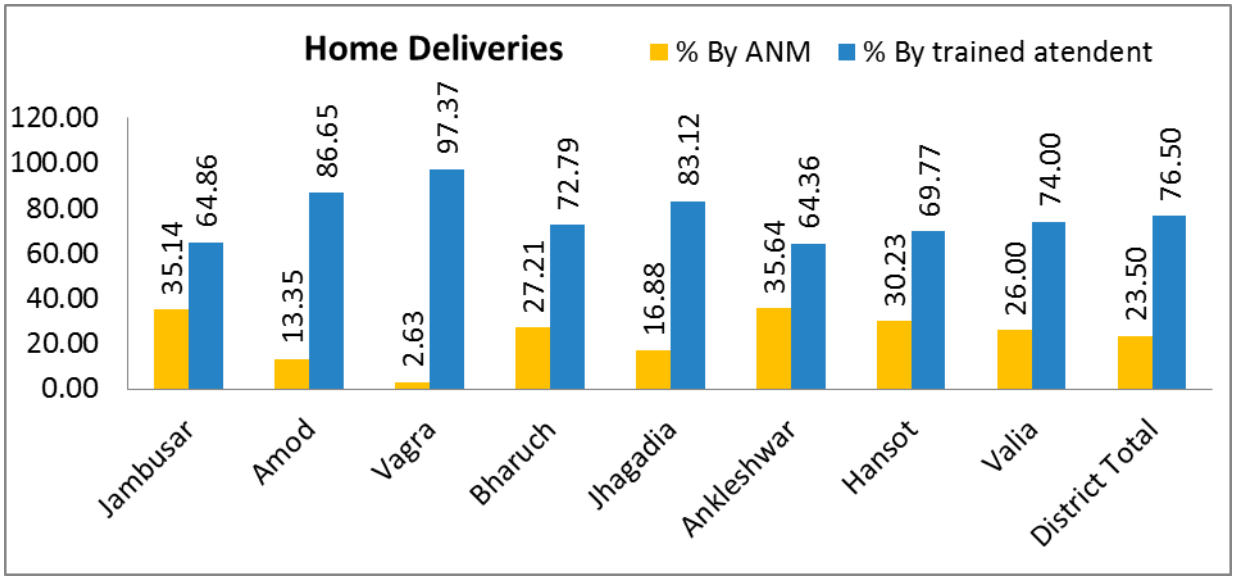
Institutional deliveries across talukas:

Table -3.5
Registration and Place of delivery by Taluka (2013-14)

Sr. No	Name of Taluka	Estimated no of deliveries	Institutional Deliveries			Delivery at Home			Total Registered Deliveries	% Institutional Deliveries	% Home Deliveries
			Govt.	Private	Total	By ANM	By trained attendant	Total Home Delivery			
1	Jambusar	4822	4096	2533	6629	3	29	32	6661	99.52	0.48
2	Amod	2343	1217	753	1970	63	58	121	2091	94.21	5.79
3	Vagra	2160	854	1046	1900	50	165	215	2115	89.83	10.17
4	Bharuch	8453	2632	6395	9027	48	264	312	9339	96.66	3.34
5	Jhagadia	4430	3054	852	3906	12	83	95	4001	97.63	2.37
6	Ankleshwar	6652	509	4820	5329	37	100	137	5466	97.49	2.51
7	Hansot	1429	135	826	961	28	36	64	1025	93.76	6.24
8	Valia	3311	1316	1357	2673	58	23	81	2754	97.06	2.94
9	District Total	33600	13813	18582	32395	299	758	1057	33452	96.84	3.16

Source: Office of the CDHO, Bharuch

It will be observed that the institutional deliveries in tribal talukas of Jhagadia and valia are quite high (97.63% and 97.06% respectively). It is only in vagra taluka the institutional delivery are low at 89.83% while home deliveries are 10.07% in 2013-14. All home deliveries are attended either by ANM or more often by a trained dai.



A majority of deliveries in Bharuch, Ankleshwar and in Hansot are in private medical hospitals. Whereas, in Jambusar the government hospital is as important as the private ones.

Janani Suraksha Yojana and Chiranjivi Yojana:

Nearly 100% coverage under ANC is important for two reasons. First the registered pregnant women become eligible to get the benefit under JSY or cash assistance of about Rs. 500 to meet transport and other incidental cost for going to hospital and medical check-up. Second, the pregnant women receive a variety of support services – advice on nutrition, iron folic tablets, TT injections, nutritional supplements etc.

Moreover, from the day of identification of pregnancy, the woman is under tracking and monitoring system through the technology based E-Mamta. Table- 3.6 below shows the progress under Janani Suraksha and the Chiranjivi Yojana.

Table-3.6
Janani SurakshaYojana and Chiranjivi Yojana

Year	Janani Suraksha Yojana		Chiranjivi Yojana	
	Total Beneficiaries	Expenditure (Rs.)	Total Beneficiaries	Expenditure (Rs.)
2009-10	11758	9428200	1619	1508825
2010-11	10920	5982000	1857	1928879
2011-12	10959	5902350	1884	2138565
2012-13	10136	5162050	1962	2000000
2013-14	7165	4357700	2672	7533330

Source: Health Branch, District Panchayat,Bharuch.

Janani Suraksha Yojana:

Janani Suraksha Yojana is integrated with the ANC programme. The benefits under the Yojana are available to all pregnant women registered under the ANC irrespective of whether deliveries are institutional or not. However, the target group for the benefit is BPL families.

The data on the number of beneficiary under the Janani Suraksha Yojana show that around 10,000 to 12,000 women have benefited from the Yojana each year. In 2012-13, 10136 pregnant women from BPL families benefited from Janani Suraksha Yojana. The number of beneficiaries in 2013-14 was however less i.e 7165. The total expenditure was Rs 64.28 lakh in 2009-2010, Rs. 51.62 lakh in 2012-13 and Rs.43.58 lakhs in 2013-14. A beneficiary on an average received Rs. 546 in 2009-10, Rs. 509 in 2012-13 and Rs. 608 in 2013-14.

Chiranjivi Yojana:

Under the Yojana, the women registered under the ANC programme have the benefit of going to any government hospital or a private hospital recognized under the scheme for institutional delivery. During 2009-10 to 2013-14, around 1600 to 2700 women were covered under the Yojana.

The no of beneficiaries under Chiranjivi Yojana has increased steadily from 1600 to about 2700 between 2009-10 to 2013-14.

The average expenditure incurred per beneficiaries of Chiranjivi Yojana was Rs. 2819.

To be eligible to get benefit under the Chiranjivi Yojana, the delivery must be from a BPL family and the delivery should be in private hospital recognized under the Yojana.

The interaction with the district health officials and others, indicate that more efforts are needed to motivate the private doctors to join the Yojana.

However, it is noteworthy that the majority of the pregnant women go to private hospital for delivery even though they have to pay higher charges. It is unlikely that these women are not aware of the government scheme. It is probably the lack of option that drives them to private hospitals.

Balsakha Yojana:

Table 3.7 - Referral Cases- Bal Sakha Yojana

Sr. No.	Year	No of cases referred
1	2009-10	1377
2	2010-11	1500
3	2011-12	1582
4	2012-13	1858
5	2013-14	2206

Source: CDHO Bharuch

Balsakha Yojana aims to provide follow up and specialist referral services to the newly born children and lactating mothers. It is expected to reduce neo - natal mortality. In 2009-10, 1377 newly born children were referred to child specialist for treatment. In 2013-14, 2206 children were referred to specialist for treatment indicating growing number of infants availing specialist medical treatment in the district. Yojana therefore, fulfils the objective of providing specialist medical care for infants at high risk.

This type of specialist referral services for the newly born child, apart from saving the child from the risk of death, has created awareness among the mothers about the availability and importance of such critical child care facility. The consequent reduction in neonatal mortality would help to reduce the infant mortality.

Full immunization Programme:

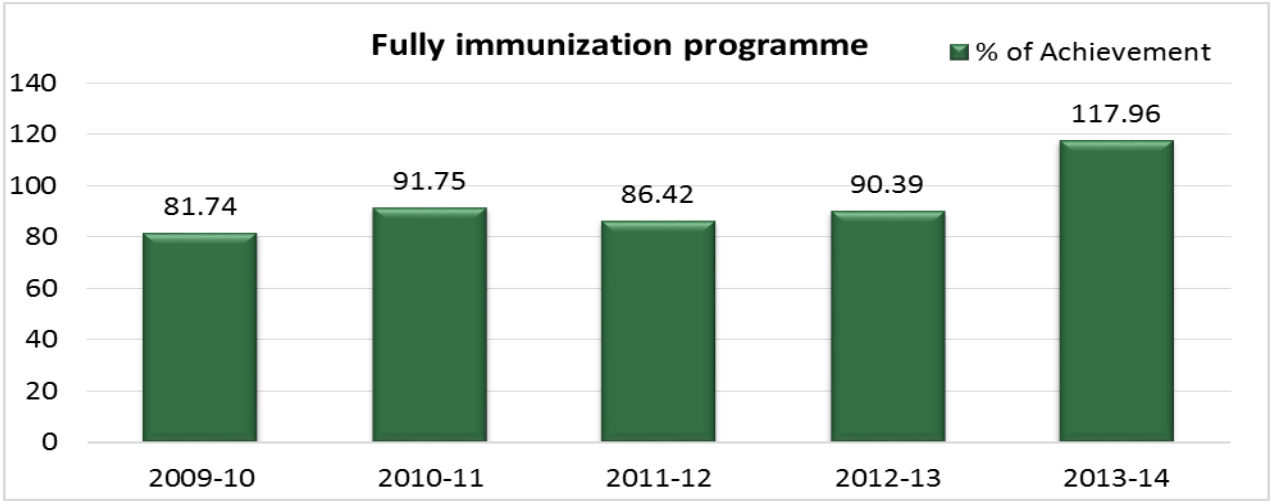
All children below the age of 5 years are the target group for immunization. The programme is implemented by the health personnel as a part of their post natal care / follow up (PNC). It requires tremendous effort to reach out to all such children and their mothers particularly, when many parents are indifferent.

Immunization against childhood deceases ensures not only the survival of the child but also their healthy growth. 81.74 % of the children were fully immunized in 2009- 2010. The percentage increased to 117.96% in 2013-14. In order to sustain full immunization, the mothers need to be educated as well so that they are able to take a pro active approach in reaching out to health personnel.

Table:-3.8 Maternal and Child Health, Full Immunization Programme

Year	Target	% of Achievement
2009-10	36416	81.74
2010-11	33492	91.75
2011-12	33492	86.42
2012-13	33492	90.39
2013-14	33600	117.96

Source: Health Branch, District Panchayat, Bharuch



Integrated Child Development Service (ICDS) and Mamta Divas:

The ICDS has the objective of reducing the malnutrition among the children below the age of 5 / 6 years, pregnant women covered under the ANC programme, lactating mothers covered in the post natal care services and adolescent girls through the network of anganwadis and Mamta Divas. This is an all India programme. In Gujarat, the programme is implemented by the Department of Women and Child through 44000 anganwadis in the state.

Aanganwadi Programme in Bharuch District:

In 2013-14, there were 1374 anganwadi centers spread across all 8 talukas with each village having atleast two anganwadies.

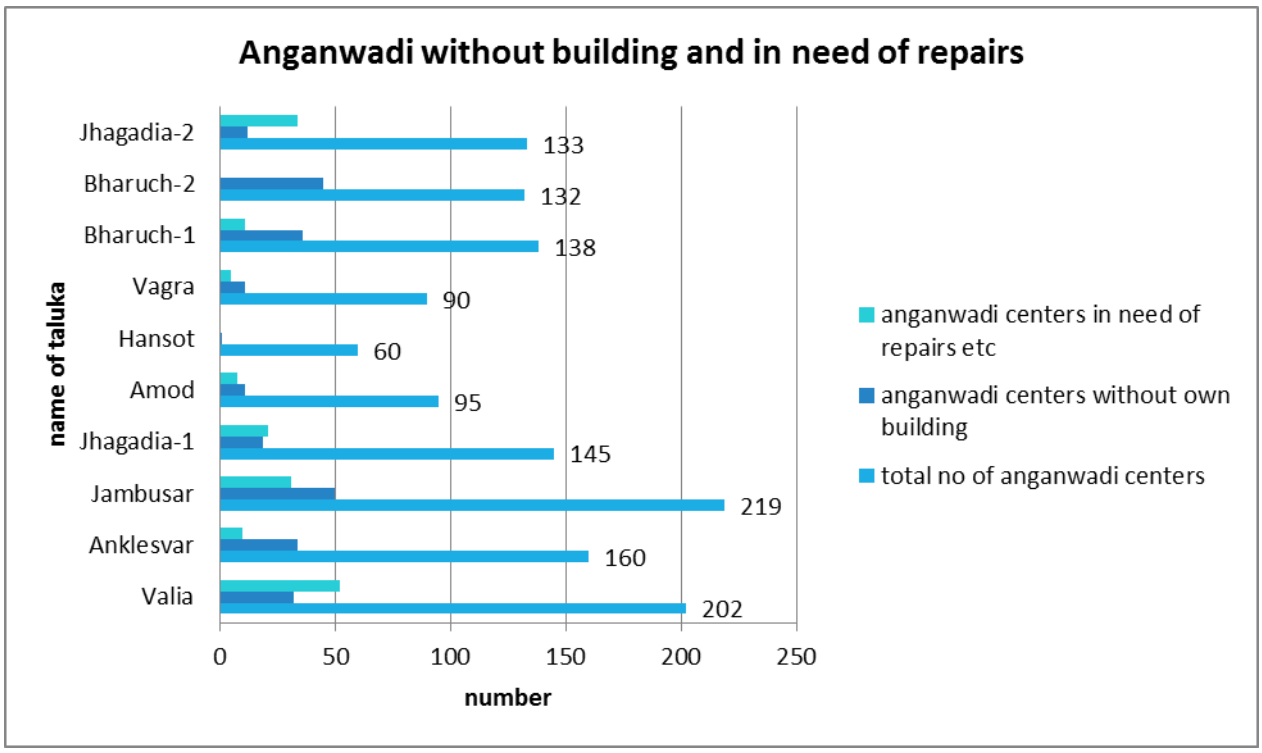
Every anganwadi has an anganwadi worker, a helper, a store, kitchen and utensils. A majority of anganwadis in the district also have their own building.

The target groups for providing ICDS services consist of children in the age group 6 months to 3 years; 3 years to 6 years, pregnant women registered under the ANC as well as the mothers covered under PNC and the adolescent girls.

Total number of Anganwadi centers, Anganwadies not having their own building and no of Anganwadies centers in need of repairs and maintenance, 2014-2015, by taluka.

Name of the taluka	Total no of anganwadi centers	Anganwadi centers without own building	Anganwadi centers in need of repairs etc
Valia	202	32	52
Ankleshvar	160	34	10
Jambusar	219	50	31
Jhagadia-1	145	19	21
Amod	95	11	8
Hansot	60	1	0
Vagra	90	11	5
Bharuch-1	138	36	11
Bharuch-2	132	45	0
Jhagadia-2	133	12	34
Total	**1374**	**251**	**172**

Source: ICDS Bharuch.



Out of 1374, total anganwadi centers 251 are without building. Among these 50 are in Jambusar, 32 in Valia and 36 are in Bharuch.

Similarly, 172 anganwadi centers are in urgent need of repairs. Among these, 52 are in Valia and 34 are in Jhagadia.

They are provided with nutritious food items, ready to cook mixes from which large number of food preparations can be made besides food items served in anganwadis.

Number of Anganwadies and Beneficiaries, 2013-2014:

Table- 3.9 shows the number of anganwadi centers by taluka and number of beneficiaries in each category.

Table :-3.9

Number of Anganwadies and Beneficiaries, March -2014

Sr.No	Name of Taluka	Number of anganwadi Centers	Number of Beneficiaries		
			6 month to 3 years	3 to 6 years	AN, PA & Adolescent Girls
1	Valia	202	5909	4749	1700
2	Ankleshwar	160	6754	4299	5915
3	Jambusar	219	8265	6834	5372
4	Jhagadia	278	7553	6182	7284
5	Amod	95	3715	2949	2603
6	Hansot	60	2337	1698	1379
7	Vagara	90	3477	3276	2137
8	Bharuch	270	10994	9261	6939
Total		**1374**	**49004**	**39248**	**33329**

Source: Program Officer, ICDS, Bharuch

It will be seen that a total of 1.22 lakh children, women and adolescent girls has received the benefit under the programme.

These benefits are available to the target group for 20-22 days in a month and 8 to 10 months in a year. These anganwadi, if located in the primary school premises can lead to a very beneficial synergy between the pre-school children and the primary school children. It may also reduce some over head cost.

Even if, the actual food intake of the persons in the target groups is 50% lower than the normal requirements, the supplemental nutrition though ICDS can bridge this gap and help eliminate malnutrition.

However, there are some likely genuine problems which may come in the way of making SNP effective. The timing of providing such food supplements in anganwadis may conflict with the timing when most of the poor women go out for work in the morning. Synchronization of timing in such rural environment probably is important if the poor women and their children are to take the advantage of the system.

Some of the shortcomings observed in the field visits were such as, repairs and maintenance of premises was lacking and, normally 60-65% of the registered children remain present. Some children of the poor households living in the periphery of the village, were not coming regularly etc. The room/place where mid-day meal was prepared was found in unhygienic condition. These are observations only on some of the anganwadis visited by the team and cannot be considered as applicable to all.

The photographs given below highlight a number of positive features of the working of the ICDS programme. We found that the anganwadi workers whom we met in village Paladi, Vichhiyad (Ta. Vagra) and in village Vavali in Jambusar taluka were dynamic and dedicated; the premises were neat, clean and spacious. Children were found playing in the playground and served with nutritious food.

(Anganwadi worker showing Balbhog Packet- Paladi, Ta- Vagara)

(Anganwadi center in Village Vichhiyad – Ta Vagra)

(Playground of anganwadi at Vavali- Ta Jambusar)

(Playground of anganwadi at Vavali- Ta Jambusar)

An effective ICDS programme is expected to have a positive impact on the nutritional status of the children and women. Indicators about the problem of malnutrition among women and children are available in the data from anganwadies and Mamta Divas.

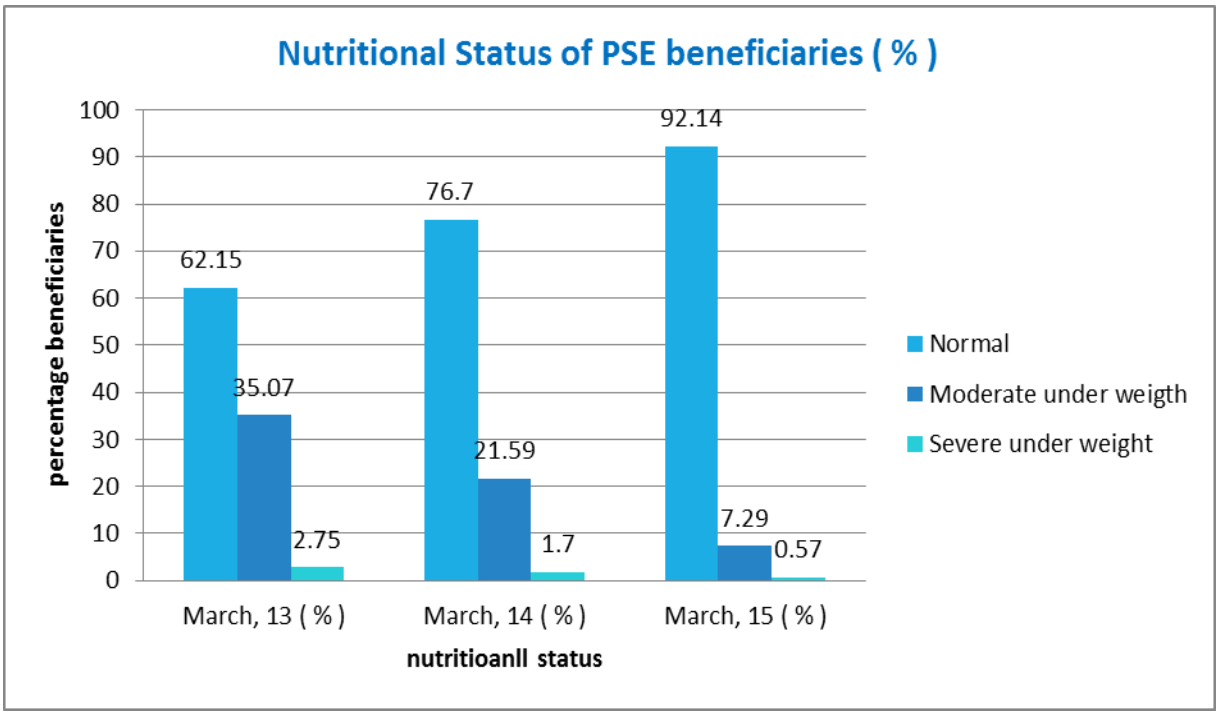
In the year 2013, 102412 and in the year 2014, 104684 while in 2015, 105048 children were in anganwadi centers and were weighed. The nutritional status and the change during 2013 – 2015 are depicted in the table below:

Table:-3.10

Nutritional Status of PSE Beneficiaries (0 month - 6 years), boys and girls (%)

Nutritional Status	March, 13 (%)	March, 14 (%)	March, 15 (%)
Normal	62.15	76.7	92.14
Moderate under weigth	35.07	21.59	7.29
Severe under weight	2.75	1.7	0.57
Total	**100 (102412)**	**100 (104684)**	**100 (105048)**

Source: ICDS, Bharuch.



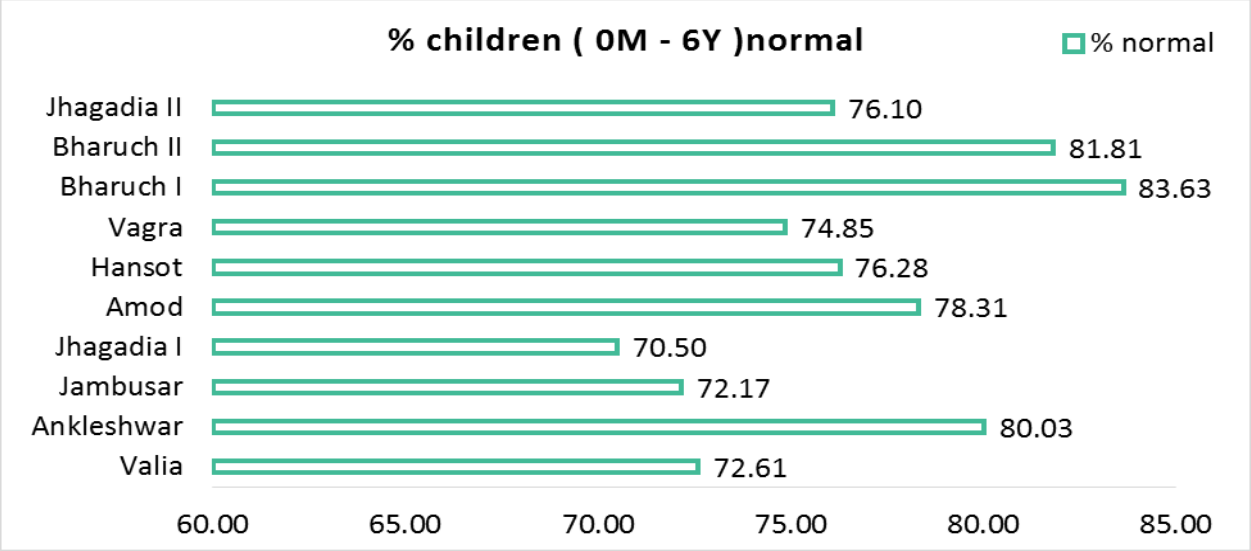
It can be seen that the incidence of moderate as well as severe malnutrition among the children has decreased dramatically by 2015. The incidence of malnutrition (moderate and severe) was 37.82% in March, 2013. This has come down to 23.29% in March, 2014 and is drastically reduced to 7.86% in March, 2015.

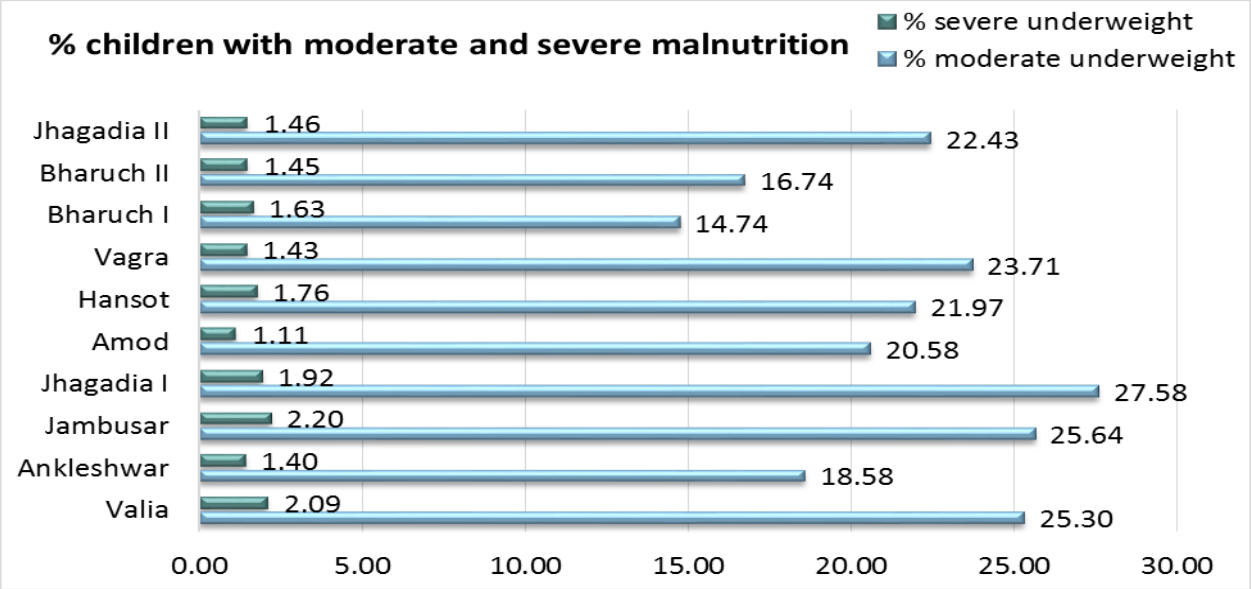
It can be seen in above table that the percentage of children in normal category increased from 62.15% in March, 2013 to 76.70% in March, 2014 (14.55% increase) and further to 92.14% in March, 2015. This has happened because of the reduction in moderate malnutrition as well as severe malnutrition in the district.

Table 3.11 Nutrition Status, MPR March, 2014 by Taluka.

Name of taluka	Normal	moderately underweight	severely underweight	total child weighed	% normal	% moderate underweight	% severe underweight
Valia	8893	3099	256	12248	72.61	25.30	2.09
Ankleshwar	12162	2823	212	15197	80.03	18.58	1.40
Jambusar	13775	4894	419	19088	72.19	25.64	2.20
Jhagadia I	5690	2226	155	8071	70.50	27.58	1.92
Amod	6124	1609	87	7820	78.31	20.58	1.11
Hansot	3080	887	71	4038	76.28	21.97	1.76
Vagra	5486	1738	105	7329	74.85	23.71	1.43
Bharuch I	9591	1690	187	11468	83.63	14.74	1.63
Bharuch II	10305	2108	183	12596	81.81	16.74	1.45
Jhagadia II	5197	1532	100	6829	76.10	22.43	1.46
Source: MPR, ICDS, Gandhinagar							

The highest percentage of "normal" category among the anganwadi children is in Bharuch-I (83.63%), Bharudh-II (81.81%) and Ankleshwar (80.03%). On the other hand, the lowest in the category of "normal" is in Jhagadia-I (70.50%) in Jambusar (72.19%) and in Valia (72.61%). In March, 2015 however, percentage normal weight Children was 91-92% across all blocks / talukas and the overall.





Incidence of Severe Malnutrition:

The highest incidence of severe malnutrition ranging between 2.09% to 1.92% is found in Jambusar, Valia and Jhagadia –I.

The lowest incidence of severe malnutrition ranging from 1.43% to 1.11% is found in vagra, ankleshwar and amod talukas.

By March 2015 however, the severe malnutrition among the children was only 0.57%. Across the blocks the incidence varied between 0-1% only.

Incidence of moderate malnutrition:

The high incidence of moderate malnutrition ranging from 25.30% to 27.58% is found in Jhagadia-I, Jambusar and Valia talukas. Which are also the talukas with high incidence of severe malnutrition.

On the other hand, the lowest incidence of moderate malnutrition ranging from 14.74% to 18.58% is found in Bharuch-I & II and Ankleshwar. Which by and large also have low incidence of severe malnutrition.

The incidence of moderate malnutrition in March, 2015 was reduced drastically to 7.29%. The lowest to the highest incidence across the talukas was 6.6% in Valia to 8.75% in Jhagadia-II.

Apart from food various addictions particularly liquor also seem to be responsible to set the vaitality of youth in these areas.

Mamta Divas:

The Mamta Divas is organized on every Wednesday for 0-30 months age children (pre-anganwadi age group of children), pregnant women and lactating mothers and adolescent girls of every month in each taluka at several centers.

Multiple activities are undertaken – weighing of children, administering immunization doses, ANC check-up of pregnant women, providing nutritional supplements etc. Table:-3.12 below shows the Mamta Divas progressive reports findings on malnutrition. Since it is organized every month, it serves an important purpose of monitoring and follow-up on the health status of women and children. The event is also a great awareness creator on maternal and child health issues and activities.

Measures of Malnutrition:

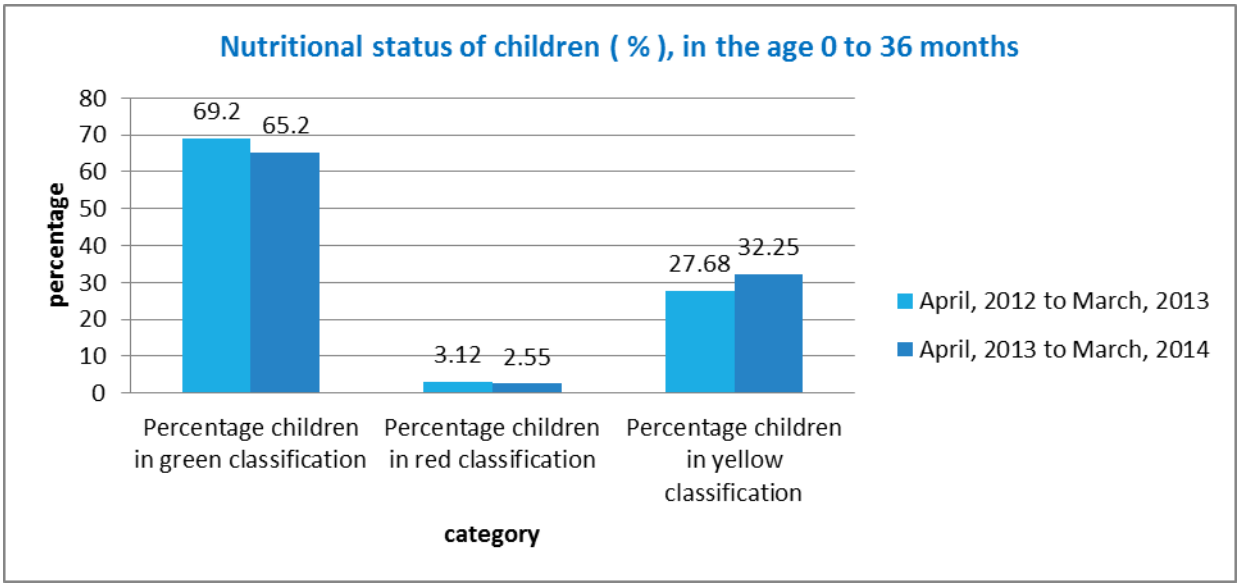
The incidence of malnutrition among the children and women who attended the Mamta Divas is indicated by their weight at a given age and haemoglobin level among women.

Mamta divas reports highlight the nutritional status of pre anganwadi age children i.e. 0-36 months. The nutritional status of pregnant women is measured in terms of their weight for age as well as HB level.

Table:- 3.12 Nutritional Status of Children and Pregnant Women as Revealed in Mamta Day Reports

Item	April 2012 to March 2013 (Number)	April 2013 to March 2014 (Number)
No of Children weighed 0-36 months	812198	718403
No of children in green classification	562022 (69.2%)	468766(65.2%)
No of children in red classification	25328(3.12%)	18339(2.55%)
No of children 0-36 months weighed during supervision	427485	332727
No of children gained weight	332623	273968
No of children lost weight	15529	12552
No of ANC in early pregnancy (< 3 months) weighed	38652	30757
No. of ANC in (< 3 months) with less than 40 Kg	5285	4787
No of ANC tested for Hb test	45409	43224
No of ANC with < 8gm Hb	5745	4746

Source: ICDS Programme, CDHO, Bharuch



It can be observed that the number of children in green classification (normal) in 2012-13 was 69.20 %; it decreased to 65.25 % in 2013-14. However, the children in red classification also decreased from 3.12 % in 2012-13 to 2.55 % in 2013-14. Thus, the percentage of the children in the red classification (severe malnutrition) is not only very low but has decreased further significantly.

It is however interesting to note that the children who are neither in green nor red classification (moderate malnutrition), increased from 27.68 % to 32.20 % between the two years.

Table 3.13 Percentage of children weighed and who gained / lost weight in the supervisory round, 2012-13 to 2013-14.

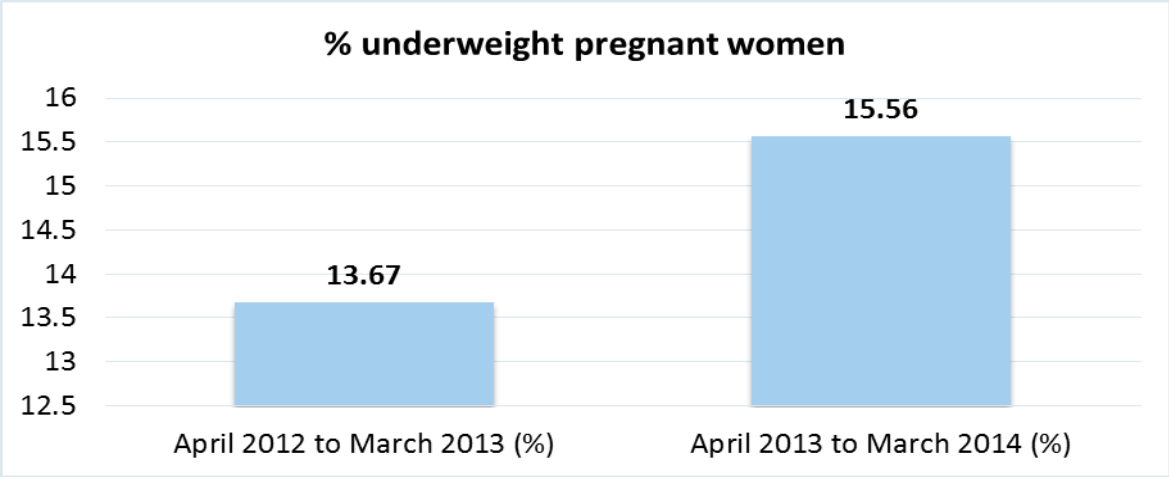
Item	April 2012 to March 2013 (%)	April 2013 to March 2014 (%)
% of children gained weight	77.81	82.34
% of children lost weight	4.67	4.58
% of children with no change in their weight	17.52	13.08
Total	**100 (427485)**	**100 (332727)**

Source: MPR, ICDS, Gandhinagar

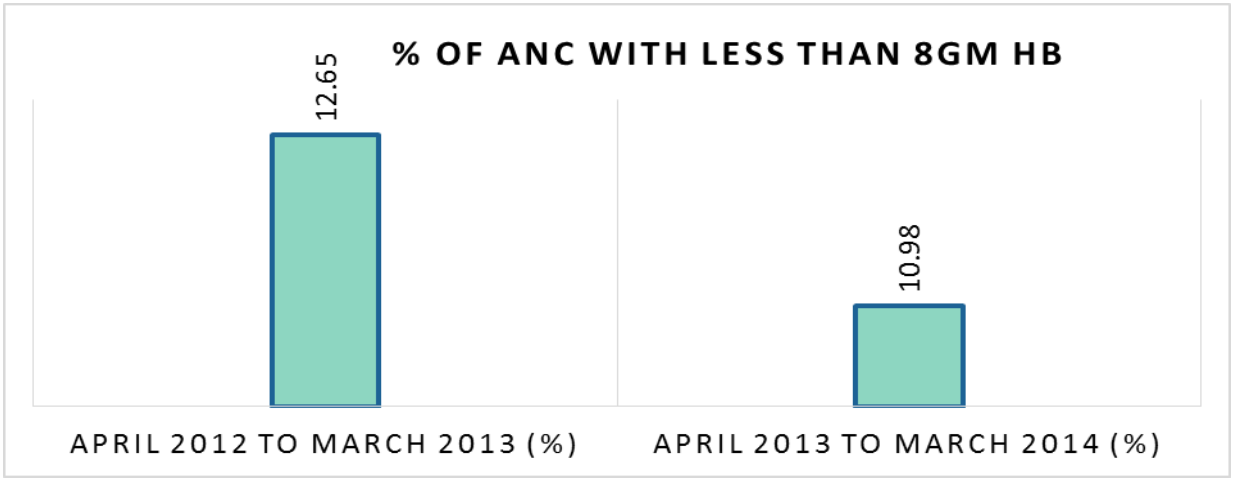
It may however be noted that, in the supervisory round of Mamta Divas activities 427485 in 2012-13 and 332727 in 2013-14 children in the age group 0 – 36 months were weighed.

Among the children who were weighed in the supervisory round in 2012-13, 77.81% gained weight. The percentage of children who gained weight in 2013-14 increased to 82.34%. This is indicative of the greater focus and activities under ICDS to eliminate malnutrition.

Malnutrition among women in early pregnancy:



Among the pregnant women (< 3 months pregnancy) who were weighed, in 2012-13, 13.67 % weighed less than 40 Kg. However, in 2013-14, the percentage increased to 15.56% indicating some increase in the level of malnutrition among the women in early pregnancy.



Among the pregnant women who were tested to find out the Hb level as a measure of nutritional status in 2012-13, 12.65 % were found with Hb level of less than 8 gm. In 2013-14 however, the percentage decreased to 10.98 %.

The indicated pattern of changes shows that the supplementary nutritional interventions through ICDS and Mamta Divas have yielded incrementally positive results.

Mamta Sandarbh Kendras and Referral cases:

On Mamta Divas, Mamta Sandarbh Kendras were also held. Total of 2483 children were referred to mamta sandarbh Kendras. Also 1787 ANC /PNC cases were referred to Sandarbh Kendras. This shows the multi-pronged interventions to improve the health and nutritional status of women and children.

(Girl child of scheduled tribe family preparers herself to go to school), Rodh, Amod taluka.

(A boy from scheduled tribe family is ready to leave for school), Rodh, Amod taluka.

School Health check-up programme:

The Department of Health and Family Welfare, Government of Gujarat carries out the health check-up programme of school children, enrolled as well as children not going to school every year.

The entire health and medical care infrastructure of the state contributes and participates in this massive annual exercise. The school health check-up programme 2012-13 and 2013-14 reveal the following:

Table – 3.14 School Health check up Survey: 2012-13 & 2013-14

Sr. No	Item	Primary		Secondary		ICDS		Total	
		2012-13	2013-14	2012-13	2013-14	2012-13	2013-14	2012-13	2013-14
1	Total no of children medically examined	204673	183551	60024	51165	100129	84140	364826	318854
2	No of children identified with some defects	24506	21782	5708	4510	1066	9998	40280	36290
3	% of children identified with some defects	11.97	11.87	9.51	8.81	10.05	11.88	11.04	11.38
4	No of children with defects medically examined	23190	20236	5204	4042	9815	9032	38209	33310
5	No of children referred to other medical Institutions	1146	989	453	294	118	255	1717	1538
6	% of children referred to other medical Institutions	4.94	4.89	8.70	7.27	1.20	2.82	4.49	4.62

Source: CDHO, Bharuch

Out of the total number of children who were medically examined in 2012-2013, 11.97% of primary school students, 9.51% secondary school students, and 10.05 % children in anganwadies, were found with some defect. It can be seen that the children with some defect were relatively more in primary schools.

However, the school health check-up programme findings for the next year 2013-2014, indicate increase in the percentage of children with some defect under ICDS from 10.05% to 11.88%. On the other hand, the percentage of secondary school students with some defect decreased from 9.51% to 8.81%. As a result, the overall percentage has remained more or less unchanged at around 11%.

It may be also seen that the percentage of referral cases have also remained the same between 4.49% to 4.62%.

Most of the defects were not serious and hence are given treatment on the spot. Among those, who are referred, the common problems were eye, teeth, ear, nose, throat and skin related. It can be said that the effective health education can take care of these problems easily. Personal hygiene, habits etc. are the issues to be addressed by health education programme.

Among these referral cases; 53% were examined by eye specialist, 14% were examined by skin specialist while others had ENT, Dental and padaetric types of defects.

Disease Pattern in Bharuch District:

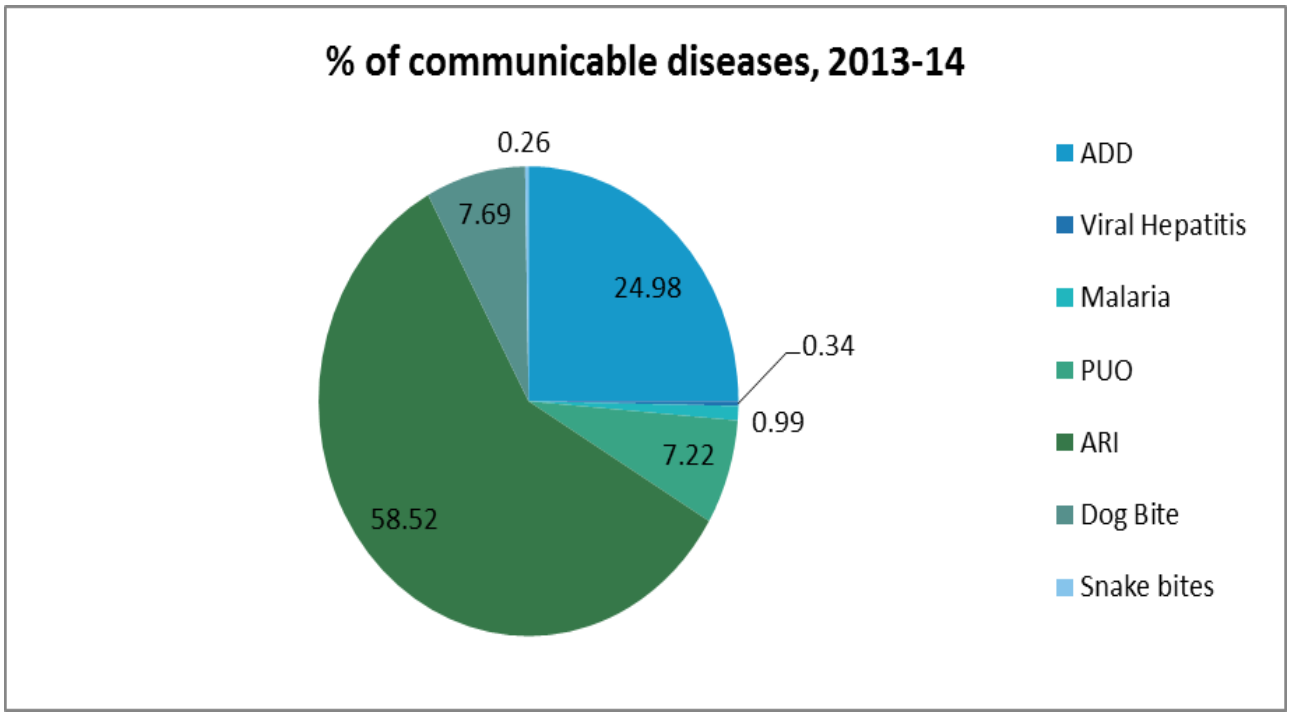
Prevention of morbidity is as important as the cure. The district health administration collects data on prevailing diseases and ailments under Integrated Disease Surveillances Program (IDSP) of the Government of India.

It follows standard classification of diseases and data are collected for each of the public health centers and health blocks each year.

Table 3.15: Communicable Diseases and dog & snakebites Data -2013-14

Communicable Diseases	Number	%
ADD	16722	24.98
Viral Hepatitis	229	0.34
Malaria	660	0.99
PUO	4832	7.22
ARI	39171	58.52
Dog Bite	5148	7.69
Snake bites	177	0.26
Total	**66939**	**100**

Source: Office of the CDHO, Bharuch



It can be seen that Acute Respiratory Infection (ARI), Acute Dyhhorial Diseases (ADD), and Paraxia of Unknown Origin (PUO) and Malaria all taken together, accounted for 92% of the ailments – mostly preventable. It also to be noted that dog and snake bites accounted for 8% of the total.

Acute Dyhhorial Disease (ADD) generally common among children are, water born diseases. Acute respiratory infections (ARI) are most frequent causing malnutrition among all categories of patients.

Water Borne Diseases:

Table 3.16 Incidence of Waterborne Diseases and Malaria in Bharuch District

Year	Waterborne Diseases			Malaria	
	ADD	Viral	Enteric Fever	Total Cases	Total Positive Cases
2010	11220	212	114	138080	759
2011	11865	189	42	137291	1286
2012	12930	350	118	160697	977
2013	15008	243	12	259479	933
2014	16722	229	98	292771	660
Source: CDHO Bharuch, IDSP					

It can be observed from the above table that, the number of cases of water borne diseases (ADD) in the district have increased from 11220 in 2010 to 16722 in 2013-14. It can be also observed that no. of malaria cases have shown very significant increase from 160697 in 2012 to 292771 in 2014. However, the malaria positive cases have decreased an accounted for only 2.25% in 2014.

Communicable Deseases across Talukas:

It is a matter of concern that the number of malaria cases in the district has gone up. The malaria cases are concentrated in Bharuch, Jambusar and Jhagadia talukas in the district.

It is also found that Dog bites and snake bites are reported frequently. The paraxial of unknown origin (PUO) cases are also in large number. These cases have not been diagnosed for their medical origin although, patients are given general treatment for fever. The further diagnosis of PUO cases would provide insight in to the nature of fevers and there by, could help in taking preventive steps for the future.

Acute respiratory Infections (ARI) are maximum and are concentrated in Bharuch, Jambusar, Vagra and Ankleshwar. It may be noted that these areas mostly represent urban industrial concentration of pollution as well as viral infections are the principle causes of ARI.

The ADD cases also seems to be concentrated in Bharuch, Jambusar, Jhagadia and Vagra talukas. The ADD has the direct impact on the nutritional status of children. The malnutrition makes the children susceptible to other diseases and it became the vicious cycle of diseases.

The dog bites and snake bites have been reported mostly from Bharuch taluka.

Causes of deaths:

Morbidity affects the health status of the population. However, causes of death are more specific. The disaggregated information regarding the causes of death in the district broadly indicate the following pattern:

Old age and heart failure are the two frequently reported causes of death in the district. These two causes have remained important. Fever is also reported as an important cause of death. However, it is general in nature and one has to establish the nature and the origin of fever by proper diagnosis.

Different types of accidents including burns have been also reported as the causes of death. Further, deaths due to prematurity, asthma, chronic liver diseases, tuberculosis (TB) and snake bites have also been reported as a causes of deaths in the district.

Around 13–19 % deaths have also occurred due to pregnancy related factors. The above causes of deaths in the district point out the areas of concern – heart attack, TB, Liver failure, snake bite and prematurity.

Medical Emergency service (108) in the district by type and number of emergency cases:

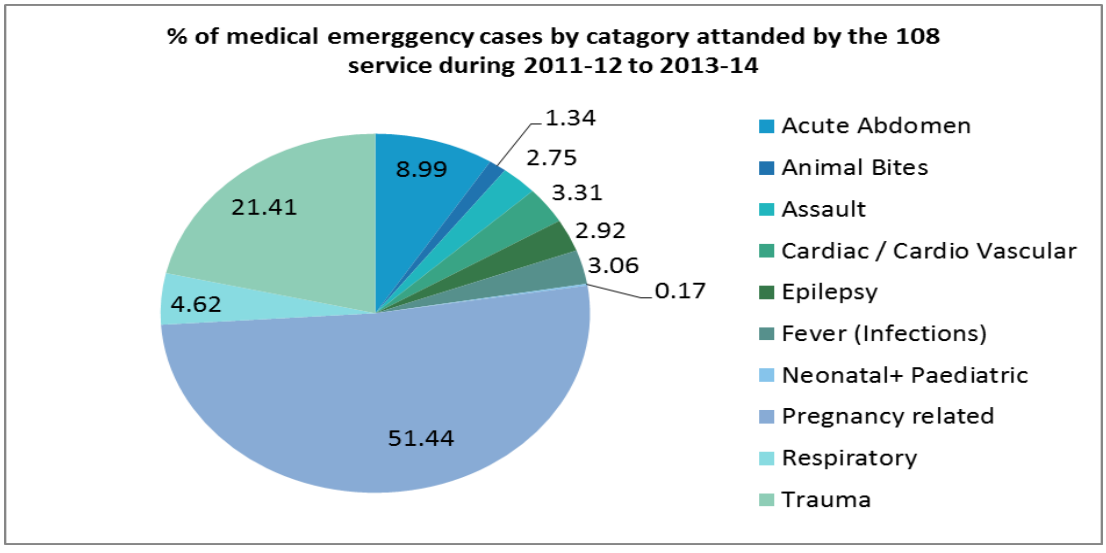
By any criteria 108 ambulance Medical Emergency Service has become a boon to the people to avail emergency medical service. In particular, it has become most valuable to the poorest section of the society in rural areas who do not have the means to access such fast quality support service which often saves the life of the patient.

The table below gives the disaggregated data of the attended cases during 2011-12, 2012-13, 2013-14.

Table 3.17 Medical Emergency services(108) in the District by Type and no of Emergency Cases

Nature of Emergency	2011-12	2012-13	2013-14
Acute Abdomen	1588	1449	1533
Animal Bites	225	208	247
Assault	488	475	435
Cardiac / Cardio Vascular	563	543	577
Epilepsy	494	498	493
Fever (Infections)	613	392	548
Neonatal+ Paediatric	18	25	41
Pregnancy related	8362	8586	9193
Respiratory	811	703	832
Trauma	3613	3690	3575
Total	**16775**	**16569**	**17474**

Source: CDHO Office, Bharuch



It can be seen that there is an overall significant increase in the use of 108 medical emergency service. The number of cases attended in 2011-12 was 16775. It increased to

17474 in 2013-14. This indicates the wide spread awareness about the 108 service among all sections of the society and the effectiveness of the service.

The composition of the cases attended indicate that more than half of the cases were relating to pregnancy related problems, prematurity, neo-natal complications etc.

It can be also seen that cases of trauma (21.41%), acute abdominal pains (8.99%), cardiac cases, epilepsy, fevers, animal bites, dog bites and snake bites are also attended by the 108 service.

It can be seen from the Chart, the extent of increase in pregnancy related cases over time.

Rashtriya Swasthya Bima Yojana (RSBY):

The RSBY covers the below poverty line (BPL) families. According to the latest available BPL family survey in Bharuch district, there were 133863 BPL families.

About 72% of all BPL families belonged to Scheduled tribes as against their share or 32% in the total population in the district.

Table: - 3.18

Implementation of Rashtriya Swasthya Bima Yojana (RSBY) Enrolment of BPL Families and Issuance of Smart Cards by Taluka - Year 2013-14

Taluka	Number of BPL Families	Issued Smart Card	Percentage
Hansot	5654	2425	42.89
Jhagadia	31133	15302	49.15
Valia	26144	12812	49.01
Bharuch	19918	10144	50.93
Ankleshwar	11000	3746	34.05
Vagra	8461	3428	40.52
Amod	12459	6265	50.28
Jambusar	19094	7207	37.74
Total	**133863**	**61329**	**45.81**

Source: office of the CDHO, Bharuch

Number of BPL families and the number of smart cards issued:

Out of 133863 of the BPL families; 61329 or 45.81% have been issued smart cards for cashless treatment. It can be seen that in tribal talukas of Jhagadia and valia 49% of the BPL families have been issued smart card which is probably less than their share in the total number of BPL families. In ankleshwar and jambusar, only 34 to 38% of the BPL families have been issued smart cards.

It is important to note that Bharuch district is experiencing considerable inflow of migrants from within the district and from other districts in the state and even from other states. A large number of such migrants do not seem to have BPL cards from the places from where they have come. This makes them ineligible from RSBY. This is an aspect which needs careful attention as to how to cover such seasonal and temporary migrants who are extremely poor households for the RSBY.

Table -3.19

Implementation of Rashtriya Swasthya Bima Yojana (RSBY) by Taluka from June 2013 to May 2014

Taluka	Number of Cases	Average Expenditure (Rs.)
Amod	710	3242699
Ankleshwar	859	3049954
Bharuch	2661	8508741
Hansot	691	1867443
Jambusar	1053	4953986
Jaghadia	1886	8727448
Vagra	500	1977831
Valia	896	4156805
Total	**9256**	**36484907**

Source: Office of the CDHO, Bharuch

During June 2013 to May 2014, 9256 claimes of cases were settled involving the total expenditure of Rs 3.65 crores or Rs. 3942 per claim. It will be also observed that the majority of the cases for the settlement of the claims are from Bharuch (2661), Jhagadia (1886) and Jambusar (1053).

Drinking Water:

The supply of safe and potable drinking water is one of the critical components of the preventive health care. Moreover, the quality of life and activities like animal husbandry, dairy etc. are also dependent on the availability of water.

Main source of drinking water:

The access to drinking water within one's premises is reported by 61% of the households in bharuch district but by 51.85 % of the rural households. 35 % of the rural households in the district reported access to drinking water as "near by premises" and 13 % reported that the source of drinking water "is Away".

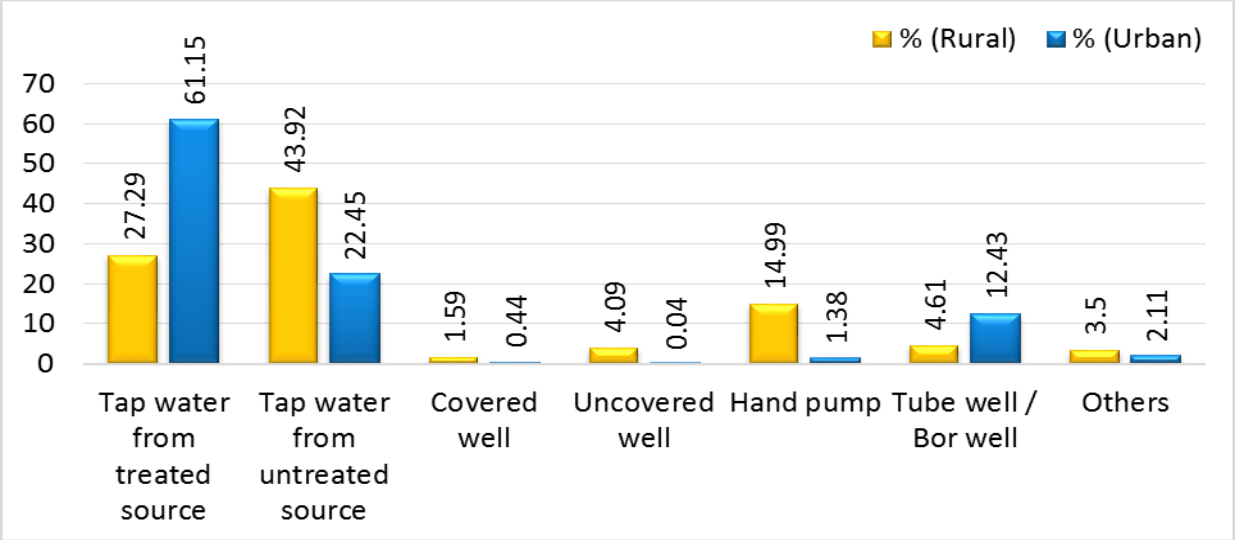
Table:-3.20 Distribution of Households by Source of Drinking Water

Location of Source	District		Rural	
	No of Households	% (District)	No of Households	% (Rural)
Within Premises	204663	61.08	112537	51.85
Near by Premises	95961	28.64	76225	35.12
Away	34474	10.29	28266	13.02
Total	**335098**		**217028**	
Source: Census of India, 2011				

Table:-3.21 Distribution of Households by Main Source of Drinking Water

Source of Drinking Water	District		Rural	
	No of Households	% (District)	No of Households	% (Rural)
Tap water from treated source	131425	39.22	59225	27.29
Tap water from untreated source	121832	36.36	95325	43.92
Covered well	3960	1.18	3446	1.59
Uncovered well	8934	2.67	8884	4.09
Hand pump	34169	10.20	32543	14.99
Tube well / Bor well	24691	7.37	10012	4.61
Others	10087	3.01	7593	3.50
Total	**335098**		**217028**	

Source: Census of India, 2011



75.58% of total households in the district and 69.03% in the state, reported that their main source of drinking water was Tap water from treated source or untreated source. The rest of them are getting drinking water from well, tubewell or handpump.

As regard to the nearness or the distance, only 10.29% of the households in the district but 12.00 % in the state, reported that their main source of drinking water was, “Away”.

Drinking water supply schemes implemented by GWSSB:

The GWSSB has covered 275 villages under the Regional Supply Schemes in the district. 271 out of these are other surface source based and 4 are based on ground water. There are also 372 individual villages based water supply arrangements.

There are also 5486 hand pumps with concentration in Jhagadia, Valia and Netrang talukas. Further there are 438 mini pipelines in these tribal areas. There are 223137 households who have water connection at home in rural areas. This comes to 86.12%.

Sanitation and Environment:

The main objectives of the Total Sanitation Campaign (TSC) are;

- To bring about an improvement in the general quality of life in the rural areas

- To Accelerate sanitation coverage in rural areas for access to toilets to all by 2017
- To motivate communities and Panchayati Raj Institutions for promoting sustainable sanitation facilities

Awareness creation and health education:

- To cover schools and Anganwadis by March 2013, with sanitation facilities and, Promote hygiene education and sanitary habits among students in rural areas.
- Encourage cost effective and appropriate technologies for ecologically safe and sustainable Sanitation.
- Develop community managed environmental sanitation systems focusing on solid & liquid waste management.

Type of latrine facility:

Table:-3.22
Households by Availability of Type of Latrine Facility, Bharuch District, 2011

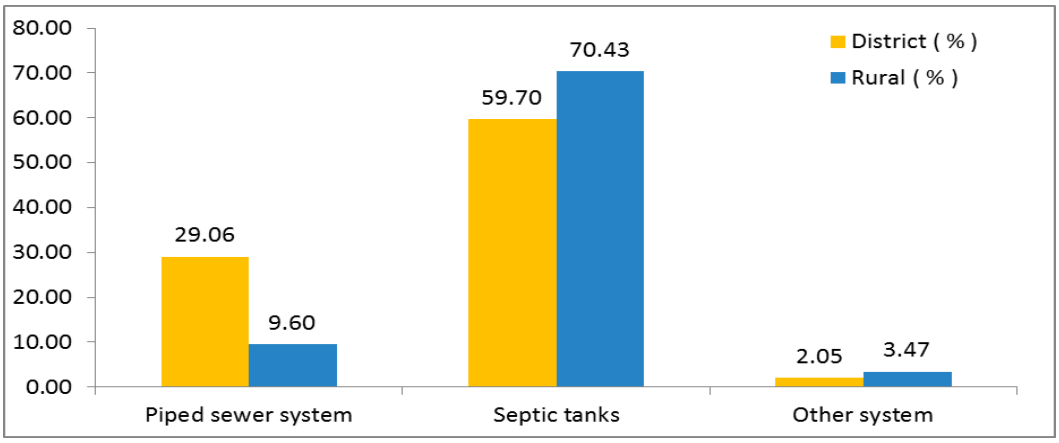
Latrine Facility	Rural	District	Rural (%)	District (%)
	Number		Percentage	
Number of Households having latrine facility within the premises	99410	204943	45.81	61.16
Number of households not having latrine facility within the premises	117618	130155	54.19	38.84
Total	**217028**	**335098**		
Source: Census of India, 2011				

54.19 % in rural areas and 38.84 % in the district as a whole do not have latrine facility within premises.

As far as the type of latrine is concerned, the piped sewerage is yet very limited i.e. 29% in the district but only 9.60% in rural areas. A majority of the households reporting some type of latrine facility use septic tank.

Table:-3.23 Type of Available Latrine Facility.

	District (%)	Rural (%)
Piped sewer system	29.06	9.60
Septic tanks	59.70	70.43
Other system	2.05	3.47
Source: Census of India, 2011		



Toilet Construction in Rural Areas:

Table:- 3.24

Number of Toilets constructed and remaining by taluka, July, 2015

Name of taluka	The no of toilets to be constructed as per BLS, 2012 survey	No of toilets constructed as per BLS, 2012 survey , July, 2015	No of toilets yet to be constructed as per BLS, 2012 survey, July, 2015
Amod	1009	1009	0
Anklesvar	14536	1913	12623
Bharuch	15086	1944	13142
Hansot	5290	2878	2412
Jambusar	13176	3315	9861
Jhagadia	19431	3245	16186
Netrang	10720	2630	8090
Vagra	6028	1899	4129
Valia	11029	4111	6918
Total	**96305**	**22944**	**73361**

According to base line survey, 2012, 96305 toilets had to be constructed. By the end of July, 2015, 22944 toilets have being already constructed and 73361 are remaining to be constructed.

It will be noted that the backlog for toilet construction is still very high in Jhagadia, followed by in Bharuch and then Amod.

According to the data available from Ankleshvar municipality, 1961 was the target for toilet construction. 1830 toilets in the urban areas have already being constructed while 131 are in the process.

Nirmal Gram Awards:

In order to achieve these objectives, the government has instituted Nirmal Gram Awards. In Bharuch district 125 villages have been given these awards. Maximum number of awards is given in Bharuch, Hansot and Ankleshwar Talukas.

The number of awards given in tribal talukas is very few. Overall there is a great deal of focus on these issues and the movement is becoming participative. Sabaria village of Valia taluka received Nirmal Gram Award -2010 from H.E. the President of India.

(Smt. Ambaben Chaudhary of Sabaria village (Taluko Valia District: Bharuch) receiving NGP-2010 award from H.E. President of India)

Bharuch district administration has launched Solid Waste Management (SWM) program in 367 villages across talukas in the district. The maximum number of villages are 88 in Bharuch taluka followed by 63 villages in Vagra, 59 in Ankleshwar and 46 in Hansot. Each household is given two different colour dustbins of 10 litres each for collecting non-biodegradable and bio degradable solid waste.

Tri cycles are given to collect these dustbins from each household and take to the dumping site. Compost pits are dug to dispose off the collected solid waste.

This work is assigned to Self Helf Groups (SHGs).

Apart from ensuring proper sanitation, hygiene and clean environment; it has generated valuable fertilizers and value generated is almost meeting the cost and thereby becomes self sustaining.

Taluka Hansot- Village Utaraj –Impressive approach and implementation of TSC.

Tricycle used in the program. Village – Utaraj, Taluka – Hansot.

Separate colour Dustbins. Village – Utaraj, Taluka – Hansot.

Door to door collections of solid waste. Village – Utaraj, Taluka- Hansot.

Health: Way Forward

- It is suggested to identify the best practices Anganwadi centers. Such identified centers may be recognized as such and, be given awards. This will help such awarded institutions become very visible in the district and can act as the agents of change for adopting such best practices and management by others.
- The grass root level functionaries such as ASHA in health, Anganwadi worker in ICDS, multi-purpose Female Health Worker, Dai, women members of Panchayat, sakhi mandal and pani samiti constitute a very valuable pool of local resource for attending to the problems in maternal and child health, malnutrition, Mid – Day meal, drinking water and sanitation. It is suggested to ensure coordination among them at village level and train and empower them so that collectively they are able to contribute much more than their individual actions.

- The ANC program has the target of a large number of estimated deliveries in the district and the task is early identification of pregnancy, registration of pregnant women, distribution of iron folic tablets, TT injection if necessary, periodic medical checkup, institutional deliveries etc. It is suggested that after the second medical checkup, the health functionary priorities the high risk cases and communicate the information to 108 medical service, CHC / PHC etc.
- In our understanding the enthusiasm of private medical practioners to participate in the Chiranjivi Yojana is lacking. It may be necessary to think of improving the financial package to be attractive enough on the one hand and, accelerate the training of ANMs and other paramedical personnels on the other.
- The CHC in Jambusar taluka has played important role in the institutional delivery because of the appointment of a Gynecologist.
- In other words, the public medical institutions with their given infrastructure have also important role in maternal and child health. To the extent possible, the CHCs should be made professional institutions (atleast some of them and make them centers of treatment, blood bank, radiology, pathological test etc). It is suggested that some of these extended facilities can be through the support of some companies as a part of their corporate social responsibility. In Bhauch district, some PHCs and CHCs have already been upgraded with the financial and technical support from the Gujarat Narmada Valley Fertilizers Limited.
- It is also suggested to consider to start mobile health care units cum ambulance in the radius of 15 to 20 km of the district general hospital on chargeable basis to bring patients with complications for treatment. The district already has three mobile health care units. In areas with low population density and scattered pattern of habitation such mobile units can strengthen the service delivery.
- Under the ICDS, the status of children up to the age of 5-6 is monitored by organizing the Mamta Divas on every Wednesday every month. Children & pregnant women are weighed, Hb level among pregnant women is also measured and so on. It is suggested to involve organizations like Rotary clubs, Lions clubs to syncronise some of their activities with Mamta Day.
- Under the ICDS, the children are provided with nutritious food supplements and is not a substitute of intake of food at home. The working of PDS in this context need to be looked at carefully particularly because highly subsidized food grains are available to BPL families. Cleaned packed and certified grain distribution by PDS is suggested.
- The findings from the school health check-ups indicate that about 11% of the children have some medical defects and the proportion of referral cases is about 4-5%. On the whole most of the ailments were ordinary in nature and were treated on the spot they related to eye, teeth, ear, skin etc. The school management and class teacher in particular are also in a position for early identification of such ailments.
- The 108 medical emergency service has become a boon to all. Almost 50% of the cases attended are relating to pregnancy, child health etc.

- Good restrooms and facilities for attending health personnel may be provided to reduce fatigue.
- Under the Developing Taluka Scheme in Valia taluka, micro level identification of the critical gaps such as regarding the provision of drinking water in the villages, identification of training needs and placement in jobs etc was under taken. This is a direction for further planning at micro level.
- The issue of preventive health care may be seen in relation to village planning, extension of Gam Tal and protection and development of natural resources of land and water at village level.
- Capacity building and training program for the members of panchayat and municipality are suggested so that they are not only acquainted but are able to appreciate the nature and the scale of the problems and play active role in finding solution with other stake holders.

CHAPTER – 4

LIVELIHOOD PATTERNS AND OPPORTUNITIES

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LIVELIHOOD PATTERNS AND OPPORTUNITIES

Introduction:

The sustainable livelihood sources, particularly for the weaker sections of the society, depend on their access to assets like land, livestock, other forms of wealth and above all, on their skill, education and health.

The advantage of emerging opportunities can be taken if the poor are having some of these assets or are enabled to access capital and financial resources for self-employment, for education and skill development.

A large section among the poor depends on wage labour – mostly casual jobs across the sectors of the economy. Almost 90 % work in unorganized or informal economy and do not have adequate legal or social protection.

The governments therefore develop strategy and programs which reinforce or complement each other in achieving the goal of higher income, high productivity and sustainable and inclusive development.

Agriculture and allied activities continue to be the main stay of employment and earnings for a 50 – 55 % of the rural population. The situation in Bharuch district is not different from this overall pattern of livelihood activities of the people in the state. However, Bharuch District is emerging hub of rapid industrialisation. This has high potential to generate direct as well as indirect opportunities for jobs as well as for micro and small enterprises.

The population of Bharuch District in 2011 was 15.51 lakh. 10.26 lakh was the rural population. The total population increased by 13.14% between 2001 and 2011. Therewas spectacular growth in urban population i.e. 49.88%. The scheduled caste population, as per the Census 2011, accounted for 4.01% while, the scheduled tribes population was 31.48 % in the district.

Two talukas in the district, namely, Valia and Jhagadia are tribal areas. The scheduled tribe population in each of these talukas is between 66-73 %.

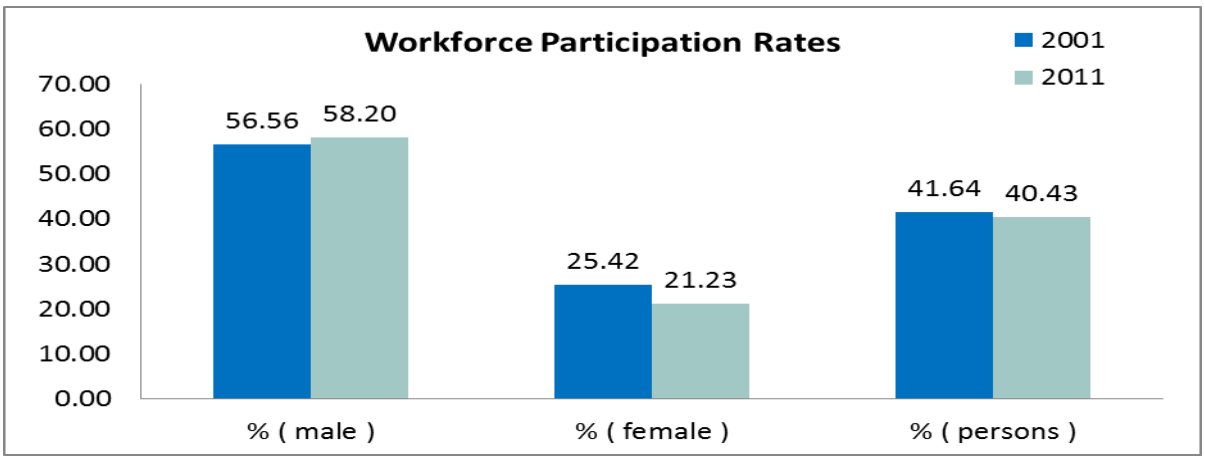
Work Participation Rates (WPR):

The workforce participation rates indicate economically active population.

Table:-4.1 Work Participation Rates

Year	WPR (Main + Marginal)								
	Male			Female			Persons		
	workers	population	%	workers	population	%	workers	population	%
2001	403657	713676	56.56	167036	656980	25.42	570693	1370656	41.64
2011	468919	805707	58.20	158205	745312	21.23	627124	1551019	40.43

Source: Census of India, 2011



The overall worker participation rates in the district were 41.64% (persons), 56.56% (Male) and 25.42% (females) in 2001.

In 2011, the overall rate decreased to 40.43% or by 1.17%age points, the male participation rate increased from 56.60% in 2001 to 58.20% or by 1.60%age points while, the female participation rate actually decreased from 25.42% in 2001 to 21.23% or by 4.17% age points by 2011.

This may be partly due to the increasing enrolment of girls in upper primary and secondary schools.

However, the higher participation rates in economic activity do not necessarily indicate gainful employment or less poverty. In fact, it shows the economic scenario of low income and poverty in rural areas. The participation rate in economic activity is U shaped with reference to the level of income. It is higher under poverty conditions and decreases with rising income as children go for education. Ultimately it will go up when young persons with education and skill enter the labour market.

Main and Marginal workers:

The census categorizes workers into Main and Marginal worker. A Main worker is defined as the worker who reports employment or work on regular basis for 183 or more days; while a marginal worker is employed for less than 183 days in the reference year.

The Main workers (male) as percentage to the total Main workers (male + female) have more or less remain unchanged between 2001 & 2011 i.e. 79.77% in 2001 & 80.50 % in 2011.

The female workers (Main) accounted for 20.23 % in 2001 and 19.50 % in 2011.

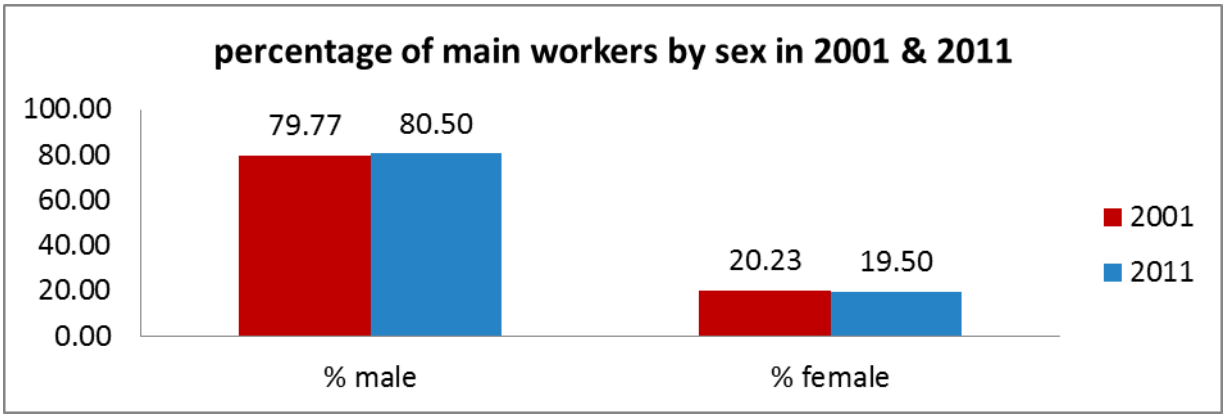


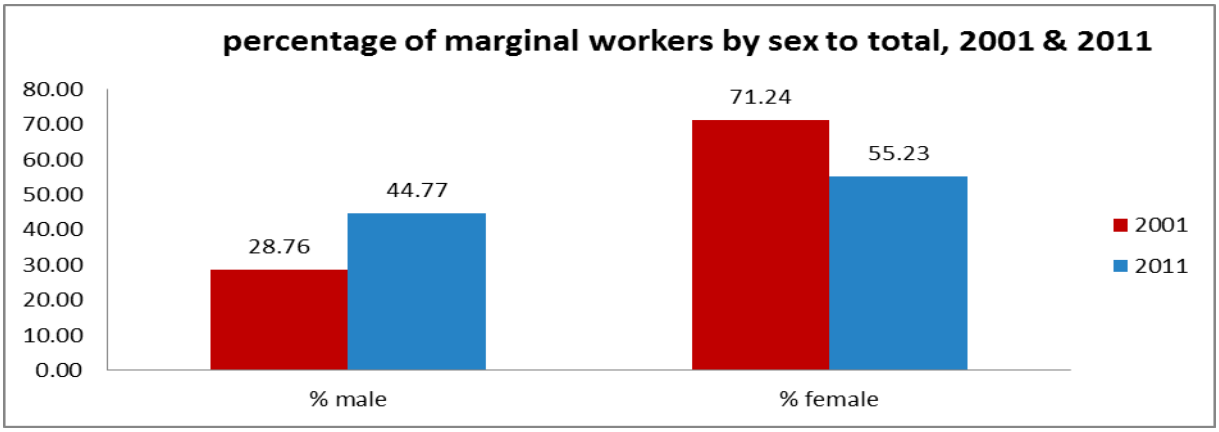
Table:-4.2 Marginal Workers

Year	Marginal Workers				
	Total	Male	% Male	Female	% Female
2001	101142	29090	28.76	72052	71.24
2011	100583	45035	44.77	55548	55.23

Source : census of India 2001, 2011

The female Marginal workers as percentage to total female workers (Main + Marginal) decreased from 71.24 % in 2001 to 55.23 % in 2011.
However, the male Marginal workers as percentage to total male workers (Main + Marginal) increased from 28.76 % in 2001 to 44.77 % in 2011.

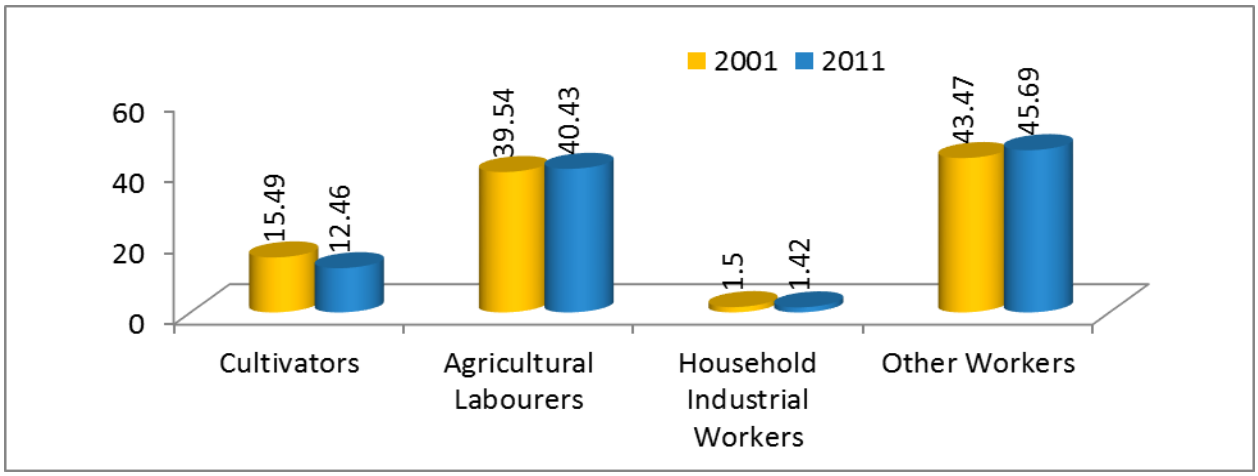
On the other hand, the percentage of all Marginal workers (male + female) decreased from 17.12 % in 2001 to 16.04 % in 2011. This indicates some reduction in the overall under employment in the district.



Industrial Distribution of Workers:

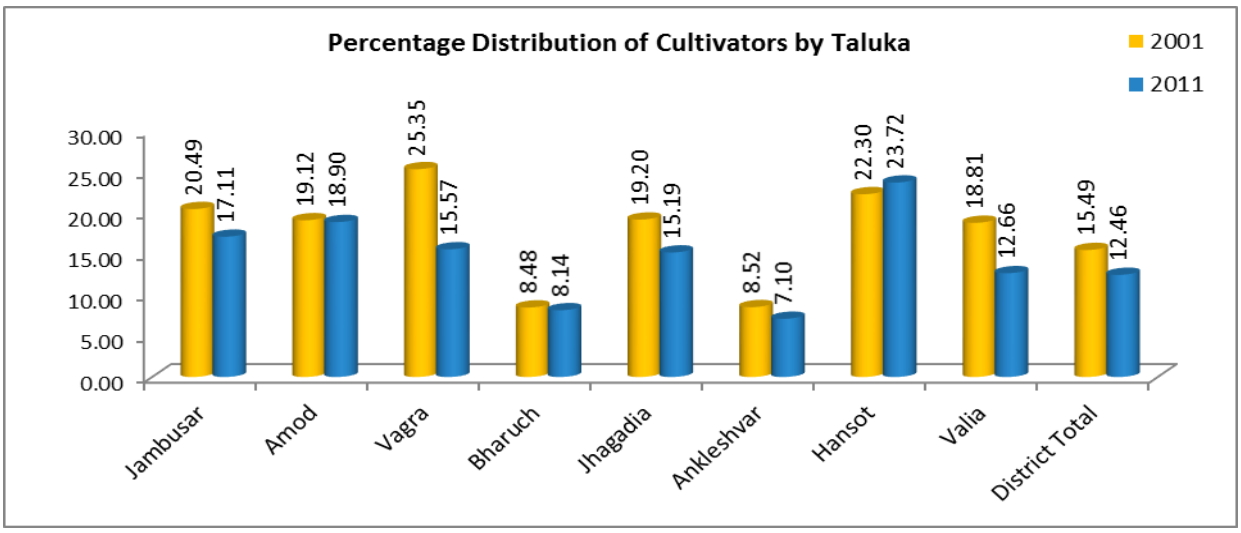
Table 4.3 Percentage Distribution of Workers Across Industrial Categories

Year	Category of Workers (%)			
	Cultivators	Agricultural Labourers	Household Industrial Workers	Other Workers
2001	15.49	39.54	1.5	43.47
2011	12.46	40.43	1.42	45.69



Source: Census of India, 2001, 2011

Out of the total workers (Main + Marginal) in the district in 2001, 43.5 % were "Other workers" and 1.5% were engaged in household industry. Thus 45% of the total workers in the district, were non-agricultural workers in activities like trade and commerce, manufacturing, Transport and communication and other services. 39.5% were agricultural labourers and 15.5% were cultivators. In 2011, the percentage of cultivators decreased to 12.46%, while agricultural labourers increased to 40.43% and, other workers also increased from 43.47% in 2001 to 45.69% in 2011.

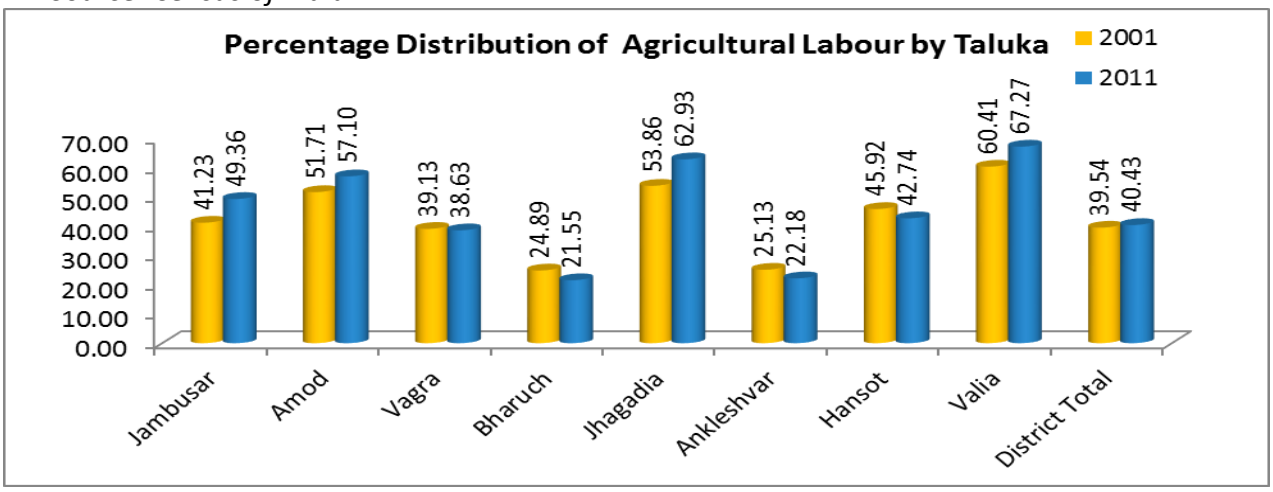


Source: Census of India

Table -4.4 Percentage Distribution of Agricultural Labour by taluka

Name of Taluka	Agricultural Labour	
	2001	2011
Jambusar	41.23	49.36
Amod	51.71	57.10
Vagra	39.13	38.63
Bharuch	24.89	21.55
Jhagadia	53.86	62.93
Ankleshvar	25.13	22.18
Hansot	45.92	42.74
Valia	60.41	67.27
District Total	39.54	40.43

Source: Census of India

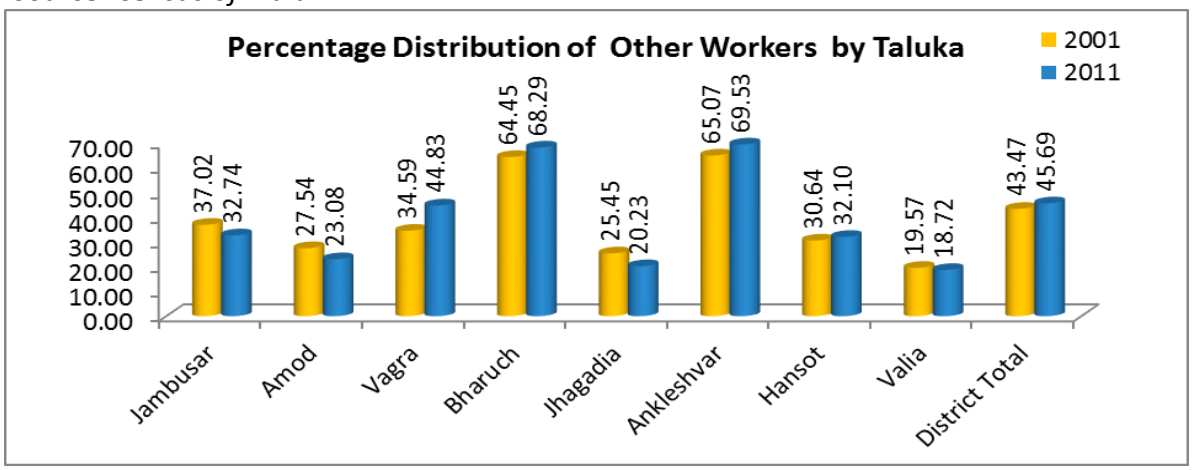


The non-agricultural workers in the district are mainly concentrated in Bharuch, Ankleshwar and Vagra talukas, each having, 35 to 65% non-agricultural workers. Industrial development in these talukas in particular, has generated employment for rural labour and hence there is also shortage of labour in agriculture. The prevailing agriculture wage rate is between Rs.100 to Rs.120 per day and labour shortage for agricultural work is generally reported.It was difficult to find male agricultural worker.

Table -4.5 Percentage Distribution of Other Workers

Name of Taluka	Other workers	
	2001	2011
Jambusar	37.02	32.74
Amod	27.54	23.08
Vagra	34.59	44.83
Bharuch	64.45	68.29
Jhagadia	25.45	20.23
Ankleshvar	65.07	69.53
Hansot	30.64	32.10
Valia	19.57	18.72
District Total	43.47	45.69

Source: Census of India



Overall however while the 50% of the working population depended on agriculture and allied activities, 47% depended on non agricultural activities.

Land Utilization Pattern:

Given the position of agriculture and allied activities as a source of livelihood, the livelihood options and opportunities will depend on the access to natural resources of land, water and forest etc.

The Net Cropped Area (NCA) in the district was 60.13% of the reported area in 2006-07. However, as per the Comprehensive District Agriculture Plan (C-DAP), October, 2012, the NCA is lower at 54.74 % of the reported area. The NCA varied from the lowest of 51.34 % in Vagara taluka to highest of 77.85 % in Valia, 76.76 % in Amod taluka and 75.52% in Bharuch. The C-DAP shows that the NCA in Valia taluka is now as high as 91.36% and it is 77.31 % in Bharuch taluka. The differences in the data are regarding the area under cultivable waste land, area under scattered trees, and current fallow.

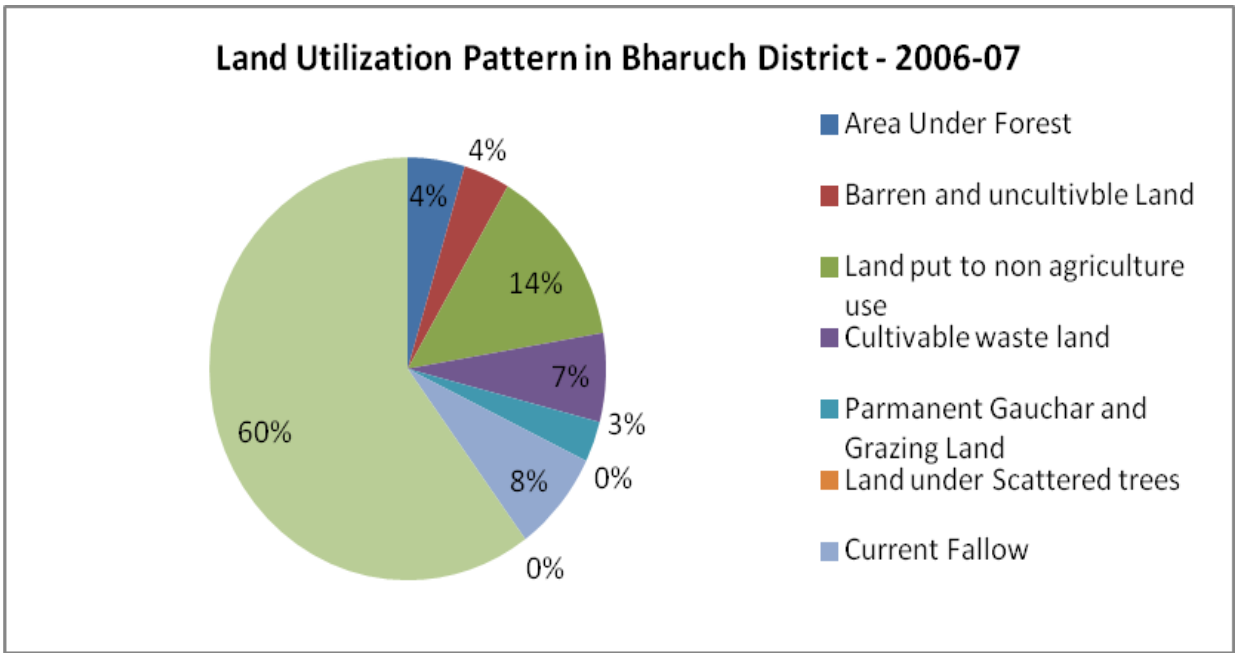
The NCA in Gujarat state was 52% of the reported area in 2006-07. The NCA in Bharuch district is 8% points higher in 2006-07.

Table:- 4.6

Land Utilization Pattern in Bharuch District, 2006-07

Land Utilization	Area(ha)	Percentage
Area Under Forest	24500	4.67
Barren and uncultivable Land	19800	3.77
Land put to non agriculture use	72600	13.84
Cultivable waste land	35500	6.77
Permanent Gauchar and Grazing Land	16300	3.11
Land under Scattered trees	0	0.00
Current Fallow	40500	7.72
Other Fallow	0	0.00
Net area sown	315500	60.13
Total Area Reported	**524700**	

Source: District wise Socio Economic Latest Data, 2009-10 / 2010-11



Area under the Forest:

The forest cover in the district is only 4.67 % of the reported area. This is only half of 9.5% of the area under forest in the state. About 18-20% of the area under forest is considered to be ideal for environment. In this sense, there is a challenge of not only increasing the area under forest but also improving the quality and density of forest cover.

Jhagadia is the only taluka which has 18.06% area under forest. In rest of the talukas, the forest area is very low and of relatively poor quality.

Reported area:

Jambusar and Vagra taluka have the highest and the second highest reported geographical area.

The density of population per Sq.Km is the lowest in Vagra (94) and even in Jambusar taluka density is 161 as compared to the average of 210 in the district. While, the agricultural use of land in these talukas, may have constraints, it is increasingly under focus for non-agricultural and industrial uses.

Cultivable waste land:

The cultivable waste land indicates the potential for agricultural development. Vagra taluka has 22593 ha or 25.57% of the area as cultivable waste land. Vagra also has the lowest Net Cropped Area (51.34%). The coastal areas of Vagra, Hansot and Jambusar are also impacted by salinity in underground water and land. Hence, agriculture is dependent only on monsoon. However, due to rapid industrial and port development, the land values have shot up and even inferior land has become valuable benefitting the land owners in these talukas.

Land put to non agricultural uses:

The non-agricultural uses of land indicate non-farm economic activity such as industrial, commercial, residential and infrastructure development. 13.81 % of the reported area is put to non-agricultural use in the district. As per the C-DAP, 10.44 % of the reported area is put to non-agricultural uses. Jambusar taluka has the highest percentage of area (28.91 %) put to non-agricultural use followed by Hansot (19.71 %) and Ankleshwar (15.75 %). The industrial and commercial activities are expanding rapidly in these talukas.

Permanent gauchers and Grass land:

These are common property resources. They not only support the livestock economy but also help to improve environmental status of the villages. However, the area under the common property resources in the district is very low at 3.11 %. Maximum was 4.57% in Hansot and Minimum was 1.74% in Amod. As per the C-DAP, permanent pastures accounted for only 2.53% of the reported area. This points out the need for protection and development of such common property resources including the water bodies.

Land is a scarce factor of production and is likely to be under greater pressure due to the increase in population and industrialization. Hence, at certain price level, the barren and uncultivable waste land as well as cultivable waste land can be brought under productive uses. This is classical Ricardian concept in theory. The private sector may buy land at low price and develop it for a variety of uses for profits. Hence, the local governments have an important task to protect and develop such common property resources for environmental protection and for supporting the livelihood activities of the rural poor.

Irrigated and Unirrigated Area:

Irrigation has land augmenting effect because it makes it possible to take the second crop and can also help to increase the yield by adopting improved seeds. Even in vagaries of monsoon, crops can be given protective irrigation.

Table:- 4.7 Area Irrigated and sources of Irrigation 2007-08(Area. 00 In Hec.)

Net Area Irrigated by Source	
Government Canals (Inclusive Panchayat canals)	575
Tubewells and other Wells	599
Tanks	16
Other Sources	5
Total	1195
Percentage of net area irrigated to net area sown	35.21
Gross Area Irrigated and Gross cropped Area	
Gross Cropped Area	3383
Gross Irrigated Area (G I A)	1176
Percentage of Gross Area Irrigated to Gross Cropped Area	34.76
Net Irrigated Area (NIA)	1121
Irrigation Intensity = (G I A/N I A)*100	106.60
Area Irrigated under major crops	
Rice (Paddy)	97
Jowar	42
Bajra	3
Wheat	135
Number of Tube wells and Dug wells in Operation	
No of Tubewells (Public)	186
No of Tubewells (Private)	1173
No of dug wells for irrigation purpose (Masonry)	8041
No of dug wells for irrigation purpose (Non masonry)	750
No of dug wells for irrigation purpose (Total)	8791
No of dugwell used for domestic purpose only	2227
No of wells not in use	1099
Total no of wells including tubewells	13476
No of Oil engines for irrigation	3702
No of electric motors used for irrigation purpose	5017
Total no of oil engines and electric motors for irrigation purposes	8719
Irrigation by Ground water	
Tube wells (Net Area Irrigated)	84
Tube wells (Area Irrigated more than once)	9
Tube wells (Gross Area irrigated)	93
Dug wells (Net Area Irrigated)	542
Dug wells (Area Irrigated more than once)	29
Dug wells (Gross Area irrigated)	571

Source :- irrigation statistics - 2011-12; District wise socio Economic latest Data 2009-10/2010-11

In Bharuch District, 112100 ha of the Net Irrigated Area (NIA) was there in 2007-08. However, the area under the irrigation has increased to 125900 ha during last 4 to 5 year.

Tube wells and dug wells on one hand, and the government canals including panchayat canals are the two major and equally important sources of irrigation in the district. 57500 ha are irrigated by canals while 59900 ha are irrigated by Tube wells and wells. Among the later, wells accounted for about 85% while tube wells accounted for only 15% of irrigated area.

In other words, the areas which are receiving irrigation water through canals are at an advantage due to low price of irrigation water. It can be seen that tube wells are also few and accounted for only a fraction of area under irrigation.

On the other hand, the privately owned dug wells have special significance in the irrigation scenario in the district. Public investment and private investment in dug wells may be given a priority.

Land use classification in the district shows that NCA is 315500 ha while, the area sown more than once is only 4.84%. This is mainly because the long duration crops such as cotton, Tur, Sugarcane and Banana in the district which are the predominant crops. The Gross Cropped Area (GCA) therefore was 343800 ha. Hence, the cropping intensity was low at 108.

The Gross Irrigated Area (GIA) was 119500 ha while the Net Irrigated Area (NIA) was 112100 ha. Hence, Irrigation Intensity was 106.60%.

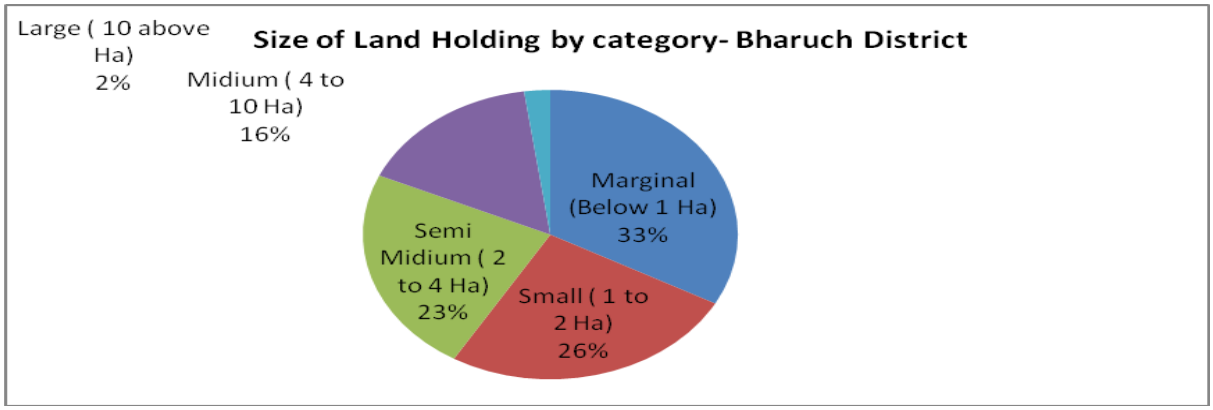
Operational Land Holdings and Area:

The distribution of operational land holdings in the district shows that 59 % of the holdings are small and marginal (33 % being marginal holdings), 39 % are semi medium and medium category of 2 to 4 ha and 4 to 10 ha and, 2.24 % are of 10 ha and above. Table-4.10.

Table – 4.8 Size of Land Holding - Percentage Distribution – 2010-11

Category Of Holding (size of Holding)	Marginal (Below 1 Ha)	Small (1 to 2 Ha)	Semi Medium(2 to 4 Ha)	Medium(4 to 10 Ha)	Large (10 above Ha)
SC	43.48	27.69	18.02	8.81	0.80
ST	31.61	28.36	24.42	13.66	1.73
Others	32.63	25.01	23.06	16.85	2.39
Total	32.9	25.69	23.12	16.05	2.24

Source: Agriculture Census 2010-11



Although about 80 % of the landholders are Marginal, Small and semi-medium category out of the total of 131004 operational land holdings, 104618 land holdings or 80 % are owned by others – other than scheduled castes and scheduled tribes families. In other words, land ownership is skewed in favour of non-SC and non ST population in the district.

In terms of area, 21 % of the land is cultivated by 59 % of the small and marginal farmer. On the other hand, 79 % of the land is with 41 % of the farmers. To make Marginal and Small farmers economically viable is a challenge to promote sustainable self employment in rural areas.

Area under major crops:

Cotton and Tur (pegion pea) are the two most important crops in the district. These two crops accounted for 123400 ha and 53700 ha respectively. As per the C-DAP 2011-12, the area under cotton has increased to 125937 ha. In this acreage, 45592 ha or 36 % are under hybrid cotton. This indicates the scope for expanding the acreage under the high yielding variety of cotton. The area under Tur was 53700 ha of cultivated area. It has increased to 56000 ha. Jowar is grown in 24600 ha while sugarcane is cultivated in 20900 ha. The Gross Cropped Area (GCA) is 338300 ha.

Rice is grown in 12700 ha. Castor and Sesame are also coming up in the cropping pattern.

Yield (kg/ha) in Bharuch district and in Gujarat State:

The yield per hectare is an outcome indicator of various agricultural inputs. Hence, the trend in average yield in major crops, level of yield in comparison to the same at the state level give insight in the state of agricultural development.

The yield gap is the percentage difference in the average yield in a given crop in the district over the average yield in that crop in the state.

Table:- 4.9

Trend in Area ('00) and Yield (Kg / ha) in Major Crops in Gujarat and In Bharuch District, Average of 2007-08 to 2009-10

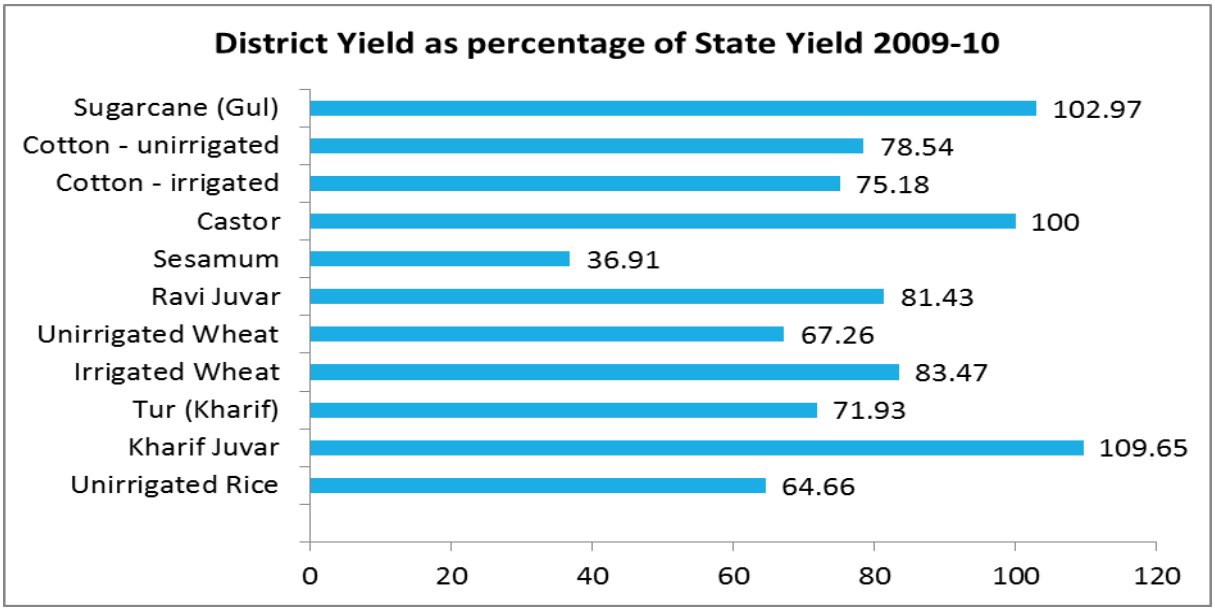
Name of the Crop	Bharuch District		Gujarat State		District Yield as percentage of State Yield	Yield Gap
	Average Area of 2007-08 to 2009-10	Average yield of 2007-08 to 2009-10	Average Area of 2007-08 to 2009-10	Average yield of 2007-08 to 2009-10		
Irrigated Rice	69	2315	4393	2239	103.39	3.39
Unirrigated Rice	58	721	2629	1115	64.66	-35.34
Kharif Juvar	66	1363	1058	1243	109.65	9.65
Kharif Bajra	1	972	5852	1036	93.82	-6.18
Maize (Kharif)	21	1240	4182	1261	98.33	-1.67
Tur (Kharif)	537	720	2659	1001	71.93	-28.07
Mung (Kharif)	29	471	1790	455	103.52	3.52
Udad (kharif)	26	717	992	624	114.90	14.90
Irrigated Wheat	118	2364	10189	2832	83.47	-16.53
Unirrigated Wheat	77	450	622	669	67.26	-32.74
Ravi Juvar	180	776	494	953	81.43	-18.57
Gram - Rabi	18	499	1741	980	50.92	-49.08

Name of the Crop	Bharuch District		Gujarat State		District Yield as percentage of State Yield	Yield Gap
	Average Area of 2007-08 to 2009-10	Average yield of 2007-08 to 2009-10	Average Area of 2007-08 to 2009-10	Average yield of 2007-08 to 2009-10		
Bajara - Hot weather	5	2367	1807	2356	100.47	0.47
Groundnut Kharif	12	1323	17551	1356	97.57	-2.43
Sesamum	31	148	2547	401	36.91	-63.09
Rape and mustard	1	1470	2823	1448	101.52	1.52
Castor	70	1971	4045	1971	100.00	0.00
Cotton - irrigated	379	518	15616	689	75.18	-24.82
Cotton - unirrigated	855	194	8517	247	78.54	-21.46
Sugarcane (Gul)	202	7281	2075	7071	102.97	2.97
Cumin	0	0	2397	543	0.00	100.00

Source:- Director of Agriculture, GOG, Gandhinagar.

Yield Gap:

Table:-4.10 District yield as percentage to state yield 2009-10	
Name of the Crop	**District Yield as percentage of State Yield**
Unirrigated Rice	64.66
Kharif Juvar	109.65
Tur (Kharif)	71.93
Irrigated Wheat	83.47
Unirrigated Wheat	67.26
Ravi Juvar	81.43
Sesame	36.91
Castor	100
Cotton - irrigated	75.18
Cotton - unirrigated	78.54
Sugarcane (Gul)	102.97



In crops like unirrigated rice, tur (kharif), irrigated and unirrigated wheat, rabi juvar, groundnut kharif, irrigated and unirrigated cotton; the yield gap is relatively high. However, in sugarcane, castor the district yield is higher than the state average.

Substantial crop acreage is unirrigated:

It will be noted from the table that in many of these crops like rice, tur, wheat, sesame and cotton in the district, substantial acreage is unirrigated. This has implications on the yield per ha.

For example, the yield per ha of unirrigated cotton is only 37 % of the yield of irrigated cotton. In case of wheat, it is only 19 % of the yield of irrigated wheat. In rice, the yield in unirrigated area is 31 % of the yield under irrigation.

However, yield per ha in irrigated as well as in unirrigated cotton crop is 20 to 25 % lower in the district as compared to the state. Similarly, in tur the district yield is lower by 28 %. Irrigated wheat yield is lower by 17% and unirrigated wheat yield is lower by 33%. The yield in sesame is lower by 63%. The yield in unirrigated rice is 35% lower than the yield of unirrigated rice in the state.

In Bharuch district however, the yields per hectare in commercial crops like castor and sugarcane are somewhat better than the state average. Apart from irrigation, the availability of seeds and prevailing farm practices may have to be examined. The quality and fertility of land is also an important factor.

Trend in average yield:

In spite of the yield gap in several crops, the average yield in major crops in the district during 2001 to 2010 has increased, except in sugarcane. The increasing yields in major crops indicate that the agricultural inputs and practices have given results. It is suggested therefore to ensure that the agricultural growth becomes more inclusive and sustainable with increasing yields.

There are variations in the soil health in different parts of the district for example; in Valia and Jhagadia, the soils are shallow and fertility is poor. In such conditions, measures and techniques of soil conservation needs priority.

In mid plain areas in the district where, major crops are grown and irrigation is wide spread, water-logging, secondary salinasion are emerging problems. Hence, soil reclamation technologies, bio compost, green manuring etc. needs to be adopted on wide spread basis. On the other hand, in coastal areas, the reclamation of salt affected land is necessary to improve land productivity.

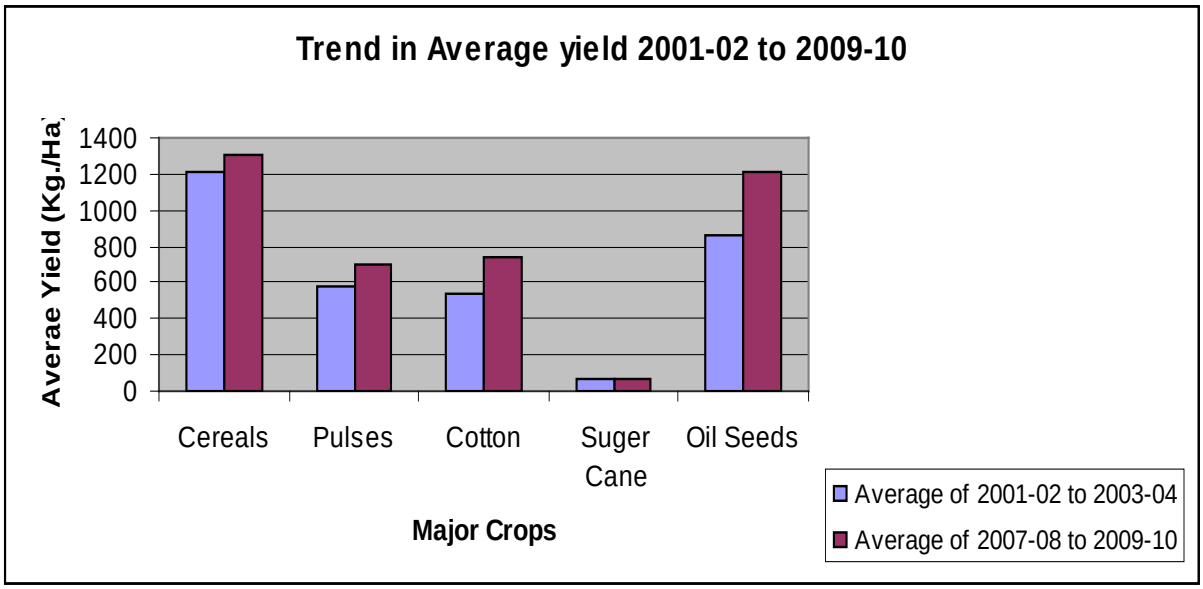
Above all, water economising techniques like drip and sprinklers can be taken up as a strategy for irrigation. In order to make this happen, co-ordinated efforts are required by experimental cum demonstration farms, Agricultural Produce Market committees and Department of agriculture.

Table – 4.11

Trend in Average yield (Kg/ha) - 2001-02 to 2003-04 and 2007--08 to 2009-10

Crop	Average of 2001-02 to 2003-04	Average of 2007-08 to 2009-10
Cereals	1207	1311
Pulses	574	701
Cotton (lint)	544	741
Sugarcane	64	73
Oil Seeds	855	1213

Source: District Agriculture Office, Bharuch



Horticulture:

About 30000 ha is under horticultural crops, of which, 20000 is under fruits and 8000 ha are under vegetables. Floriculture and spices are grown in limited area. However, acreage has expanded rapidly in last few years.

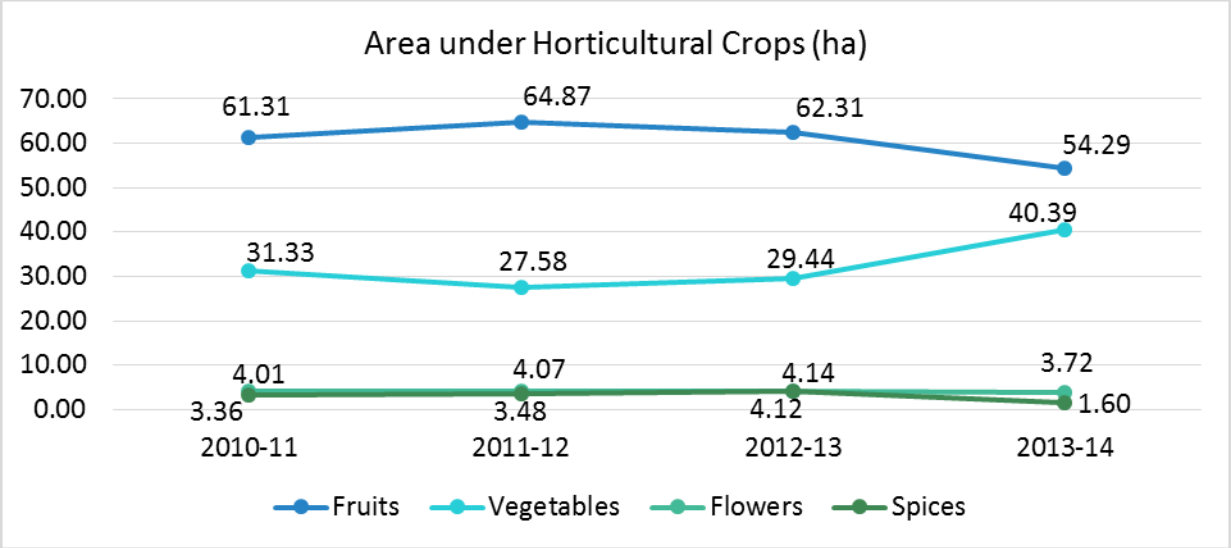
Among the fruits, banana and mango are the most important. The fruit crops are mainly grown in Bharuch, Ankleswar and Jhagadia talukas. Among the vegetables, it is Val, Bhindi (Okra) and Ringan (Bringal). The vegetables are more evenly grown across talukas. But flowers are grown mainly in Bharuch, Ankleswar and Jhagadia which have easy access to nearby urban markets.

Table – 4.12

Trend in Area under Horticultural Crops (ha)

Year	Fruits	Vegetables	Flowers	Spices	Total
2010-11	21148	10806	1383	1159	34496
2011-12	21935	9325	1377	1176	33813
2012-13	22194	10485	1474	1467	35620
2013-14	21333	15870	1460	629	39292

Source: Directorate of Horticultural, Gandhinagar



It will be seen that the farmers in the district have made a beginning to diversify crop pattern and are moving away from traditional crops to high value and high income generating cropping pattern. With the increase in area and production of horticulture crops, supporting infrastructure for storage, post-harvest processing facility, cold chain, market research, testing of soil health for advising on optimum cropping pattern availability of certified seeds etc. would require government support.

Minor Irrigation in Tribal Areas:

In the absence of irrigation, marginal land holdings become economically unviable and hence marginal farmers often work as agricultural labourers. Irrigation can help to spread employment over seasons which can help to eliminate seasonal unemployment. Irrigation also helps to adopt high yielding variety of seeds which will enable marginal farmers to become viable.

Minor irrigation projects target small and marginal farmers and techniques such as drip and sprinklers help to make the effective use of water. Check-dams etc. also helps in water conservation and improving the underground water levels. These projects are implemented in two tribal talukas namely Jhagadia and Valia and tribal pockets in other three talukas. These works are under the irrigation department of Bharuch district panchayat.

There are different types of irrigation works such as irrigation through tanks, bandhara, percolation tanks, check dams, flood control works and salinity control works in coastal villages etc.

As per irrigation statistics 2011-12, there are 53 water harvesting structures for collection of rain water and, 276 check dams with irrigation potential of 1375 ha. The check dams are also the source of water for live-stock and for other animals. In Hansot taluka salinity control project in coastal areas is under implementation.

The District Panchayat Bharuch is implementing 36 Minor irrigation Projects in tribal areas. These projects will create irrigation potential of 4071 ha in tribal area for the benefit of small and marginal farmers.

Table:-4.13 Minor Irrigation Schemes Under Irrigation Department, 2013-14

Sr. No	Yojana	Taluka	Irrigation Potential (Ha)	Number of Villages in Command Area
1	Daria Minor Irrigation Yojana	Jhagadia	202	3
2	Vali Minor Irrigation Yojana	Jhagadia	202	1
3	Dholekham minor Irrigation Yojana	Jhagadia	399	3
4	Dajipura Bandharan ninor irrigation yojana	Jhagadia	351	3
5	Bhongaria minor irrigation yojana	Valia	350	3
6	Koyali Mandvi minor irrigation yojana	Valia	118	1
7	Mokhadi Bandhara minor irrigation yojana	Valia	945	11
8	Dolatpur Bandhara minor irrigation yojana	Valia	1504	11
Total			**4071**	**36**

Source: District Panchayat Office, Bharuch

Gujarat Green Revolution Company: (GGRC)

The GGRC is encouraging the use of micro irrigation systems – drips, sprinklers etc. to economize the excessive use of water and ensure the optimum use of water to achieve better crop yields. Subsidy of about Rs.60,000 per irrigation set is provided and demonstration projects are undertaken to make optimum use of water and achieve higher crop yields. Scheduled tribe farmers are eligible for additional subsidy of 25% of the capital cost.

Between April, 2005 and March, 2012, the company has installed 4670 systems to provide irrigation to 9547 ha in the district – about 2 ha per beneficiary. Out of 4670 systems, 2289 are in Jhagadia and 1221 are in Valia talukas. Remaining 1160 micro irrigation sets are in tribal pockets in other talukas. In tribal talukas, drip irrigation in particular has been adopted in a significant way. 3475 ha in jhagadia and 3200 ha in valia are under drip irrigation while, 487 ha is under sprinkler.

C-DAP has proposed to bring 775 ha of cultivable area under micro irrigation each year between 2012 -13 to 2016-17. It is also proposed to construct 633 community tanks in addition to 255 existing tanks for irrigation.

In order to expand the use of the micro irrigation systems, it is suggested that the complementary inputs such as technical advice on crops, seeds, fertilizers and manures and marketing of the produce should be also made available as comprehensive package. These minor irrigation projects can help tribal families to become viable farmers and reduce their dependence on wage labour or on seasonal migration.

Agricultural Technology Management Agency (ATMA):

Given the diversity of agro climatic conditions and soil status in the different parts of the district, the government has implemented an innovative strategy for achieving higher yields in major crops and for the sustainable development of agriculture in the district.

Training Program under ATMA

The gap between what is achieved on the experimental farms / laboratory conditions and what the actual farmer is adopting on the farm is found to be quite large.

The comprehensive strategy therefore is to take the scientific knowledge and practices right at the farm level in each taluka and demonstrate the new farm practices and technology, create understanding of optimum crop combination consistent with the soil and agro-climatic conditions etc.

Involment and Empowerment of women through training.

The project is implemented in a participative mode between the scientists, agronomists and the farmers in the field. The farm technology transfer thus becomes real and sustainable.

The government has institutionalized this strategy and approach through the ATMA project in the district. It provides innovative and autonomous institutions at the state/ district/ block level under this umbrella institution – ATMA.

The key features:

- Encourages multi agency extension Strategies - farmers, private service providers, government.
- Ensures an integrated broad based extension delivery mechanism consistent with the farming system.
- Adopts group approach – groups of farmers (Farmers Interest Groups or FIGs) and identification of needs, training etc.
- Under the program inter-state training were organized with the participation of 160 Farmer's Interest Groups (FIGs).

Farmers visit agriculture research station.

- Also during 2010-11 and 2011-12, 330 FIGs were a part of state level training programmes.
- 1059 FIGs were trained in Krushi Vikas Kendra at chanswad in the district.

Among the various activities, were the demonstrations on farmer's fields in different crops – 400 in cotton crop; 675 in wheat; and 700 in summer groundnut.

Technology Transfer through demonstration on farmers's fields.

- On these demonstration farms, farmer to farmer technology dissemination was a key feature. 4197 farmers from the nearby villages also visited these demonstration farms.
- The activities also included inter-state exposure visits of farmers to agricultural research stations, agriculture university research farms, fields of successful farmers etc.
- Such visits were organized for 79 FIGs and 290 FIGs were also taken to different agricultural research centers within the state during 2010-11 and 2011-12.
- Other activities included district level Kisan Melas in which 5254 farmers participated.
- Four farmer – scientist interactions were also organized during 2010-11 and 2011-12 in which 6013 farmers participated.

Farmers – Scientist's interaction.

- Another innovation is of Farm School – to provide season long on the field training to participating farmers. 40 farm schools were organized in different villages in 2011-12 on vermin composting, fodder production and cotton.

- The farmers growing horticulture crops did not have proper system of handling and transport of vegetables and fruits. As a result, there was considerable wastage and realized price was also low.

- ATMA Bharuch took the initiative and provided plastic crates to 43 FIGs.

- Under the ATMA activities, the farmers with best farm practices and results on the field are identified in each taluka and are given ATMA Farmer awards. More than 50 farmers have already receive such awards.

Animal Husbandry:

Animal husbandry is normally found as a complementary source of income and employment for those who are engaged in farming occupation. One or two milch animals also become a ready source of milk for self-consumption and also a source of monthly cash income flow from the sale of milk.

For profitable animal husbandry, access to the by-products of food crops and green fodder is essential. Hence, animal husbandry is integrated with farming, irrigated area and cultivation of food crops. The landless labours have no means to take the advantage of developments in farming and animal husbandry.

It is however observed that the rural families who are not endowed with access or ownership of land and irrigation, have gone for poultry and rearing of sheep and goat.

Livestock:

The total livestock as per the livestock Census 2007, was 694489. In the total livestock, cattle (godhan) accounted for 17.55 %; Buffaloes for 22.15 %; 21.15 % were sheep and goat and 39.04 % were poultry. Whereas as per Livestock Census 2012, the total livestock was 692044. In the total livestock, cattle (godhan) accounted for 18.23%; Buffaloes for 19.15 %; 19.76% were sheep and goat and 42.45 % were poultry.

Thus, in the livestock economy of the district, poultry and sheep and goat are as important, as the ownership of cows and buffaloes. The poorer sections of the society and particularly the tribal and the minority families without land tend to opt for poultry, goat and sheep.

The total livestock increased from 694489 to 692044 or 17 % between 2007 and 2012. It is found that the number of cattle actually increased from 121869 in 2007 to 126163 in 2012.

On the other hand, the number of total poultry increased from 271136 in 2007 to 293680 in 2012. On the other hand, buffaloes have actually decreased (-13.85%) from 153814 in 2007 to 132505 in 2012.

The average milk yield of indigenous buffalo is about 4.35 Kg per day as against 3.72 Kg of indigenous cow. Even considering the total lactation period, the buffalo has become economically more attractive as a dairy animal. The yield of hybrid cow however more than double to that of the indigenous cow is. Hybrid cows account for about 10% of the total.

Dairy:

There are 451 milk co-operative societies in the district. The milk co-operatives are found across talukas. Jambusar taluka has the highest number of milk co-operatives While, Hansot has the lowest number.

The expansion of coverage of milk cooperatives would also link the members with a range of other useful services for members as well as for dairy animals. These additional linkages for animal health, supply of cattle feed, insurance etc are available to the member of the dairy cooperative.

The data on milk collection throw more light on milk collection and production. The total milk production was estimated at 402 lakh kilo litres during 2012-13.

The Dudh Dhara Dairy Bharuch has a milk processing capacity of 60,000 litres per day. Even during the summer months, the collection of milk has increased. The Dairy has the near sufficient milk processing capacity in different centers.

The dairy also has three mobile veterinary units. It also arranges supply of cattle feed and provides many other services. The animal husbandry including the projects on animal health, breed improvement, supply of cattle feed and green fodder etc. of the government can be coordinated to complement each other.

Valia taluka:

Valia taluka is selected for special focus for the development of dairy activity under the Developing Taluka Scheme of the government. In Valia taluka, there are 51031 cows and buffaloes of which, 33172 are cows and 17859 are buffaloes. Thus in Valia taluka, dairy

activity is more based on cows rather than on buffaloes. Due to this special focus, the milk chilling centre at Chaswad in eastern Valia collects milk through 80 collection centers and the milk is supplied to Sumul Dairy, Surat.

Similarly, 13 registered milk co-operative societies under Dudh Dhara Dairy, Bharuch, collect milk for the dairy from Valia taluka.

The Apex co-operative union of these dairies have important role for raising milk yield, improve breed of animal etc. Necessary efforts are required to increase the membership of milk co-operatives and establish infrastructure for chilling centres and collection centres.

The government and the dairy co-operative can play useful role in the supply of proper cattle feed, breed improvement, animal health care and fodder development.

Development of Fisheries:

Fish culture is taken up as a subsidiary occupation. There are 23839 fishermen – majority of them engaged in inland fishing. Most of the inland fishing is in village ponds. There are also 33247 ha of brackish water area for aqua culture in Jambusar, Vagra and Hansot taluka. Fish culture is important in the district and the government is also implementing the Sagar Khedu Sarvangi vikas Yojanas. In order to promote this activity as an integrated approach covering production and distribution of fish seeds, genetic upgradation, skill upgradation, cold storage and refrigeration etc. has been initiated.

Poultry, Sheep and Goats:

Sheep and Goat

There are not many open pastures in the district. Hence, herds of sheep and goat, or cattle cannot be sustained. However, the wage labourers and low income self-employed can be assisted to go for a unit of 2-4 goat for self-employment.

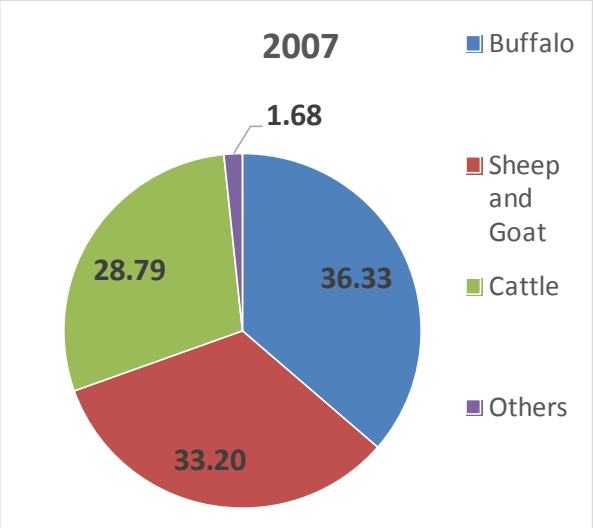
Poultry

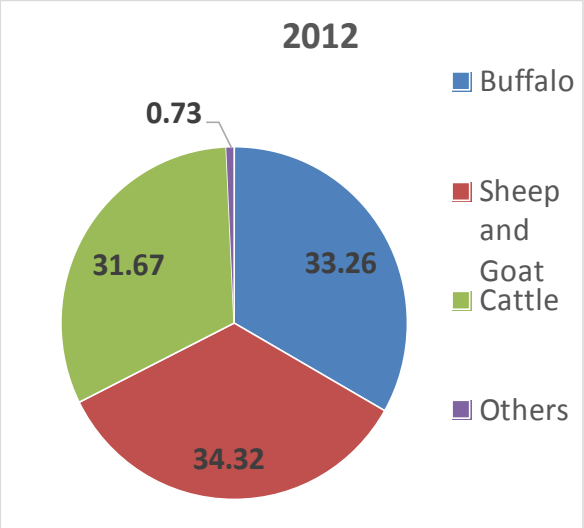
Poultry is generally taken up as a supplemental source of livelihood. However, it has been now established as an independent commercial activity also. Contract farming between Hatcheries and poultry farmers is the expanding activity with backward and forward linkages.

There is good scope for backyard poultry as individual self-employment or as complementary source of livelihood. This can be encouraged with technical as well as financial support.

Sheep and goat rearing has the potential for poverty alleviation as well as to improve nutrition level of the family. The landless labour and the low income self-employed families can be encouraged to have 2 to 4 goats of improved breed and semi intensive feeding system to set up economically viable self-employment.

The number and the composition of the livestock and other birds and animals indicate that sheep and goat and poultry may be given as much attention as the other components.





Krushi Mahotsav:

Every year Krushi Mahotsav is organized for a month long period prior to the sowing season. It covers all the rural areas in the state for spreading information, technology and benefits in the field of agriculture, animal husbandry, rural development etc. Some of the major activities undertaken are:

- Demonstration of new agricultural equipment
- Gram Sushobhan
- Guidance by agricultural scientist on crop pattern and practices
- Development of Gram and Sim Talav
- Development of credit co-operative, Sakhi mandal and milk co operative
- Gokul Gram, E-Gram and Nirmal Gram
- Distribution of soil health card and Kishan Credit card
- Distribution of kits for agriculture, horticulture and animal husbandry
- Drip irrigation, tree saplings

District Agricultural Plan:

The District administration, Bharuch, is implementing District Agriculture Plan (DAP) under the Rashtriya Krushi Vikas Yojana (RKVY) to increase public investment in agriculture and allied activities.

The plan has been prepared in consultations with different stakeholders at different level and hence, is indicative of the priority in agriculture and allied activities in the district.

The plan focuses on:

- Distribution and production of high yielding varieties of seeds.
- Soil health improvement and land development through measures like land and water conservations, land reclamation and development, soil testing facilities and varmi compost etc.
- Animal husbandry, fishery and poultry development with integration with agriculture.

- Increase in productivity and production in major crops and closing yield gap.
- Participative approach in the form of self-help groups, farmers clubs, training, coordination with agricultural produce market committees.
- Setting up of agri-clinics, agri-business centers and advisory services.

A summary statement of the major activity groups and the proposal for funds during the five year period are indicated.

Table No. 4.14

Budgeted amount for different heads of developments in Agriculture

No.	Activities	Total Funds (Rupees Lakh)
1.	Development of Major Food Crops	935.56
2.	Activities related to enhancement in soil health	498.89
3.	Integrated development of water shed area and waste land	13134.58
4.	Integrated Pest management schemes	32.00
5.	Increasing nonfarm activities	80.00
6.	Market infrastructure and marketing development	629.76
7.	Horticulture production and popularization of micro irrigation system	5522.50
8.	Animal Husbandry	471.31

Source: District Agriculture Plan, Bharuch

It will be observed that the highest priority is given to land development, soil and water conservation, micro irrigation and development of major crops. In Jambusar, Vagra, Ankleshvar and Bharuch, there are problems such as salinity ingress and also water logging in other areas. Given these problems, the suggested strategy is reflected in allocation of funds under different heads. It is hoped that the proposed public investment could become a catalyst to encourage private investment in co-ordination with NABARD.

Non-farm employment:

There are two major self-employment / micro enterprises promotion schemes – Swarna Jayanti Swarajgor Yojana (SJSY) of the government of India and the Vajpayee Bankable Scheme of the Government of Gujarat.

Swarna Jayanti Swarojgar Yojana (SJSY):

It is found that under the SJSY about 1400 to 1600 applications were received each year during 2011-12 to 2014-15 for bank loan to setup self-employment / micro enterprises, in the district.

Table:- 4.15 Progress under Bankable Schemes for micro enterprises

Year	Number of Applications received	Number of applications sanctioned	Sanctioned applications as percent to received
2011-12	1612	929	57.63%
2012-13	1431	950	66.39%
2013-14	1430	856	59.86%
2014-15	1508	694	46.02%

Source: District Industry Centre

It can be also seen that about 45 to 66 % of the applications qualified for bank loan, when the percentage of sanctioned loan was above 80%.

It is also found that the percentage of sanctioned loan to application was 80 % and above in tribal talukas of Valia, Jhagadia, and also in Vagra and Ankleshwar talukas.

This shows that both at the District Industry Centre (DIC) level and at bank level, there is good co-ordination. Applicants who applied for loan also appeared to be serious with their bankable business proposals and their repaying capacity.

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA):

MGNREGA is providing legal right to work to any person in rural areas in need of work. It has come as a boon to BPL families and particularly women among them, who had no work in lean and off agricultural season.

The number of applicants demanding work increased from 15132 in 2007-08 to 37608 in 2009-10 in the district. In 2007-08, 157715 man-days of employment was generated with an average of daily wage of Rs. 56. The total wage payment amounted to Rs. 89 Lakhs.

In 2009-10, 867792 man-days of employment was generated. The average daily wage paid was higher i.e. Rs. 83. In other words in the year 2009-10 about 38000 labourers participated in MGNREGA works in the district. A total of Rs. 722.44 Lakhs were paid to these workers at the daily wage rate of Rs. 83. Thus each worker received about Rs. 2000 as wages.

Table:- 4.16 Work Done Under MGNREGA, 2007-08 to 2009-10

Year	Number of applications demanding work	Number of job cards issued	Mandays of employment generated	Employment per person	Wages paid per day Rupees
2007-08	15132	78819	157715	2	56.13
2008-09	22426	27137	515472	19	73.38
2009-10	37608	4467	867792	23	83.25

Source: DRDA Bharuch.

The number of applicants was the highest in Jhagadia (12249) and in Valia (8736). The demand was relatively high also in Vagra taluka which is covered under Sagar Khedu Sarvangi Vikas Yojana (6533).

The low demand for work under MGNREGA is a measure of availability of alternative opportunities for work. Even after necessary preparatory work, if the demand for work is low and falling, it is an indication of the overall expansion of economic opportunities. Further, if the work under MGNREGA succeeds to reduce or prevent distress seasonal migration it is an indication of a great success. Seasonal migration to other district in search of work has more of less become negligible in the district. What is more significant is that the migration from rural area to urban centres like Ankleshwar, Bharuch, Dahej etc. is increasing creating labour shortage in agriculture.

Special initiative of the Government of Gujarat for the promotion of livelihood activities of the weaker sections of the society

Van Bandhu Kalayan Yojana:

The Government of Gujarat has launched a bold initiative – the Chief Minister's 10 Point Program for the development of tribal areas in 2007. This is Van Bandhu Kalayan Yojana.

This is a comprehensive programme dedicated to tribal development and is implemented in 43 Talukas of 11 Districts in the state. In Bharuch district, Valia and Jhagadia are covered under the yojana. The program aims to enable the tribal regions to leap frog into main stream development. At the state level, a package of Rs. 15000 crores has been ear marked under the program.

The program proposes adoption of new technology, infrastructure development, vocational training and the provision of modern facilities. Wherever feasible, help from the private sector will be also taken.

The program aims to create employment opportunities for 5 Lakh families; provide quality education and higher education; health care facility; housing; safe drinking water; irrigation; universal electrification; all weather road connectivity and urban development.

Although there is no additionally of funds available for the scheme, what is striking is the effective co-ordination among various line departments and agencies who canalize resources out of their budget for the focused vulnerable groups and the area.

Sagar Khedu Sarvangi Vikas Yojana:

This is a 12 point flagship program and was announced by the Government in 2007 under the 11th Five Year Plan. Under the 12th Plan Rs. 21,000 crores were allocated to address the developmental issues of 16 Lakh population living in 3000 villages of 38 Coastal talukas in 13 districts in the states.

In Bharuch district, Jambusar, Hansot and Vagra talukas are covered under this Yojana. The program aims to improve the quality of life in coastal areas specially fisherman population.

The program focuses on capacity building and training for up gradation of skills in a big way. This will promote tourism and create employment opportunities. It proposes specific and time bound action plan for improving wage and self-employment, educational facilities, health infrastructure, drinking water, housing, salinity ingress, electrification and water conservation. It has a special focus on the upgradation of technology in traditional profession like fishing and salt worker.

Between 2007-08 and 2009-10, houses have been constructed for sagar khedu families in all the three talukas – Jambusar, Vagra and Hansot. 1561 houses have been constructed in Jambusar, 679 in Vagra and 452 in Hansot under Indira Awas Yojana.

630 houses were constructed under Sardar Awas Yojana and 75 were constructed under Pandit Dindayal Awas Yojana. Further, there seems to be somewhat larger gap between the targets and the achievements. It is however noteworthy that whatever the financial allocation are made the funds are released and spent. This shows that housing for the sagar khedu is in demand and is implemented as per the expectations.

Awas Yojana:

Table – 4.18

Sagarkhedu Awas Yojana 2007 - 08 to 2009 – 2010							
Sr. No	Name of Taluka	Unit	Physical		Financial		
			Target	Achievement	Allocation Rs. In Lakh	Grant Released Rs. In Lakh	Actual Expenditure Rs.in Lakhs
Indira Awas Yojana							
1	Jambusar	House	1905	1561	561.75	472.27	455.16
2	Vagra	House	911	679	318.85	259.48	206.23
3	Hansot	House	585	452	204.75	166.6	143.45
		Total	**3401**	**2692**	**1085.35**	**898.35**	**804.84**
Pandit Dindayal Upadhyay Awas Yojana							
1	Jambusar	House	111	70	17.72	17.72	17.72
2	Vagra	House	51	2	0.4	0.4	0.4
3	Hansot	House	80	3	0.7	0.7	0.7
		Total	**242**	**75**	**18.82**	**18.82**	**18.82**
Sardar Patel Awas Yojana							
1	Jambusar	House	210	210	80.85	80.85	80.85
2	Vagra	House	180	180	69.3	69.3	69.18
3	Hansot	House	240	240	92.4	92.4	92.4
		Total	**630**	**630**	**242.55**	**242.55**	**242.43**

Source: DRDA, Bharuch

Garib Kalyan Mela 2013, Bharuch district:

The Garib Kalyan Mela symbolizes the implementation of the beneficiary oriented schemes of almost all line departments and government agencies driven by the highest political leadership across all the talukas in the state, once in a year.

Each line department and the agency prepares the targets for achievement and on the day of the Garib Kalyan Mela, the benefit is delivered directly to the beneficiary by the Hon'ble Chief Minister and the subsequently followed up by the concerned departments.

It may be mentioned that this is a master strategy to improve the efficiency of each department and agency for implementing the schemes and programmes which otherwise they are supposed to carry out.

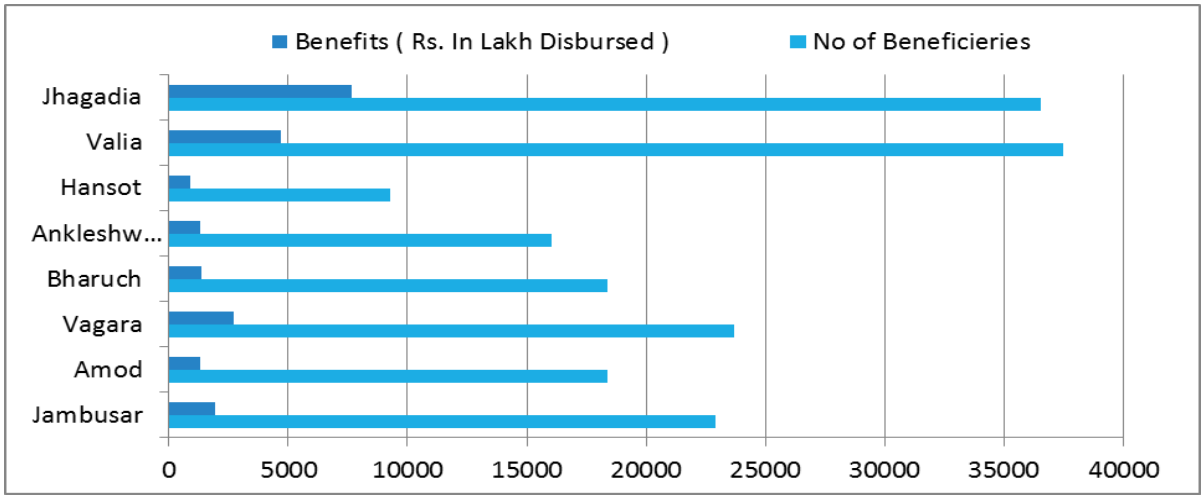
Mela therefore bring a sense of urgency and priority and it also conveys the message that the government is fully committed to ensure that the benefits to which the poor are entitled, reach to them directly. All the talukas in Bharuch district participated in the programme and have documents indicating the actual activities undertaken.

Between 2010 and 2013, 182687 eligible persons below the poverty line became the beneficiary of the cash disbursment under various government programs. Rs.219.27 crores were distributed during the period.

Table:-4.19

Number of Garib Kalyan Melas, No of Beneficiries and the Cash Benefits Disbursed by Taluka , 2010-2013		
Name of Taluka	**No of Beneficieries**	**Benefits (Rs. In Lakh Disbursed)**
Jambusar	22888	1953
Amod	18398	1300
Vagara	23706	2737
Bharuch	18380	1379
Ankleshwar	16028	1319
Hansot	9256	892
Valia	37478	4675
Jhagadia	36553	7671
Total	**182687**	**21927**

Source: DRDA, Bharuch



Construction of Roads, Buildings, Minor bridges:

Under the Sagar khedu Yojana, rural infrastructure facilities of roads, minor bridges etc. are given priority.

About Rs. 7 crores were spent in Jambusar, Rs.11 crore were spent in Vagra and Rs.6.5 crore in Hansot in rural infrastructure development during 2007-08 and 2009-10. Similarly, about Rs.30 crores have been spent to improve road connectivity in these talukas.

Training for Agriculture, Land for aqua-culture and Provision of Insulated Boxes:

The land for aqua-culture is allotted only in Vagra taluka (30 ha). Insulated boxes have been given to fisherman in all the three talukas, for example 502 in Vagra, 738 in Hansot and 1460 in Jambusar.

Agricultural training is only in Hansot taluka in which 269 persons have been trained and the expenditure of Rs. 2.62 lakh was incurred. Similarly, pagadiya sahaya – subsidy was given to 34 persons in Hansot taluka involving the expenditure of Rs.61000.

Manav Kalyan Yojana:

The objective of Manav Kalyan Yojana is to provide tools to karmayogi so that he or she is not only able to increase productivity and income, but can also live with dignity. The

amount spent on toolkits increased from Rs.15.87 lakhs in 2004-05 to Rs.131.20 in 2011-12 – about 3 times. The number of toolkit distributed in 2004-05 was only 635 but the number increased to 2624 in 2011-12.

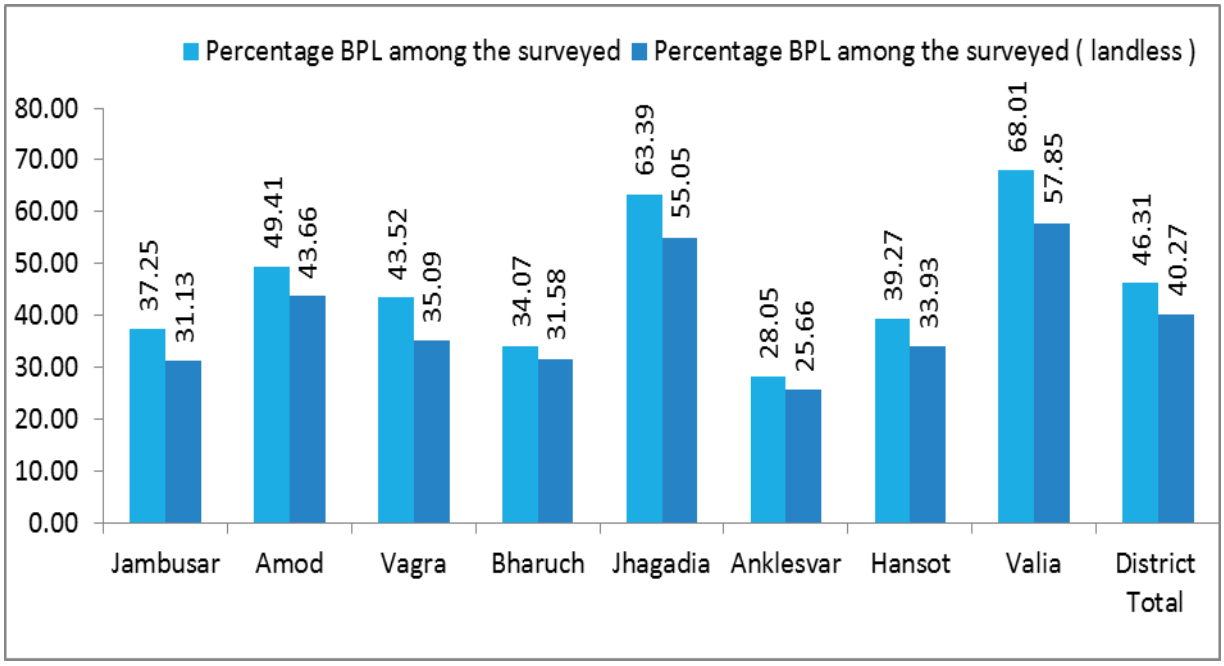
Between 2004-05 and 2010-11, 10424 Karmayogies were given toolkits free of cost. The government spent Rs.448.70 lakh on this toolkit. Highest number of toolkits was distributed in Jhagadia (3217) and in Bharuch taluka (1714) and in Valia (1916). The amount spent on toolkits increased from Rs. 15.87 lakhs in 2004-05 to Rs.131.20 lakhs in 2011-12 i.e. about 3 times. The number of toolkits distributed in 2004-05 were only 635 and increased to 2624 in 2011-12.

Population below poverty line (BPL Families): 2009

Table:- 4.20
Total Number of families Below the Poverty Line (BPL), with score 0 to 20.

Sr.No	Name of taluka	No of families Satisfying the criteria	Total no of families surveyed	Percentage BPL among the surveyed	Percentage BPL among the surveyed (landless)
1	Jambusar	13876	37254	37.25	31.13
2	Amod	12364	25023	49.41	43.66
3	Vagra	8415	19338	43.52	35.09
4	Bharuch	15512	45533	34.07	31.58
5	Jhagadia	31376	49497	63.39	55.05
6	Anklesvar	11033	39335	28.05	25.66
7	Hansot	5663	14420	39.27	33.93
8	Valia	26519	38990	68.01	57.85
	District Total	124758	269390	46.31	40.27

Source: DRDA, Bharuch



The landless among the BPL accounted for 40.27%. However, in valia and jhagadia talukas between 55 to 58% were landless poor.

We have information only on BPL survey of April 2000 and it is based on the criterion of per capita consumer expenditure of Rs. 254/- in rural areas. According to the survey 51.18% of the rural families in Bharuch district were below the poverty line.

Across the social groups of population, 60% of the BPL families belonged to scheduled tribes – the highest in the district.

Across the occupational groups, the highest poverty was among agriculture Labour households i.e. 74%.

Table:-4.21 Number of Families Below the Poverty Line (BPL) with score 0 to 16, by social category and by Taluka

Name of taluka	No of families (ST%)	No of families (SC %)	No of families (OBC %)	Other families (%)	Total (%)
Amod	7.62	16.64	13.8	18.99	9.7
Anklesvar	7.61	10.49	7.69	9.74	7.97
Bharuch	9.61	13.44	20.3	8.84	10.9
Hansot	4.47	4.42	4.75	4.01	4.46
Jambusar	3.11	15.63	27.6	30.69	8.46
Jhagadia	31.7	17.88	10.8	14.42	27.4
Vagra	5.37	13.28	10.7	9.85	6.78
Valia	30.5	8.23	4.34	3.46	24.4
Total	**57983**	**5386**	**7723**	**5555**	**76647**

Source: DRDA, Bharuch.

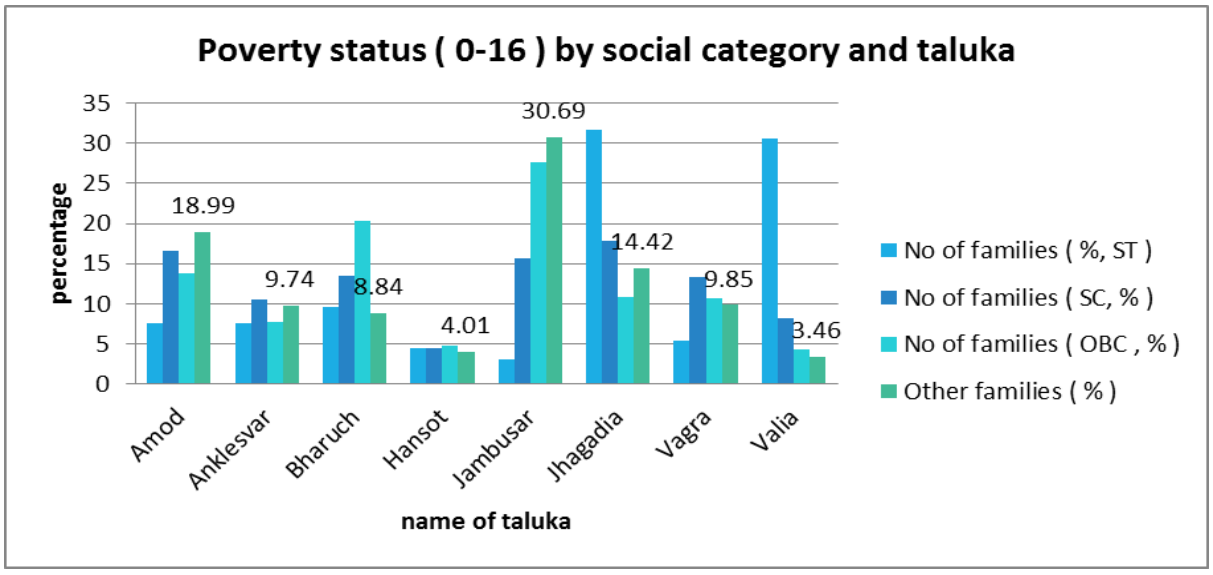
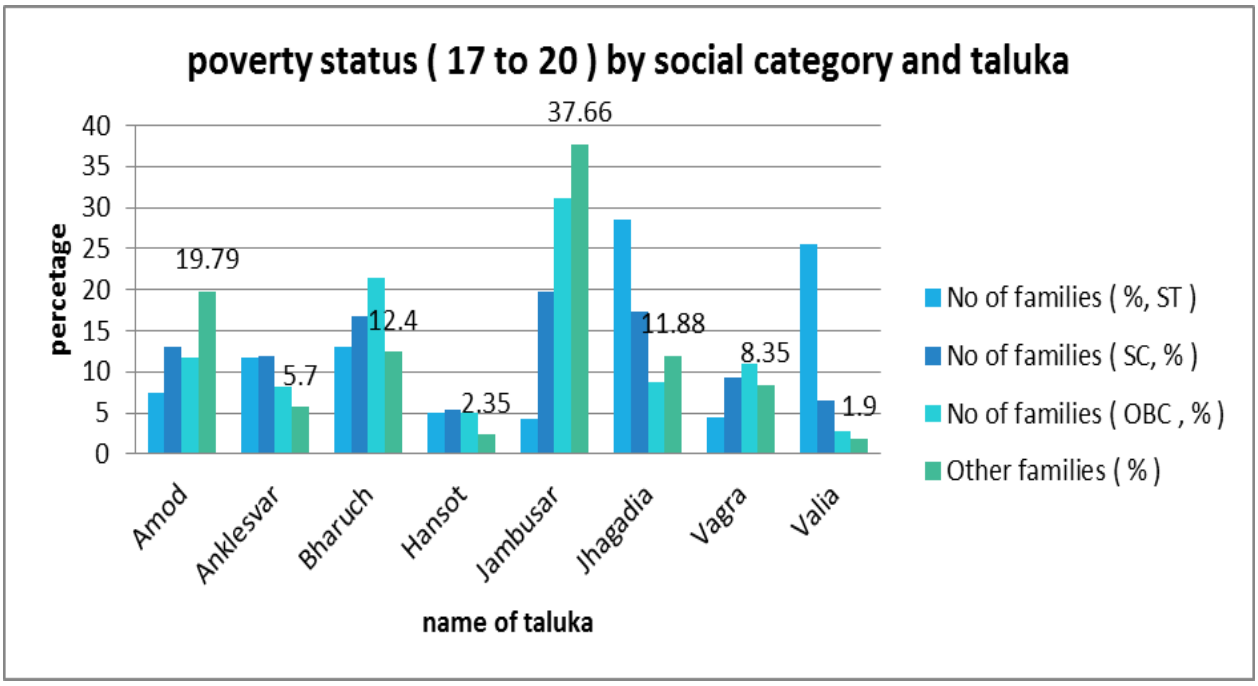


Table:-4.22 Number of Families Below the Poverty Line (BPL) with score 17 to 20, by social category and by Taluka

Name of taluka	No of families (%, ST)	No of families (SC, %)	No of families (OBC , %)	Other families (%)	Total (%)
Amod	7.38	13	11.7	19.79	10.5
Anklesvar	11.7	11.97	8.1	5.7	10.2
Bharuch	13.1	16.78	21.5	12.4	14.9
Hansot	4.94	5.36	5.1	2.35	4.65
Jambusar	4.29	19.8	31.1	37.66	15.3
Jhagadia	28.6	17.25	8.69	11.88	21.6
Vagra	4.46	9.34	11	8.35	6.66
Valia	25.6	6.49	2.81	1.9	16.3
Total	**27993**	**4945**	**8473**	**6848**	**48259**

Source: DRDA, Bharuch.



As per the latest BPL data, there were 85976 BPL families in the district. Among these 57983 or 2/3rd were in the score bracket of 0 to 16 , while 1/3rd were in 17 to 20 score.

It can be observed that the highest percentage (27.4%) followed by (24.4%) of the BPL families with 0 – 16 score are in Jhagadia and in Valia.

The percentage of BPL families with score 17 – 20 are in Jhagadia (21.6%) followed by in Valia (16.3%), in Jambusar (15.3%) and in Bharuch (14.9%).

As per the latest data on the no. of BPL families, 26519 families have been added to the year 2000 survey no. of 269390. In other wards the total no of BPL families are 295909. Among the added BPL families (26519) the highest is 31376 in Jhagadia, 15514 are in Bharuch and 13876 are in Jambusar.

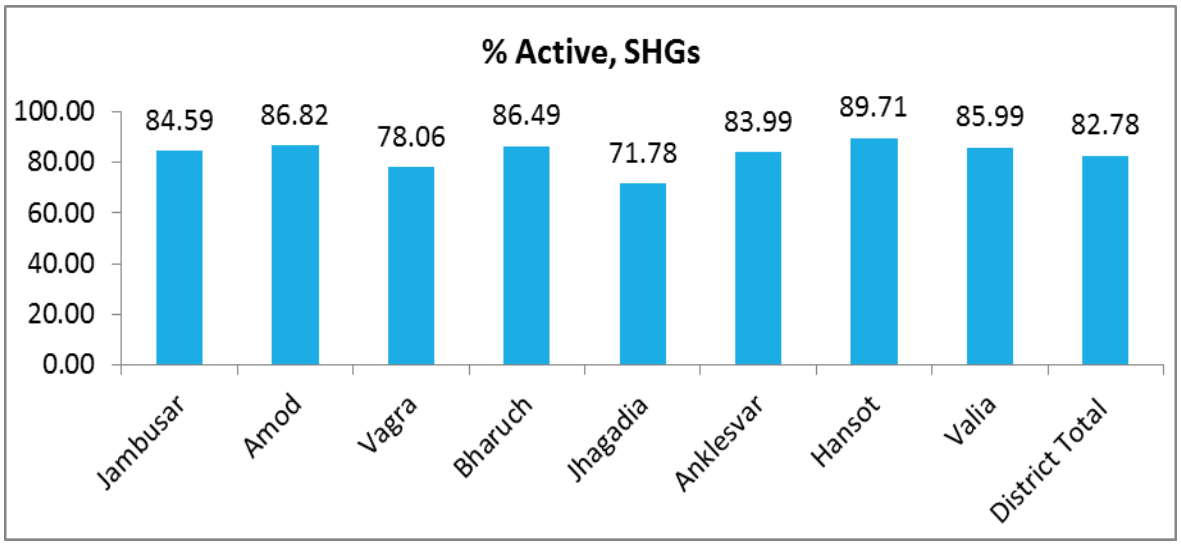
Mission Mangalam:

Organization and activities for livelihood by Self Help Groups (SHGs) – Sakhi Mandals.

Table:-4.23 Self Help Groups (SHGs), Total and Active across talukas, 2011-12

Name of Taluka	Total no of SHGs	Active SHGs	% Active
Jambusar	798	675	84.59
Amod	387	336	86.82
Vagra	392	306	78.06
Bharuch	681	589	86.49
Jhagadia	854	613	71.78
Anklesvar	731	614	83.99
Hansot	340	305	89.71
Valia	771	663	85.99
District Total	**4954**	**4101**	**82.78**

Source: DRDA, Bharuch



Out of 4954 Sakhi Mandals 4101 or 82.78 % were active. It will be observed from the table that the Sakhi Mandals are highly active across talukas.

Mission Mangalam Yojana: Success Story

In Khanpurdeh village of jambusar taluka, a Sakhi Mandal named Takdir Sakhi Mandal was formed in 2007 with the initative of Tasleemben Hasanbhai Talati, its present president. All the members of the SHG were prompt in making deposit and repayment of loan. After 6 month, the Sakhi Mandal was graded and revolving fund of Rs.5000 was sanctioned.

The president of group is having prior knowledge of Zardoshi work. She also organized the training of the members. After training, they took the job of embroidery work and became quite self dependent and became economically self dependent.

With the introduction of Mission Manglam, the credit limit for loans to SHG increased. The Sakhi Mandal took the cash credit of Rs. 70,000/- from the Bank of Baroda, Jambusar to expand their activity.

The president of the SHG is giving training to other group members for Zardoshi work as a master trainer.

Training Other Members:

Some of the Zardoshi product are shown in the Photo.

After comprehensive training, using benefit of cash credit and hardwork each member of group now earns Rs. 250 to 300 per day.

The success of this Sakhi Mandal has been admired at the highest level in the state.

Salient features of the Takdir Sakhi Mandal:

Activity : Zardoshi Work

Sakhi Mandal : Takdir Sakhi Mandal

President : Tasleemben Hasanbhai Talati

Secretary : Aaishaben Yusufbhai Ahamed

SHG saving : Rs. 45,000/-

Revolving fund : Rs.5000/-
Bank Loan : Rs. 70,000/-
Benefit to Each member : Rs. 4000 per month
Total income generated per month : Rs. 30,000/- to 40,000/-

Location of the Project : Village Khanpurdeh, Taluka Jambusar

Job Undertaken : Embroidery work as per the work order from individuals, local shops and NRIs

Success Story of Mai Mishra Sakhi Mandal, Jhagadia:

The above mentioned Sakhi Mandal as a success story was the out come of dedicated work and efforts of anganwadi worker, social mobilizer of taluka Sakhi Mandal, Bank of Baroda, Rajpardi and above all Raziaben Firojbhai Siddique and Secretary Naseembanu Jhummabhai Siddique.

In the savings bank account open by the group, every member paid the monthly instalment of Rs. 50 on regular basis. As a result the group was ranked high and the government also gave Rs.5000 as revolving fund for carring out the activities.

The success was because Rajiaben was already having the knowledge and skill for Hastakala Udyog. Product such as embroidery, jula, jula for children, home decoration items were produced.

These products were sold in weekly markets, as per the orders from outside and sell in fairs.

Under the Mission mangalam Rajiaben was advice to visit a big fair in Surat. She was supported by the Mission mangalam yojana. She was able to sell items worth about Rs. 20000 which gave lot of boost to the activities of the Sakhi Mandal.

Mai Mishra Sakhi Mandal, Jhagadia, Bharuch.

Status of Housing:

Table:-4.24
Households by the condition of Census Houses Occupied by them, 2011 In Gujarat State,and Bharuch District.

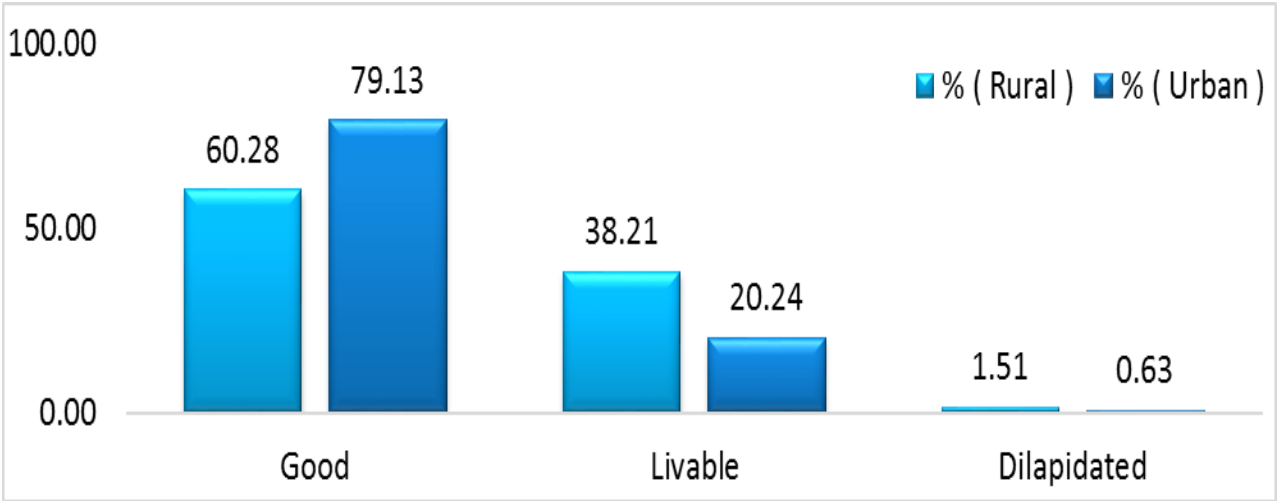
Residence	Total	Good	Liveable	Dilapidated
Gujarat State				
Total	11767057	7973324	3611222	182511
%age		67.76	30.69	1.55
Rural	6436493	3887921	2412055	136517
%age		60.40	37.47	2.12
Urban	5330564	4085403	1199167	45994
%age		76.64	22.50	0.86
Bharuch District				
Total	328519	219854	104666	3999
%age		66.92	31.86	1.22
Rural	212376	127884	81237	3255
%age		60.22	38.25	1.53
Urban	116143	91970	23429	744
%age		79.19	20.17	0.64

Source: Census of India,2011.

Table:-4.25Households by the Condition of Census Houses Occupied by Them - 2011

Residence	Total	Good	Livable	Dilapidated
Total	335098	224258	106817	4023
%		66.92	31.88	1.20
Rural	217028	130834	82918	3276
% (Rural)		60.28	38.21	1.51
Urban	118070	93424	23899	747
% (Urban)		79.13	20.24	0.63

Source: Census of India,2011



In Bharuch district as well as in the state about 67 – 68 % of the households live in census houses which have been categorised as Good, about 31% live in liveable houses and only about 1.22%, lived in dilapidated houses in 2011.

In rural area, Bharuch district, 60.28% live in "good houses", 38.21% live in "livable houses" while, 1.51% live in "dilapidated houses". These data are consistent with the increasing scale of the special housing yojanas.

Public Distribution System:

The interaction with the women agricultural labourers in the field, gave insight into what needs to be done for food security, health insurance and nutrition for these target groups of wage labourer.

Under the Public Distribution System (PDS) the foodgrains were available at low price of Rs2-00/kg wheat, Rs 3/kg rice, Rs 5 / Kg sugar and Rs 40/kg edible oil. People developed perception that, the items sold in the fair price shop are very sub-standard and adulterated. Although wages paid were at the level of minimum, this category of wage labour did not have health insurance. They were neither aware nor were registered under the Rastriya Swasthy Bima Yojana (RSBY).

Given this reality, the food and over all social security could become effective if the following steps can be considered.

- The food grains and sugar etc. received by the district offices of the civil supplies corporation can be cleaned and packed in 5 Kg and 10 Kg quantity and can be certified for onward distribution to the fair price shops. Even if packed grain costs Rs2 more per Kg, it would be far more acceptable than what is observed now in many cases.
- The monthly off take by the BPL families along with their names should be entered in E-gram at the village level itself.
- A campaign should be launched with the help of MLA and Panchayat members to ensure that every eligible family in the village is registered under RSBY and is given Identity card.

Roads and Development:

In the past, there used to be an academic debate on as to whether roads, particularly in tribal areas, lead to development or exploitation. By now however, it has been demonstrated that rural road connectivity and transportation has accelerated all round development and have provided quick access to medical facility, to higher education institution and better markets for agricultural produce and milk etc.

Hence, the road length of different category, the conditions of roads in tribal areas and in small towns has multiple implications.

KMs of roads by Category:

The total length of roads in the district is 3296 Kms. Out of 3296 Kms roads, 97 Kms are National Highways, 706 Kms are state highways, 635 Kms are major district roads, 366 are other district roads and 1492 Kms are rural roads. Thus, rural roads have the highest road length in the district.

Surfaced and un-surfaced Roads in the Tribal Areas:

The length of state highways in tribal areas in the district is 226 Kms. The entire length of state highways are surfaced roads – Black Top (BT); the length of Major District Road (MDR) in the tribal areas in the district is 128 Kms of which, 124 Kms are Black Top surface and 4 Kms is unsurfaced. The length of Other District Roads (ODR) in the tribal areas is 85 Kms of which, 84 Kms is B.T and 1 Km is Water Bound Macadam (WBM).

It is even more striking to note that only 12 Km of Villages Roads (VR) are unsurfaced. 78 Km length even in this category, is motorable. In the tribal areas, 488 Km of village roads are surfaced indicating high inter village road connectivity.

Table 4.26

Surfaced and Un-Surfaced Roads in Municipality Areas - 2012-13

District / State	Surfaced Road (Km)	Un-Surfaced Road (Km)	Total (Km)	Un-surfaced as Percentage to Total
Bharuch	223	235	458	51
Gujarat State	7233	2946	10179	29

Source: Executive Engineer,R&B,Bharuch.

In contrast to the good rural road connectivity, the condition of roads in municipal areas is quite poor. The unsurfaced road length under municipalities is as high as 51% of the total road length as compared to only 29 % in the state. This high proportion of un-surfaced roads in towns / urban areas is the highest in Bharuch district (as compared to in any other municipal areas in any district in the state).

Bharuch is emerging as a Major Industrial Hub:

Bharuch district is booming with industrial development. There are 14321 medium, small and micro enterprises (MSME). The MSME industrial units have the total investment of Rs.149304 crores and provide employment to 265147 people.

The total number of Medium and large scale industrial units in the district are 647 with the total investment of Rs. 40874 crores and employed 74913 persons.

Moreover, there are 236 proposals in large and medium scale projects with the investments of Rs 75058 crores and it is expected that when these 236 projects are implemented fully, it would generate additional employment of 76000 persons.

Also in Vibrant Gujarat 2011, 50 MOUs were signed with the Government of Gujarat having investment of about Rs. 95 crore and employment of about 1200. In the Vibrant Gujarat Summit, 2013; MOUs totalling the investment of Rs 452 crore have been signed. Among these, the areas of Industrial investment are Animal Husbandry, fisheries, Agro and Food Processing and Chemicals and Engineering. The MoUs of 2003, 2005, 2007, 2009 and 2011 are at various stages of implementation. The actual investment is Rs.27558 crore and it has generated employment for 22000 persons.

There are 109 salt producing units in the district. It covers 34544 acres of land and over 5000 families are involved in these works.

Industrial Infrastructure in Bharuch District:

Industrial Estates:

At present, there are 10 functioning industrial estates across talukas. Chemical, pharmaceutical, paper, plastic, dyes, textiles and glass industries are located in these industrial estates.

Special Economic Zones (SEZ):

Five SEZs are coming up with estimated investments of Rs. 244605 crore and employment potential of more than Rs. 4 Lakh in various sectors.

Port Facility at Dahej:

The government has developed port facility at Dahej on international standard. The handling facility at the port which is about 22 MMPPA is expected to go up to 60 MMPPA. The length of the sea coast in Bharuch district is 146 Km and has the potential of sea transport between Bharuch to Saurashtra.

Petroleum, Chemicals and Petro Chemicals investment Region (PCPIR):

The Government of Gujarat is accelerating the development of PCPIR as the Special Investment Region as per the policy announced by the Government of India in May, 2007.

The PCPIR covers the coastal gulf of Khambhat and Narmada river side portion of the Vagra – Dahej sub region. It covers an area of 453 Sq.Km. A large number of units in PCPIR are already operational. During 2011 – 12, goods worth of Rs 800 crores have been exported.

Dahej and PCPIR regions are also in close proximity to the chemical industrial estate in Ankleshwar, petronet LNG and liquid chemicals jetty with cargo handling facilities.

The site also falls within the proposed Delhi – Mumbai Industrial Corridor. The OPaL (ONGC Petro additions Ltd) are the important tenants in the PCPIR.

It will be observed that, the Bharuch district is fast developing into a major industrial zone in the sectors like oil and gas, chemicals and petro chemicals, port development etc. Thus the district is likely to experience large scale direct and indirect employment opportunities. However, to what extent the population of the district would be able to take the advantage will depend on the education and skill infrastructure and the advantage taken by the people in the district.

Trend in and Structure of Organised Employment:

The organized employment in the district was 155900 in 2013 and 163000 in 2015.

Table –4.27

Public / Private Sector	Employment (Number in '00) at the End of March		
	2013	2014	2015
Public Sector	257	257	259
Private Sector	1302	1344	1371
Total	**1559**	**1601**	**1630**

Source: office DET, Bharuch

The organized employment in 2013 consisted of 25700 persons but it increased to 25900 in 2015 in the public sector. In the private sector, the organized employment was 130200 in 2013 and it increased to 137100 persons in 2015. In other words, the organized employment in the private sector increased by about 7000 in one year as against only by 200 persons in the public sector.

Trend in Organized Employment by Category of Industry, 2013-2015:

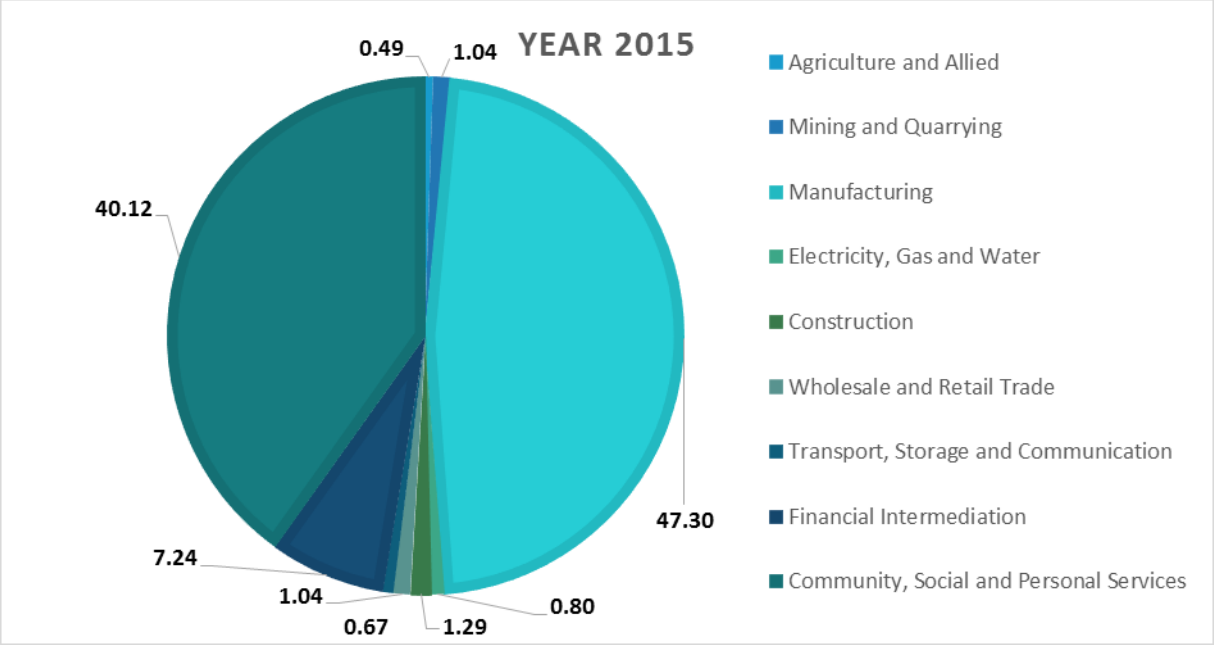
While the private organized sector, employment increased from 155900 in 2013 to 163000 in 2052 or by – 4.55%.

Table – 4.28

Organized Employment in Private Sector by Industrial Category ('00):

Sr.No	Category of Industry	Number of Employees ('00)		
		2013	2014	2015
1	Agriculture and Allied	8	8	8
2	Mining and Quarrying	16	17	17
3	Manufacturing	712	748	771
4	Electricity, Gas and Water	12	14	13
5	Construction	19	19	21
6	Wholesale and Retail Trade	16	16	17
7	Transport, Storage and Communication	10	11	11
8	Financial Intermediation	118	118	118
9	Community, Social and Personal Services	648	650	654
	Total	**1559**	**1601**	**1630**

Source: Office of the DET, Bharuch



Out of 163000 organized employment in 2015 (the 155900 employment was in 2013) 71200 was in manufacturing alone. Community, Social and Personal Services employed 64800 persons. In rest of the activities, the employment was much more limited in the district.

Vacancy Notification and Placement – The Role of Employment Services of the State Government:

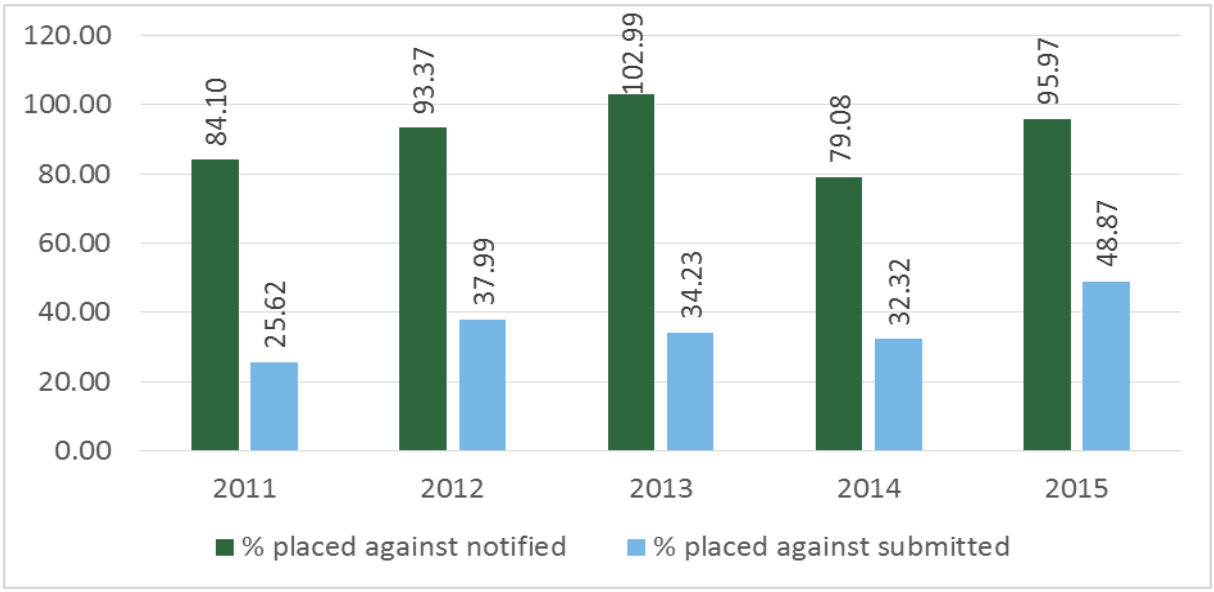
From 2011 onwards, between 21000 to 35000 vacancies have been notified each year. In 2015, 28654 vacancies are notified.

The employment exchange service has responded by submitting the list of the eligible candidates to the prospective employers. On an average, 45- 48% of the candidates have found jobs through the employment service. This is significant achievement in the competitive labour market scenario. In 2015 the list of 56262 candidates were submitted and 27498 or 49% of them were placed in the jobs in the district.

Table – 4.29

Vacancies Notification Submission and Placement, end of March			
Year	**Vacancies Notified**	**Candidate Submitted**	**Candidate Placed in Jobs**
2011	24969	81976	21000
2012	27434	67426	25615
2013	21624	65057	22270
2014	34933	85486	27626
2015	28654	56262	27498

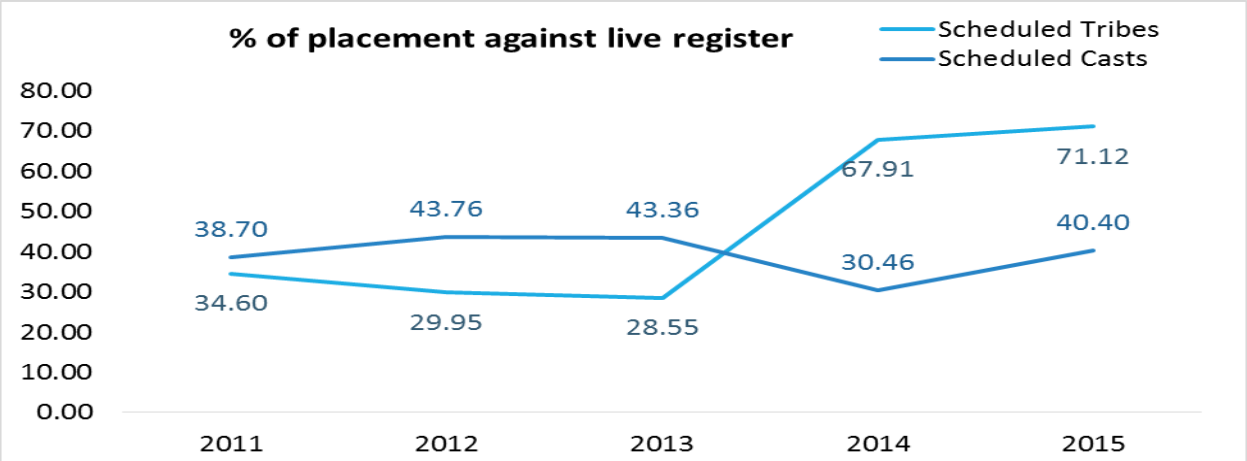
Source: office DET, Bharuch



The percentage of candidates placed in jobs to notified vacancies was 84 % in 2011 and 95.97 % in 2015. It varied between 79% to 96%.

Registration and Placement of Scheduled Tribes and Scheduled Castes Candidates in Employment Exchange Services:

The registration of ST candidates on the employment exchange has been fluctuating between 2498 in 2011 to 3540 in 2015. In the year 2015, 3540 ST candidates were registered of which, 2625 were placed in the jobs. The total numbers on live register were 3691 in 2015.



The placement of the ST candidates to the live register was 71% in 2015. It was however, 29% in 2013.

The registration of SC candidates was 1931 in 2011. It increased to 1946 in 2015. The total number of SC candidates on the live register was 3141 in 2015. Moreover, 1269 SC candidates were placed in jobs in 2015.

In order to achieve inclusive development, the youths from the vulnerable section of the society would require access to quality higher education. It is necessary to ensure that such facilities are made easily accessible.

Table – 4.30

Registration and Placement of Scheduled Castes and Scheduled Tribes Candidates on Employment Exchange in Bharuch District, Year 2011 to 2015

Year	Registration	Placement	Live Register
Scheduled Tribes			
2011	2498	1493	4315
2012	2668	1438	4802
2013	2325	1240	4344
2014	3588	2696	3970
2015	3540	2625	3691
Scheduled Casts			
2011	1931	1290	3333
2012	2225	1472	3364
2013	2332	1385	3194
2014	1704	958	3145
2015	1946	1269	3141

Source: office DET, Bharuch

Focus on skill development and employability of youth and workers in the district.

Industrial Training Institutes and Training:

As analysed above, Bharuch district is experiencing rapid growth in investment and employment in industry and infrastructure sectors. In most of these activities, a wide variety of engineering skills and technical capabilities at various levels will be in demand.

It is a welcome development that the vocational training and skill development infrastructure in the district is quite comprehensive and spread out across talukas in the district. The vocational training capacity in the government alone is 45606 seats and 90 % of the seats are filled every year.

There are also 532 seats in grant in aid institutes and 840 seats are available in self-financed institutes in the district.

Moreover, the government has set up Kaushalya Vardhan Kendra (KVKs) in 5 talukas. There are 7 KVKs with the training capacity of 3500 and 50 % of them are women trainees.

Training of Local youth in Developing taluka - Valia:

Under the Scheme, 100 unemployed youths were given training in fire safety and security course. The training was given by Gujarat Lok Sewa Charitable Trust managed by Police Recruitment Training School, Panchmahal. The trainees were given training in Rifle use, horse riding, Yoga, four wheeler driving, swimming and personality development etc. 72 out of these 100 trainees were placed in jobs with a monthly salary of Rs 6200. This is an indicative example.

Status of Air and Water Pollution:

The Gujarat Pollution Control Board in Association with the industry association in GIDC, Anklesvar, Panoli and Jhagadia have taken various measures to control water and air pollution. These are installation of multi effect evaporators, RO plants for water purification for reuse and recycling of water etc.

There is also third party monitoring mechanism which imposes penalty on violators. In these assets necessary equipments to control the air pollution are also installed. Moreover, a common facility of incerination to treat hazardous waste is also operational.

These measures have involved the investment of Rs. 580 crores. It is claimed these measures have helped to reduce air and water pollution substantially. However, the information on out come indicators such as the actual status and the trend indicates that it still continues to be a big challenge.

Under the NAMP and SAMP projects implementation, the quality of air is measured and the average values of different pollutants is measured and published.

At Meghmani Organics Limited, GIDC, Ankleshwar the values of the different pollutants under NAMP has shown marginal decreased or have remain unchanged between 2008 to 2011.

Under SAMP, annual average of Ambient air quality at Piraman gram panchayat, Piraman, taluka Ankleshwar also shows the situation of no change over a period of time.

In Ankleshwar, Panoli and Jhagadia industrial estates, industrial affluents and polluted water are discharged in to Amlakhadi area through underground pipeline.

The industrial affluents are initially treated at the unit / industrial cluster level for which this industrial estates have designed their own system and have developed a framework for environmental improvement at the cost of Rs. 83.66 crore. They are also incurring a cost of Rs.15 crore per month to operate the system.

The initially treated water is further treated at Amlakhadi and then it is transported by offshore and onshore long distance pipeline in to the sea at a specified location for discharging the water.

This system became operational after 2006. Prior to 2006, there was no further scientific treatment of industrial discharges. As a result the pollution level at Amlakhadi was high as per the different types of indicators values.

This revealed in the tables below:

Table:- 4.31 Annual Average of Ambient Air Quality under NAMP at Meghmani Organics, GIDC, Ankleshwar.

Location	Year	Average Values			
		RSPM	SPM	SO2	Nox
Meghmani Organics Limited, GIDC, Ankleshwar	2008	107.4	213.7	21.98	27.6
	2009	91.85	183.06	21.31	27.48
	2010	81	165.39	18.16	24.68
	2011 (up to May)	108.8	220.87	20.33	29
		PM 10	**PM2.5**	**SO2**	**Nox**
	2011 (From June)	88.52	26.31	16.46	25.2
	2012	101.82	33.17	17.44	25.91
	2013	87.44	26.91	15.49	22.3
	2014 (up to March)	82.6	27.92	16.44	18.55

Source: GPCB, Bharuch

Table :- 4.32
Annual Average of Ambient Air Quality under SAMP at Piraman Gram Panchayat, Ankleshwar.

Location	Year	Average Values			
		RSPM	SPM	SO2	Nox
Piraman Gram Panchayat, Piraman, Ankleshwar	2008	75.85	151.17	14.3	22.09
	2009	79.18	159.09	13.7	21.58
	2010	78.52	161.6	13.31	21.85
	2011 (up to April)	85.73	177.63	15.15	24.8
		PM 10	**PM2.5**	**SO2**	**Nox**
	2011 (From May)	77.26	22.56	12.55	21.94
	2012	81.3	25.59	11.89	20.64
	2013	79.37	23.86	12.31	18.5
	2014 (up to March)	74.88	26.23	12.52	17.71

Source: GPCB, Bharuch

Table:- 4.31
Yearly data on status of water pollution
Yearly Average Data

GPCB data for FETP outlet				CPCB data for FETP outlet			
Year	COD, mg/l	BOD, mg/l	Amm-N, mg/l	Year	COD, mg/l	BOD, mg/l	Amm-N, mg/l
2008	1757.37	426.77	638.14	**2008**	2168	570.2	665.6
2009	1525.33	479.13	673.08	**2009**	2182.6	449.4	635.8
2010	1257.15	317.15	567.12	**2010**	1164.2	295	608.4
2011	729.3	178.5	311.56	**2011**	613.5	169.5	259.25
2012	551.3	135	140.6	**2012**	522.67	68	146.43
2013	446.45	63.64	66.56	**2013**	405.25	57.25	111.5
2014 (till march)	480	79.67	86	**2014 (1st Qtr)**	837	52	186.9

Source: GPCB, Bharuch

Yearly Average Data

GPCB data for Amlakhadi				CPCB data for Amlakhadi			
Year	COD, mg/l	BOD, mg/l	Amm-N, mg/l	Year	COD, mg/l	BOD, mg/l	Amm-N, mg/l
2008	686.42	178.83	79.36	**2008**	1041.22	302.89	130.36
2009	441.42	114.75	52.67	**2009**	151.75	42.75	21.87
2010	99.58	25.18	20.53	**2010**	135.5	38	23.33
2011	71.33	11.28	11.92	**2011**	127.17	54.2	50.3
2012	63.17	16.06	9.47	**2012**	123	25.67	11.97
2013	55.83	16.92	6	**2013**	115.58	29.28	13.29
2014 (till march)	59	17.33	9	**2014 (1st Qtr)**	80	26	7

Source: GPCB, Bharuch

Livelihood: Way Forward

Agriculture:

- Agriculture and allied activities continue to be the principal source of livelihood and work for a majority of the people in the district.
- Agriculture has made significant progress so far - crop diversification, increase in yield etc.
- However, the challenges are gaps in the yields in the major crops as compared to the yield levels in the state. The yield is a function of several variables such as soil type, quality of land, balanced use of fertilizers, production and availability of quality seeds, water logging and secondary salinization and lack of knowledge of farm practices, irrigation etc.
- In order to meet some of these challenges it is suggested to expand / to setup new soil testing laboratories, distribution of soil health cards and advisory services in agriculture. Krushi Mahotsavs have created necessary conditions for sustainable further actions in this regard.

- Production and distribution of certified seeds is of equal importance. The lead may be provided by the government by creating enabling environment and set up some models. The co-operative sector and the private sector can play important role in setting up Seeds Farms and in transfer of technology.
- There are areas where area under irrigation is low, while in other areas there is overuse of water from canals for irrigation.
- Adoption of water economizing techniques in horticulture in particular, is feasible and even the possibility of cross subsidization of irrigation facility between the marginal farmers on the one hand and the large farmers on the other can be also examined.
- Agriculture Produce Market Committee (APMCs) have an important role to establish linkages at farm level. It can also set up exhibition stalls for the diplay and demonstrations of new technology and equipments.
- Considering agro climatic conditions in different parts of the district, experimental cum demonstration farms can be setup to help in transferring new technology, productivity gains, production of seeds etc. The agricultural university can contribute in a big way.
- The government may identify farmers who have achieved good results in yields, farm practices in different crops in different talukas.

The profile of such achievers farmers may be put on the web site for the benefit of others. Such achiever farmers can also help in agricultural extension services.

Horticulture has the potential to generate high and ready cash income. The marginal farmers and land less workers can be assisted with seeds kits, micro irrigation, green house technology etc.

Animal Husbandry:

- Generally animal husbandry is a subsidiary activity along with farming. The composition of the livestock in the district shows that apart from cows and buffaloes, there are large number of goats and poultry birds. The later have good potential for poverty alleviation.
- Hence, the issues such as breed improvement, artificial insemination, supply of pedigree bulls, developing stud farms, mobile animal healthcare units, training of stock man and increase in the number of seats in certificate and diploma courses in veterinary and dairy courses need to be examined.
- Fishery in the district is mainly inland in villages / panchayat ponds which are taken on lease.
- This activity generates low income self employment and it can be strengthened with the development of necessary infrastructure.
- Similarly, poultry as an occupation has commercial dimension as well as is a source of self employment for BPL families in particular. The later in particular requires a multiple support system if it is to be sustainable and low risk activity.

Non-Farm unorganized sector:

- Swarn Jayanti Swarojgar Yojana as well as Vajpayee Bankable Scheme of Government, as per the available data, indicates that targets, number of applicants for bank loans and number of sanctioned loans and disbursement are working well. Moreover, the number of applicants and the amount of average loan has doubled over year.
- We get the impression that there is good coordination between the district industry centre and the banks. The loan proposals which are forwarded to DIC and further forwarded to the banks, have the high rate of acceptance. However, the targets as well as the average loan amount may have to be upscaled in view of the emerging new opportunities for enterprises.
- Special government initiatives of Van Bandhu Kalyan Yojana, Sagar Khedu Sarvangi Vikas Yojana, Garib Kalyan Mela and Manav Kalyan Yojana: The data suggest that these schemes are implemented as per the objectives – as adequate financial provisions are already made and sufficient expenditure incurred almost under each category.

Focus on high school and higher secondary education:

- In Vanbandhu Kalyan Yojana, we suggest that the government may consider to have even much greater focus on high schools and higher secondary education of the boys and girls of the Vanbandhu families. We may have an objective under the Yojana to ensure that, a majority of boys and girls of Vanbandhu families have access to high quality high schools and higher secondary schools education. This would enable them to have opportunities for professional and technical higher education in jobs. Perhaps this is the most preferred approach by which the young generation of Vanbandhu can enter the main stream development of the state and enjoy the fruits of development.

Large scale opportunities emerging in industrial employment:

- Bharuch district is emerging as a major industrial hub in petroleum, chemicals, petrochemicals and infrastructure development. This will provide large scale employment opportunities to educate and skill manpower. Bharuch already has good training infrastructure.
- We suggest the government initiate a comprehensive study on emerging skill requirements in different occupations and industries and use them for necessary measures to upgrade or expand training facilities. Particularly for the youth from the vulnerable social groups like Vanbandhu, Salt workers and Sagarkhedu.

Counselling on emerging new skills:

- The Employment service of the state government can be pro-active in providing information and counselling on emerging vocational skills to students in high schools and higher secondary schools in the district.

Abbreviations

BPL	Below Poverty Line
BRGF	Backward Regions Grant Fund
GAD	General Administration Department
GCA	Gross Cropped Area
Ha	Hectare
HSC	Higher Secondary Certificate
IAY	Indira Awas Yojana
IMR	Infant Mortality Rate
ITI	Industrial Training Institute
MMR	Maternal Mortility Rate
NGO	Non-Governmental Organisation
NREGS	National Rural Employment Guarantee Scheme
OPD	Out Patient Department
PHC	Primary Health Centre
SAY	Sardar Awas Yojana
SC	Scheduled Caste
SSI	Small Scale Industries
SSVY	Sagarkhedu Sarvangi Vikas Yojana
ST	Scheduled Tribe
Std	Standard
T.B	Tuberculosis
UNDP	United ations Development Programme
ANC	Antenatal Care
APL	Above Poverty Line
ASHA	Accredited Social Health Activist
DISE	District Information System for Education
DRDA	District Rural Development Agency
GDP	Gross Domestic Product
HDI	Human Development Index
HDR	Human Development Report
ICDS	Integrated Child Development Services
JSY	Janani Surksha Yojana
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
PDS	Public Distribution System
RSBY	Rashtriya Swasthya Bima Yojana
SDP	State Domestic Product
SNP	Supplementary Nutrition Programme
SRS	Survey Registration Scheme
SSA	Sarva Shiksha Abhiyaan
TFR	Total Fertility Rate
TSC	Total Sanitation Campaign
WFPR	Workforce Participation Rate

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Government Centre Press, Gandhinagar.