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District Human Development Report

NAVSARI

Gujarat Social Infrastructure Development Society (GSIDS)
General Administration Department (Planning)
Government of Gujarat
Sector-18, Gandhinagar

सत्यमेव जयते
Government of Gujarat

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DISTRICT HUMAN DEVELOPMENT REPORT: NAVSARI

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Designed by	Tejal Parmar, SPAC, GSIDS

The report is prepared by Shri Jairambhai Patel Institute of Business Management, Gandhinagar under a tripartite MoU between Member Secretary, the Gujarat Social Infrastructure Development Society (GSIDS), District Collector, Porbandar and Shri Jairambhai Patel Institute of Business Management (formerly known as NICM) (Post Graduate Centre of Gujarat Technological University), Gandhinagar.

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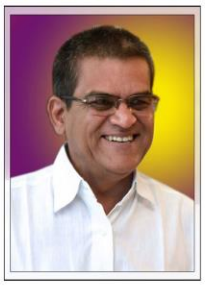
Government of Gujarat

Nanubhai Vanani



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MESSAGE

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

I compliment the United Nations Development Programme under Planning Commission for collaborating with the State Government in preparation of the District Human Development Report of Navsari District, which provides an objective, in-depth analysis of the present status of various aspects of human welfare in the district. I also compliment the GSIDS, General 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.

(Nanubhai Vanani)

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

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PREFACE

Human development is a well-being concept within a field of international development. It involves studies of the human condition with its core being the capability approach. United Nations Development Programme (UNDP) has been defining human development as "the process of enlarging people's choices", said choices being allowing them to "lead a long and healthy life, to be educated, to enjoy a decent standard of living", as well as "political freedom, other guaranteed human rights and various ingredients of self-respect. The prime objective of the human development approach is to put people at the Centre of development with their active participation in the development process.

Human Development approach broadly advocates for widening up of people's choice and the attainment of a decent standard of living. Three essential choices of life are: to lead a long and healthy life, to acquire knowledge and to have access to the resources needed for a decent standard of living. Other choices highly valued by many people, range from political, economic and social freedom to opportunities for being creative and productive and enjoying self-respect and guaranteed human rights (HDR, 1990) of the society in the development process.

Since independence, especially in the last three decades of development planning, there has been noticeable progress in Navsari district especially in respect of poverty eradication, and in the fields of education, health, employment and people's participation in development process. Nevertheless, certain areas demand active governmental actions and a participative civil society to ensure that the most vulnerable groups benefit from the development process.

By focusing the study on Navsari District, a parallel effort has been made to build the institutional capacity in the district for human development based planning at district-level. The Navsari DHDR is thus expected to serve as the future foundation for formulating a comprehensive District Human Development Plan for Navsari District.

Although challenging in conception, the work of preparing the DHDR carried the immense reward of building a living bridge between formal academic analysis and the development aspirations of the people in this historically significant region of Gujarat. It is therefore hoped that the DHDR will contribute significantly to future development and planning activities in the district of Navsari.

April 2016
Navsari

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K. D. Chandnani
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FOREWORD

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 develop 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 Navsari 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.

(K. D. Chandnani)

Acknowledgement

Getting formal invitation for preparing District Human Development Report Navsari from GSIDS, Gandhinagar, was a big challenge as well as a huge opportunity to the Department of Management, **Shri Jairambhai Patel Institute of Business Management and Computer Applications, Gandhinagar**. We whole heartedly took the responsibility and devoted our relentless efforts in the preparation of DHDR. We express our gratitude to **Mr. K. D. Vashi, Director, GSIDS** for assigning such a high valued task to our institution.

The process of preparation of this report has been an enriching experience for the core team. In the process, we have received help, guidance, advice and suggestions from many quarters. We are deeply indebted to **Ms. Remya Mohan Muthadath, District Collector, Navsari**, for her dynamic leadership, generous administrative supports and suggestions especially in the final stage of preparing the report.

We express our sincere gratitude to **Mr. K. B. Thanki**, **District Planning Officer,** Navsari for his assistance and constant encouragement during the period of the study. He has been a constant source of inspiration for meaningful conclusion of the report. The preparation of the report followed a number of workshops and presentations both at the district and the State level. The district level workshops were held at Navsari involving our team, officials of various line Departments specifically to identify the thrust areas of the study and the data gap. Two State level presentations were held on January 16,2016 and March 23,2016 at the Department of Planning, Government of Gujarat in the presence of **Honorable Principal Secretary (Planning), Ms. S. Aparna** and various government officials.

We take this opportunity to express our deep sense of gratitude to **Mr. K.D. Chandanani, District Development Officer**, Navsari and **District Statistical Officer Mr. G.M Patel**, Navsari for constantly monitoring the ongoing work on the DHDR and enriching the analysis by providing required data and constructive comments. We are grateful to **Ms.Tejal Parmar, SPAC, GSIDS, Gandhinagar** who gone through the draft report meticulously and was always ready to extend her cooperation to us for finalizing the work.

We thankfully acknowledge the cooperation of various line departments of Navsari district administration such as Departments of Health, Education, Agriculture, Land, Forest, Agri-irrigation, Animal husbandry, etc.

We hope the analysis and findings of the report would be useful to the planners and policy makers for adopting appropriate policy actions so as to achieve a balanced and sustainable human development for Navsari District. Members of the District Core Committee, participated wholeheartedly in discussions on the Draft DHDR, contributing their long experience and intimate personal knowledge of the district to the synthesis of a potential human development approach that can be adopted in future in district planning exercises in Navsari. Extensive cooperation was also received from officers of the District Administration and the members of many local NGOs, during DHDR project work and during discussions on the Draft DHDR.

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Executive Summary

Navsari is one the progressive districts of the Gujarat State. Geographical area of 2246 sq. Km with 5 talukas viz. Navsari, Jalapore, Gandevi, Chikhli and Vansda. There are a total of 392 inhabited villages in these 5 talukas put together. As per the Census of India (2011) Navsari district saw a decadal growth of 8.15% in the total population in the year 2011 over 2001. About 70% of the population still resides in the rural areas of the district. The sex ratio for the district in 2011 stood at 961, a marginal improvement over 2001 figure. Navsari ranks 5th among 26 districts of Gujarat state with regards to the sex ratio. In terms of basic amenities, the district fares well with about 91% of the households having access to electricity and about 90% having access to drinking water through either tap, handpump or tubewell. Around 57% of the households have latrine facility within the premises. This is at par with the state figures.

There is a strong linkage between a nation's economic development and the literacy level prevalent among its nationals. Literacy level in a society is an important indicator of how the society is progressing. Navsari ranks as the 5th most literate district of the Gujarat State with the overall literacy rate of 83.90% in the year 2011. The gender gap as well as the regional gap between rural and urban locations in terms of literacy is also falling in 2011 as compared to 2001. Literacy levels across all the 5 talukas of the district has improved in 2011 as compared to 2001 there by indicating that there is less disparity among the talukas in terms of education and literacy levels. In terms of literacy level among the SC and ST population, the district fare well as compared to other districts in the state.

In terms of school infrastructure and intellectual capital, the district is progressing at a relatively moderate rate. Over the period 2009-2014, there has been a marginal increase in the number of schools in the district, mainly accounted by the increase in number of private schools. Almost 90% of the schools in the district have access to electricity and about 60% of them have computer lab. The total number of teachers in schools in Navsari district as a whole has increased from 7464 in 2009-10 to 8358 in 2013-14, a modest increase 894 teachers over a period of 5 years. Number of enrolments in the schools has seen a fluctuating trend with a particular range. Maintaining a high level of retention at the primary level is a challenge with the rate at about 82% in the year 2012. A good sign is in terms of a very low drop-out rate in the year 2012 which needs to be maintained.

The Constitution of the World Health Organization, which came into force on April 7, 1948, defined health "as a state of complete physical, mental and social well-being."
Most recently, three types of definition of health seem to be possible and are used. The first is that health is the absence of any disease or impairment. The second is that health is a state that allows the individual to adequately cope with all demands of daily life (implying also the absence of disease and impairment). The third definition states that health is a state of balance, an equilibrium that an individual has established within himself and between himself and his social and physical environment.

A health system comprises of various elements such as infrastructure, human resources, data system and financial systems. Adequate infrastructure which includes buildings, equipment, supplies and communications equipments forms an integral part of health services. The concept of primary health care lead to a rapid expansion of outpatient service facilities in the form of Primary Health Centre (PHCs), Dispensaries and Sub Centres (SC), with a view to take health care to the community. Developments in medical technology have led to more and better inpatient care facilities at nursing homes and hospitals that include super-specialty care and sophisticated equipment for diagnosis and treatment.

The quality of health care at the grassroots level depends on numerous factors like the size of the village, access to the nearest road or railway station, the cost of transportation, the time taken for travel to the Community Health Centre or PHC or sub-centre, the availability of doctors, nurses (ANMs) and para medical staff at these health centres, the timely availability of drugs, the physical infrastructure in terms of buildings, drinking water and toilet, the supervision of the staff, the rate of absenteeism and above all, the management of health facility in the public sector.

In the case of health the term infrastructure takes on a wider role than mere physical infrastructure. Healthcare centres, dispensaries, or hospitals need to be manned by well trained staff with a service perspective. In chapter 3 the current conditions of physical infrastructure, staff, access, and usage are laid out here before identifying critical gaps and requirements in infrastructure and services. Here, we shall discuss the health care services in Navsari district. The chapter has been organized in the following manner. In section 3.2, we shall describe the Performance health indicators of Navsari district. Section 3.3 focuses upon health care infrastructure in the district. From health sub-centre to district hospital, there is an elaborate arrangement for providing state sponsored medical services to the people at large. To what extent the medical need of

the people could be met by the government health infrastructure is an issue which has discussed in this section. Human resources availability at Healthcare facilities is discussed in Section 3.4. In section 3.5, a thorough analysis on maternal health is the centre of discussion followed by Section 3.6 in which performance of Chiranjeevi Yojana is being discussed. Section 3.7 discusses about Project Ankur. ICDS is discussed in Section Immunization and childcare related issues with a focus on the problem of malnutrition that a section of the children in the district suffers from have been discussed in Section 3.8 followed by ICDS in Section 3.9. Issues related to Malnutrition is discussed in Section 3.10 Different schemes and flagship programmes of the Government are further discussed in remaining sections. Overall SWOC analysis (Strength, Weaknesses, Opportunities and Challenges analysis) along with conclusion is carried out in Section 3.16.

The detailed discussion of Healthcare scenario of Navsari indicates that there is an immediate need is for an effective management of the health delivery system, focusing on CHCs, PHCs and Sub-Centres, especially in the "tribal belt." One important point highlighted in Chapter 3 is findings related to hospitals in remote areas. The availability of the hospitals in remote areas is a major challenge in increasing utilisation of different healthcare schemes. New demand demonstrates that the establishment of additional hospitals even in these areas. To successfully implement a complex flagship programmes in Navsari district, capacity building is necessary at all levels. Building the managerial and conceptual capacities of the organization and individuals involved has proved to be a major challenge

Following are some recommendations to improve healthcare services in Navsari:

a. Management capacity should be improved by creating additional permanent posts at different facilities at the directorate to plan, implement successful health programmes.
b. Improvements and maintenance of the health infrastructure of the existing infrastructure are necessary to provide good quality healthcare services.

With new initiatives, such as training of doctors for specialized skills and public-private partnerships for improving health services, Navsari is fast emerging as one of the progressive Districts of Gujarat. The goal of reducing maternal mortality and infant mortality can be achieved only by creating awareness among policy-makers, implementing evidence-based interventions and through mobilization of professionals and society. The speed of implementation of flagship programmes in health where

public participation is required depends on strategies adopted to ensure skilled professionals in healthcare, the extent of accountability of professionals responsible for overall health, and the willingness of politicians to support maternal health, child health and adolescent health and family planning programmes by allocating resources to strengthen the health system.

The total reported area of Navsari is about 220000 Sq.km. Out of which 11.41% is forest area, 8.95% is under non- agricultural use, 2.42% is grazing land and 57.27% of total reported area is net cropped area. As per 2011 census, 69.23 % population of Navsari districts lives in rural areas of villages. Since majority of the workforce is engaged in agriculture sector, it is essential that this sector develops to ensure sustainable earnings to the people engaged in the primary sector. Geographically, Vansada is the largest taluka sharing 27.26% of district area while Gandevi is the smallest taluka sharing 12.93% of area of district. Vansada shares maximum forest area (80.78%) of the district, while Navsari do not share forest at all. Chikhali shares largest net cropped area (32.82%) of the district, while Gandevi shares least portion (14.33%) of net cropped area of the district. As per the latest data available cropping intensity of Gandevi is highest and Jalalpore is lowest. The total cropping intensity of the district is 125%. The cropping intensity of each taluka has increased compared to previous year except Jalalpore .There is no major change in land holding pattern of land holders in Navsari as per the data except large land holding pattern. The major vegetable grown in the districts are French bean, cabbage, ladyfinger, Cucurbits and cluster bin. The major fruits grown in the districts are Mango, chiku and bananas. From 2009 to 2013 the yield of rice of Navsari is more as compared to Gujarat. Navsari taluka has highest share of irrigated area where as Vansada taluka has lowest share of irrigated area. Vansada Taluka contributes the highest work participation (52.6%) while Jabalpur Share the lowest work participation (40%) in the Navsari District. The male participation rate of Chikhali is higher and female participation rate of vansada is higher in the district. The total live stock in the district is augmented by 32.5 % and total poultry in the district is enlarged by 43% as compared to 2007.The highest numbers of BPL families are in the Chikhli taluka and the lowest numbers of BPL families are in the Jalalpore taluka. Cotton Textile, Wood based furniture enterprise, metal and mineral based enterprise, chemical and paper based enterprises are growing sector in Navsari district. The growth of dairy industry and sugar industry are incredible. The below poor line families are increasing in the district. Farmers are ready to adopt the new technologies in the sector and they are very progressive.

SUMMARY..... I

ABBREVIATIONS IX

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ABBREVIATIONS

CBR:	Crude Birth Rate
CDR:	Crude Death Rate
NRGP:	Natural Rate of Growth of Population
PGI:	Performance Gap Indicator
PHC:	Primary Heath Centres
CHC:	Community Health Centre
SC:	Sub Centre
FRU:	First Referral Unit
ICDS:	Integrated Child Development Services
AWW:	Aanganwadi Workers
SN:	Supplementary Nutrition
PSE:	Pre School Education
NHED:	Nutrition and Health Education Day
OPD:	Out-Patients Department
RCH:	Reproductive and Child Healthcare
NABH:	National Accreditation Board for Hospitals and Health Care Providers
NABL:	National Accreditation Board for Testing and Calibration Laboratories
AYUSH:	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy
ANM:	Auxiliary Nurse and Midwives
FHW:	Female Health Worker
MCH:	Maternal and Child Health
NRHM:	National Rural Health Mission
JSY:	Janani Suraksha Yojana
ANC:	Antenatal Care
TT:	Tetanus Toxoid
VHND:	Village Health and Nutrition Day
NFHS:	National Family Health Survey
CY:	Chiranjeevi Yojana
CI:	Cropping Intensity
RKVY:	Rashtriya Krishi Vikas Yojana
IWMP:	Integrated Watershed Management Programme
WPR:	Work Participation Rate
KVK:	krishi vigyan Kendra
TDP:	Tribal Development Program
ATMA:	Agriculture Technology Management Agency
CIG:	Common Interest Group
NAIP:	National Agricultural Innovation Project
ICAR:	Indian Council of Agricultural Research
MSMED:	Micro, Small and Medium Enterprises Development
DMIC:	Delhi Mumbai Industrial Corridor
BPL:	Below Poverty Line
NABARD:	National Bank for Agriculture and Rural Development
SHG:	Self Help Group
ANC	Ante Natal Care
ANM	Auxiliary Nurse Midwife
APL	Above Poverty Line
ASHA	Accredited Social Health Activist
ATMA	Agricultural Technology Management Agency
BCG	Bacille Calmette Guérin Vaccine for preventing tuberculosis
CAGR	Compound Annual Growth Rate
DPT	Diphtheria, Tetanus and Pertussis (Vaccine)
FHW	Female Health Workers

IPHS	Indian Public Health Standards.
LHV	Lady Health Visitor
LSCS	Lower segment Cesarian Section
MMR	Maternal Mortality Rate
MNREGA	Mahatma Gandhi National Rural Employment Gurantee Act
NER	Net Enrolment Ratio
OBC	Other Backward Caste
OP	Only Primary
OPD	Out Patient Department
OUP	Only Upper Primary
P, UP	Primary with Upper Primary
P, UP,HS	Primary with Upper Primary, Secondary / Higher Secondary
SC	Scheduled Caste
SCR	Student-Class Ratio
SHG	Self Help Group
ST	Schedule Tribal
SWOC	Strengths, Weaknesses, Opportunities, Challenges
TASP	Tribal Area Sub Plan
UNDP	United Nations Development Programme
UP,HS	Upper Primary with Secondary / Higher Secondary
WHO	World Health Organization

CHAPTER – I

INTRODUCTION

1.1 BRIEF DISTRICT PROFILE

Navsari district, located on the eastern side of the Arabian Sea, is one of the most pleasant and historical districts of Gujarat state. Before freedom Navsari was the main city of old Vadodara State. From 1st May 1949, Navsari had been included in Surat district and in 1964 in month of June, Surat district was reformed and Navsari was included in Valsad district. Presently, since October 1997, Navsari as a separate district has come into existence. The district is bounded by Surat district in the North, Dang district in the East, Valsad District in the South and Arabian Sea on the western side. Navsari is an important station of broad gauge railway line between Mumbai and Ahmedabad. Through Ahmedabad, Mumbai National Highway No.8, Navsari is connected to big cities of Gujarat.

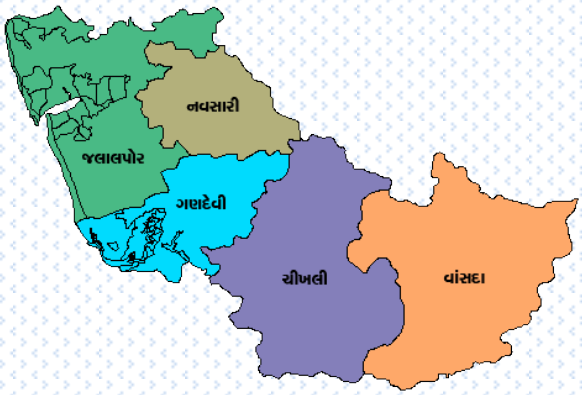
According to old writing it can be seen that Navsari was famous in 7th century. In 671 AD known as "Samana Navsarika" this region was ruled by Chalukya dynasty (Vavshaj Laat Branch). At that time Shila Dritniya Guru Naavdrdha is known to have stayed in present Naag talavdi area. Due to this area, it became famous as "Naag Mandal" and gradually with passage of time this district present name "Navsari" came.

In ancient times Navsari was known for its trade and industry and was considered as a famous port of western cost of India. Navsari's weaving work was praised and "Baasta" means "Jug" became famous and foreign traders visited Navsari to know about weaving. Navsari also become famous for "Jardoshi" work (Jari embroidery).

Navsari District covers a geographical area of 2246 sq. Km with 6 talukas viz. Navsari, Jalalpore, Gandevi, Chikhli, Vansda[1] and Khergam[2]. For the administrative purpose, Gujarat has a three-tier arrangement: Gram Panchayat, Taluka Panchayat and District Panchayat. There are a total of 392 inhabited villages in these 6 talukas put together. A detailed bifurcation of number of gram panchayats and the number of villages in each of the 5 talukas is given in the table 1.1.

[1] As per Census of India, 2011.
[2] For the purpose of analysis, in this report only 5 talukas (other than Khergam) have been considered.

FIGURE 1.1: TALUKAS OF NAVSARI DISTRICT



Source: www.mapsofindia.com

TABLE 1.1: TALUKA-WISE NUMBER OF GRAM PANCHAYATS AND NUMBER OF VILLAGES

Sr. No.	Taluka (Panchayat)	No. of Gram Panchayats in Taluka	No. of villages in Taluka
1	Navsari	62	70
2	Jalalpore	65	72
3	Gandevi	65	65
4	Chikhli	89	90
5	Vansda	86	95
	TOTAL	**367**	**392**

Source: Navsari District Panchayat Website (www.http://navsaridp.gujarat.gov.in)

1.2 DEMOGRAPHIC DETAILS

1.2.1 *Population Composition*

As per the Census of India (2011) Navsari district saw a decadal growth of 8.15% in the total population in the year 2011 over 2001. This is the lowest growth rate shown by a district in whole of the Gujarat State. The total population figure for 2011 stands at 1,329,672 and that for the 2001 was 1,229,463, a modest increase of 1,00,209 in a decade. On the other hand, the population of Gujarat state saw a growth of 19.28% in the same period. A detailed

In the year 2011, Schedule Castes accounted for about 2.67% of the total district population for Navsari and the Schedule Tribes summed up to about another 48%. For Gujarat State the figures stood at 6.7% for Schedule Castes and 14.8% for Schedule Tribes.

break-up of the district population into various talukas is given in Table 1.2. The population density for the district is 592 per square kilometre (Census of India, 2011). As per Census 2011 figures, the population of SC and ST put together for Gujarat state is 12,991,621 and that for Navsari district is 6,75,123. Chikhli and Vansda taluka have the highest incidence of Schedule Tribe population, 71% and 91% respectively. This is also evident from the fact that these two talukas have the least urbanization among all the 5 talukas in Navsari district.

TABLE 1.2: TALUKA-WISE TOTAL POPULATION & DECADAL CHANGE

Taluka	2001	2011	Decadal Change (%)
Navsari	274867	311238	13.23
Jalalpore	220003	228065	3.66
Gandevi	240291	249264	3.73
Chikhli	293014	309877	5.76
Vansda	201288	231228	14.87
Dist. Total	**1229463**	**1329672**	**8.15**

Source: Census of India (2001 & 2011)

Looking at the male/female composition of the total population for the district, it can be seen that there has been a marginal improvement in the sex ratio for the district in 2011 (961) over 2001 (955) where as for Gujarat as a state the sex ratio has shown a fall from 920 in the year 2001 to 919 in the year 2011. Navsari ranks 5th among 26 districts of Gujarat state with regards to the sex ratio[3]. All talukas except Jalalpore has shown improvement in the sex ratio figure over the decade 2001-2011. One interesting point to note here is that the sex ratio for the schedule caste and the schedule tribe population for the district as a whole are much better than that of the overall sex ratio for the district. As per the Census of India 2011, it stands at 975 and 1001 for the SC and ST population respectively. Taluka-wise overall sex ratio and that for SC and ST population is given in Table 1.3.

[3] *Ranking for the year 2011 (as per Census of India 2011).*

TABLE 1.3: STATE/DISTRICT/TALUKA SEX RATIO (TOTAL, SC & ST) AND OVERALL URBANIZATION RATE

Sex Ratio (Females per '000 males)						
State / District / Taluka	Total Population		SC Population	ST Population	Overall Urbanization (%)	
	2001	2011	2011	2011	2001	2011
State - GUJARAT	**920**	**919**	**931**	**981**	**37.36**	**42.60**
District - NAVSARI	**955**	**961**	**975**	**1001**	**27.36**	**30.77**
Navsari	931	944	964	1006	59.03	64.76
Jalalpore	927	909	973	978	36.31	40.34
Gandevi	959	970	1008	1004	36.32	37.91
Chikhli	970	980	949	995	2.37	2.27
Vansda	991	1001	1078	1008	0.00	6.09

Source: Census of India (2001 & 2011)

The district sex ratio for the child population (0-6 years) has also shown a marginal improvement over the decade from 915 in 2001 to 923 in 2011. This is starkly better than the same for Gujarat state which is 890 in 2011. Urbanization, though not a comprehensive one, is one indicator of the human development as people would move to urban locations for better living opportunities and career growth. The rate of urbanization in Navsari district has shown a marginal increase of 3.4% over the decade 2001-2011 but still a major portion of the population, about 70%, still reside in the rural area of the district. Among the 5 talukas, Navsari taluka has the highest rate of urbanization, about 65% as per the Census of India (2011), and Chikhli taluka has the least number of people residing in the urban area of the taluka. Table 1.3 gives details of the urbanization rate for the 5 talukas of Navsari district.

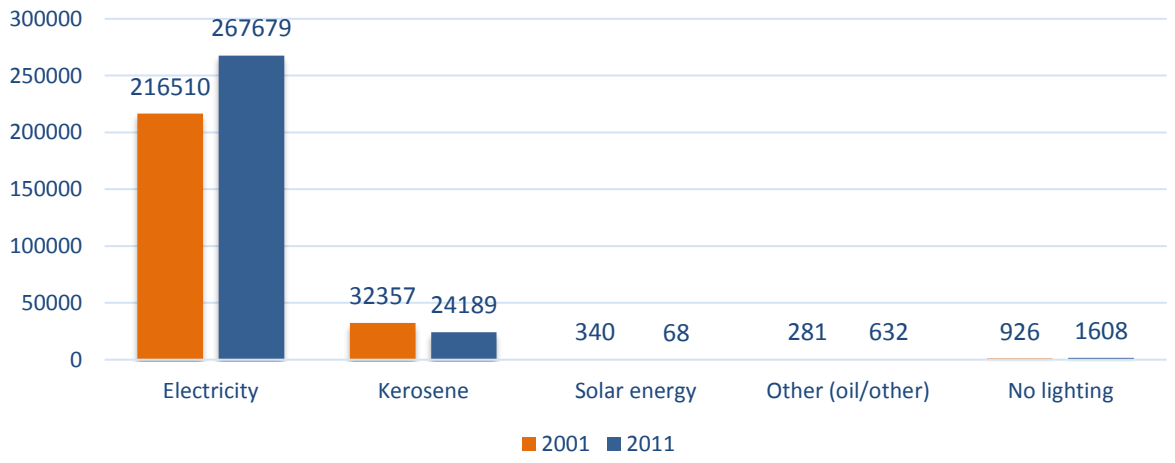
1.2.2 *Basic Amenities*

Electricity, drinking water and in-house latrine facility are few of the most basic needs of mankind. These are also good indicators as to how mankind (and the geographical unit – be it country, state or a district) is progressing. This section of the report will throw some light on how Navsari district has progressed with regards to making electricity, drinking water and in-house latrine facility available to its people. Decadal figures for the district are compared to see the growth/progress in the availability of these three basic amenities to the people of Navsari district.

The number of households in Navsari district has increased from 250414 in 2001 to 294176 in 2011, a growth of around 17.5%. This includes 203615 households in the rural part of the district and 90561 urban households.

FIGURE 1.1 shows the number of households using different lighting facility as the primary method of lighting their living place viz. Electricity, Kerosene, solar energy, Others (Oil or any other) and no lighting for the year 2001 and 2011. There is a fall in the number of households using Kerosene and solar energy as the primary source of lighting in the year 2011 as compared to 2001. This fall may be due to the fact that these household have now shifted to electricity as the main source of lighting because of electricity supply being made available in their respective locality.

Figure 1.3 Households using different lighting facility



Source: Census of India (2001 & 2011)

And this is very apparent from the fact that the addition to the number of households using other (oil/other) sources of lighting in 2011 as compared to 2001 is just about 350. Almost 100% of 43762 new households that have come up in the district in the decade 2001-2011 have been using electricity as the main source of lighting. Still about less than 0.5% of the households do not use any kind of lighting facility, of which majority are in the rural area of the district.

Latest data of March 2015, as per table no 1.4, show up a major addition in the number of domestic electric connection, for the district as a whole.

TABLE 1.4: URBAN AND RURAL ELECTRIC CONNECTION (DOMESTIC & INDUSTRIAL)

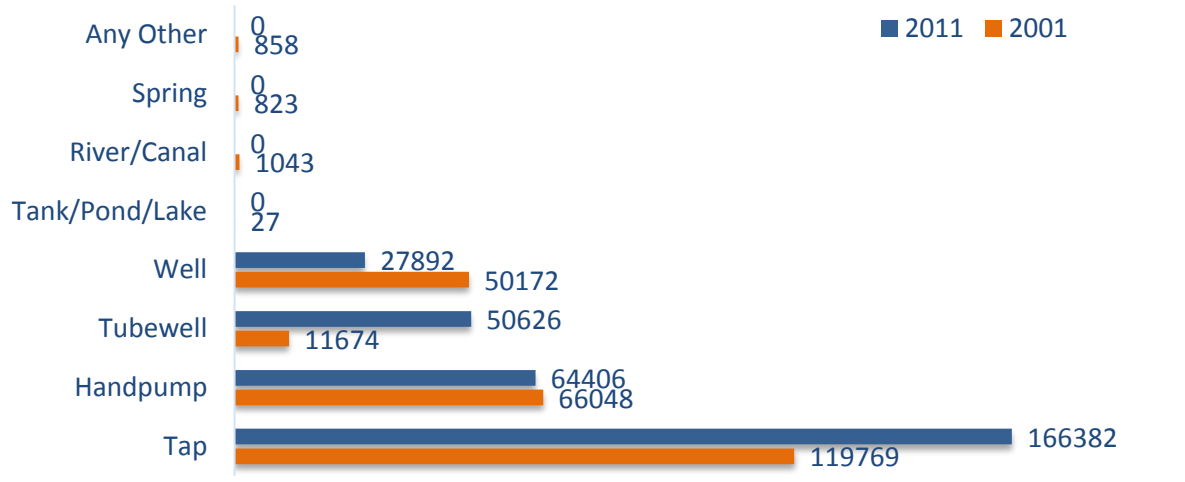
As on 31st March, 2015

CATEGORYWISE NUMBER OF ELECTRIC CONNECTIONS					
R/U	**Taluka**	**DOMESTIC**	**LT**	**HT**	**OTHERS**
Rural	Jalalpore	65907	682	18	5345
	Navsari	38850	798	49	5235
	Gandevi	35686	433	11	5036
	Vansda	36737	194	2	5691
	Chikhli	5495	33	0	1328
Total		***182675***	***2140***	***80***	***22635***
Urban		59000	2000		1000

Source: DGVCL, Navsari.

FIGURE 1.2 represent the change in the number of households using different sources of drinking water viz. Tap, handpump, tubewell, well, tank/pond/lake, river/canal, spring and any other, for the decade 2001-2011. There is about 24% increase in the number of households using tap water as the main source of drinking water in the year 2011. This indicates that more number of households is being connected to the water being supplied through the local municipality. Also there is a huge increase in the number of households using tubewell (borewell) as the main source of drinking water in the year 2011. Still about 1% of the households depend upon traditional sources of drinking water viz. tank/pond/lake, river/canal and spring.

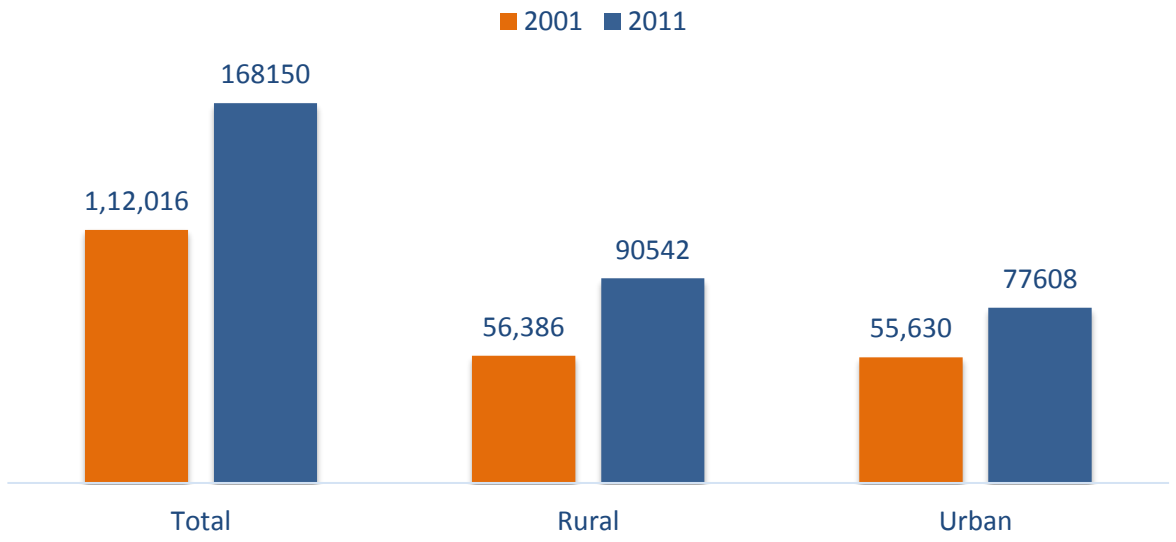
FIGURE 1.4: Households using different sources of drinking water



Source: Census of India (2001 & 2011)

With regards to the condition of the houses, out of the total of 294176 households in the district about 290595 households (about 99% of the total households) are in good & liveable condition. Breaking up the data with regards to urban and rural households, the figures are equally encouraging. Around 99% of the households have tiles, burnt bricks, stone/slate, asbestos sheets or concrete as the roof top material and about 62% household have them as flooring material as used while constructing the house.

Figure 1.5: Households having Latrine Facility within premises



Source: Census of India (2001 & 2011)

Having a latrine facility within the premises of the house is one of the basic necessities which not only has implication on the health and the wellbeing of the members of the Society but also takes care of the privacy concerns. Over the decade, the number of households in Navsari district, in rural as well as urban localities, having latrine facility within the premises, has increased. In 2001, out of the total households in the district about 45% had latrine facility within the premises whereas the same has increased to about 57% in 2011. About 44% of the rural households in the year 2011 have latrine facility within the premises as compared to 31% of them in the year 2001. Still a lot needs to be done in this regards as far as the rural area of the district is concerned. Majority of the people who do not have latrine facility in the house premises defecate in the open. FIGURE 1.3 summarizes the data with regards to the households having latrine facility within the premises for year 2001 and 2011 for Navsari District.

TABLE 1.5: APL TOILET BLOCK TARGETS AND ACHIVEMENT FOR LAST 5 YEARS.
PROJECT: SWATCH BHARAT MISSION (GRAMIN)

Sr. No.	Year	Targeted No. of toilets blocks to be build	No. of Toilet Blocks Built	Percentage achievement (b / c * 100)	Targeted Financial Allocation (Rs. Lakhs)	Actual Funds Utilized (Rs. Lakhs)
1	2010-11	7138	8720	122.16	89.23	109
2	2011-12	15561	1639	10.53	311.22	11.65
3	2012-13	13922	1966	14.12	278.44	14.97
4	2013-14	9250	7353	79.49	360.5	290.62
5	2014-15	20300	17818	87.77	933.8	819.63
Total		66171	37496	56.67	1973.19	1245.87

Source: District Rural Development Agency, Navsari.

Table 1.5 summarizes the targets and achievement done in terms of building toilet blocks in households that are above the poverty line (APL), for the year 2010 through 2015. In the 5 years period that is being considered, 66171 number of toilet blocks were targeted to be build under the Swatch Bharat Mission (Gramin) project in Navsari district, out of which around 37496 actually got built resulting in to 56.67% of the target being achieved. This was done with a total of Rs. 1246 lakhs of funds being spent toward the activity. Though the target achievement in the last 5 years (from 2010 till 2015) is below expectation, the short fall in the number of toilet blocks built has been taken care of well in the year 2015-16 (till 27th March 2016) as per the data given in Table 1.6.

TABLE 1.6: APL TOILET BLOCK (TARGETS & ACHIEVEMENT)
PROJECT: SWATCH BHARAT MISSION (GRAMIN)

As on 27th March, 2016

Sr. No.	Taluka	No. of APL Households without Toilet Facility	2013-14	2014-15	2015-16 (From Apr'15 till Feb'16)	2015-16 (From 1-3-16 till 27-3-16)	Total (b + c + d + e)	No. of Toilet Block where work is in progress (a - f)	Percentage Achievement till 27-Mar-16 [(f / a) * 100)]
1	Vansda	4915	2061	2854	0	0	4915	0	100.00
2	Chikhli	20852	997	4435	3551	4562	13545	7307	64.96
3	Gandevi	12798	2353	4881	4060	1366	12660	138	98.92
4	Jalalpore	8432	915	2946	2349	400	6610	1822	78.39
5	Navsari	9822	1027	2702	3898	775	8402	1420	85.54
Total		56819	7353	17818	13858	7103	46132	10687	81.19

Source: District Rural Development Agency, Navsari.

Around 56819 households in the APL category did not have a toilet facility at the end of the year 2013. Out of these, in about 81.19% of the APL households, toilet facility has been made available as on 27th March, 2016. In the year2015-16 (till 27-3-2016) itself, about 20961 toilet blocks have been built with only about 10687 households left to be benefited under the scheme. In all of these remaining 10687 households, the work of building toilet blocks is in progress and a majority of these are expected to get finished by 31st March, 2016, thereby resulting in to a near 100% of the APL households in Navsari district being provided with toilet blocks within the household.

1.3 SWOC ANALYSIS

Strength

- Falling gender gap as well as regional gap (rural & urban divide) in terms of literacy.
- Higher literacy levels among SC & ST population (higher than the Gujarat State literacy level).
- Existence of 281 Sub Centers, 39 PHCs, 10 CHCs, and 1 Government Hospital.
- Vatsalyadham Scheme has worked very well in providing nutrition and health to Children of tribal talukas.
- Many people have been benefited because of Mukhyamantri Amrutam Yojana
- About 70% of the rural population depends on agriculture
- Out of the total workers more than 53% workers are engaged in agriculture and allied activities

Weakness

- Growth in the number of schools in the district is marginal.
- Less number of schools at the secondary and higher secondary level.
- Vast gap between health care infrastructure in Urban and Rural areas.
- Medical and Para Medical staff positions vacant at various levels.
- Public clinics attract less number of patients for maternity care compared to private clinics.
- Nutritional deficiency in animals
- Traditional management of animals

Opportunities

- A high number of teachers in the schools are with either secondary or just higher secondary level education. Motivating them to complete their graduation level education.
- Increasing the enrolment levels in the schools as well as the transition rate from primary to upper-primary.
- Vatsalyadham project if extended to other PHCs can help curb the menace of malnutrition
- Vaccination and Immunization schemes can be more effective provided there are regular follow ups.
- Navsari Agriculture University can assist in addressing the issues pertaining to crop productivity, cropping intensity and agribusiness management.
- Livestock waste can be recycled by many modern ways in order to combat rising energy prices, sustainable agricultural and reduce the environmental threats from traditional livestock waste management practices.

Challenge

- Less number of private schools and there by a lot of pressure to ramp up the education system comes on to the government.
- Controlling the drop-out of rate due to reasons other than failures.
- More emphasis needs to be given to Post Natal Care of Inhabitants of far flung areas of Navsari District
- Spreading health care awareness in remote areas with scattered population and low literacy is a major challenge.
- Lack of basic health care services in backward areas due to non-availability of staff.
- Volatile cultivation pattern impose risk of returns to farmers.
- Injudicious use of fertilizer & pesticides.

TABLE 1.5: STATE/DISTRICT/TALUKA POPULATION AND DECADAL CHANGE BY RESIDENCE & GENDER

State/ District/ Taluka	P/M/F	Total Population						% of Decadal Change			Sex Ratio		Urbanization	
		Total		Rural		Urban		T	R	U				
		2001	2011	2001	2011	2001	2011	2001-2011			2001	2011	2001	2011
State - GUJARAT	P	50671017	60439692	31740767	34694609	18930250	25745083	19.28	9.31	36.00	920	919	37.36	42.60
	M	26385577	31491260	16317771	17799159	10067806	13692101	19.35	9.08	36.00				
	F	24285440	28948432	15422996	16895450	8862444	12052982	19.20	9.55	36.00				
District - NAVSARI	P	1229463	1329672	893110	920535	336353	409137	8.15	3.07	21.64	955	961	27.36	30.77
	M	628988	678165	453352	464749	175636	213416	7.82	2.51	21.51				
	F	600475	651507	439758	455786	160717	195721	8.50	3.64	21.78				
Talukas - Navsari	P	274867	311238	112617	109692	162250	201546	13.23	-2.60	24.22	931	944	59.03	64.76
	M	142331	160131	57706	55940	84625	104191	12.51	-3.06	23.12				
	F	132536	151107	54911	53752	77625	97355	14.01	-2.11	25.42				
Talukas - Jalalpore	P	220003	228065	140124	136071	79879	91994	3.66	-2.89	15.17	927	909	36.31	40.34
	M	114169	119462	71466	69486	42703	49976	4.64	-2.77	17.03				
	F	105834	108603	68658	66585	37176	42018	2.62	-3.02	13.02				
Talukas - Gandevi	P	240291	249264	153016	154764	87275	94500	3.73	1.14	8.28	959	970	36.32	37.91
	M	122670	126527	77913	78000	44757	48527	3.14	0.11	8.42				
	F	117621	122737	75103	76764	42518	45973	4.35	2.21	8.13				
Talukas - Chikhli	P	293014	309877	286065	302852	6949	7025	5.76	5.87	1.09	970	980	2.37	2.27
	M	148729	156516	145178	152960	3551	3556	5.24	5.36	0.14				
	F	144285	153361	140887	149892	3398	3469	6.29	6.39	2.09				
Talukas - Vansda	P	201288	231228	201288	217156	0	14072	14.87	7.88	-	991	1001	0.00	6.09
	M	101089	115529	101089	108363	0	7166	14.28	7.20	-				
	F	100199	115699	100199	108793	0	6906	15.47	8.58	-				

Source: Census of India (2001 & 2011)

TABLE 1.6: STATE/DISTRICT/TALUKA CHILD POPULATION (0-6 YEARS) AND DECADAL CHANGE BY RESIDENCE & GENDER

State/ District/ Taluka	P/ M/ F	Child Population (0-6 years)						% of Decadal Change			Sex Ratio (0-6)	
		Total		Rural		Urban		Total	Rural	Urban		
		2001	2011	2001	2011	2001	2011	2001-2011			2001	2011
State - GUJARAT	P	7532404	7777262	5085941	4824903	2446463	2952359	3.25	-5.13	20.68	883	890
	M	4000148	4115384	2668527	2521455	1331621	1593929	2.88	-5.51	19.70		
	F	3532256	3661878	2417414	2303448	1114842	1358430	3.67	-4.71	21.85		
District - NAVSARI	P	149283	135170	110624	92466	38659	42704	-9.45	534.68	336.51	915	923
	M	77940	70298	57247	47505	20693	22793	-9.80	532.14	169.68		
	F	71343	64872	53377	44961	17966	19911	-9.07	537.38	89.12		
Talukas - Navsari	P	32804	32008	14569	11686	18235	20322	-2.43	-30.26	257.03	896	907
	M	17298	16783	7515	5964	9783	10819	-2.98	-31.97	123.72		
	F	15506	15225	7054	5722	8452	9503	-1.81	-28.38	3.50		
Talukas - Jalalpore	P	27284	23848	16756	12375	10528	11473	-12.59	-26.15	8.98	887	875
	M	14459	12718	8767	6503	5692	6215	-12.04	-25.82	9.19		
	F	12825	11130	7989	5872	4836	5258	-13.22	-26.50	8.73		
Talukas - Gandevi	P	26753	22898	17571	14097	9182	8801	-14.41	-19.77	-4.15	902	920
	M	14068	11923	9226	7256	4842	4667	-15.25	-21.35	-3.61		
	F	12685	10975	8345	6841	4340	4134	-13.48	-18.02	-4.75		
Talukas - Chikhli	P	34943	30533	34229	29902	714	631	-12.62	-12.64	-11.62	926	958
	M	18144	15592	17768	15274	376	318	-14.07	-14.04	-15.43		
	F	16799	14941	16461	14628	338	313	-11.06	-11.14	-7.40		
Talukas - Vansda	P	27499	25883	27499	24406	0	1477	-5.88	-11.25	-	968	949
	M	13971	13282	13971	12508	0	774	-4.93	-10.47	-		
	F	13528	12601	13528	11898	0	703	-6.85	-12.05	-		

Source: Census of India (2001 & 2011)

TABLE 1.7: STATE/DISTRICT/TALUKA SCHEDULED CASTE POPULATION, DECADAL CHANGE BY RESIDENCE & GENDER, SEX RATIO AND % OF SC POPULATION TO THE TOTAL POPULATION

State/ District/ Taluka	P/ M/ F	Scheduled Caste Population						% of Decadal Change (SC)			% of SC Population to Total Population			Sex Ratio (SC)		
		Total		Rural		Urban		T	R	U	T	R	U	T	R	U
		2001	2011	2001	2011	2001	2011	2001-2011			2011			2011		
State - GUJARAT	P	3592715	4074447	2180441	2281573	1412274	1792874	13.41	4.64	26.95	6.74	6.58	6.96	931	940	919
	M	1866283	2110331	1127423	1176107	738860	934224	13.08	4.32	26.44	6.70	6.61	6.82			
	F	1726432	1964116	1053018	1105466	673414	858650	13.77	4.98	27.51	6.78	6.54	7.12			
District - NAVSARI	P	39574	35464	20448	17348	19126	18116	-10.39	-15.16	-5.28	2.67	1.88	4.43	975	991	959
	M	19937	17959	10134	8712	9803	9247	-9.92	-14.03	-5.67	2.65	1.87	4.33			
	F	19637	17505	10314	8636	9323	8869	-10.86	-16.27	-4.87	2.69	1.89	4.53			
Talukas - Navsari	P	14071	13816	4562	4155	9509	9661	-1.81	-8.92	1.60	4.44	3.79	4.79	964	996	950
	M	7107	7036	2264	2082	4843	4954	-1.00	-8.04	2.29	4.39	3.72	4.75			
	F	6964	6780	2298	2073	4666	4707	-2.64	-9.79	0.88	4.49	3.86	4.83			
Talukas - Jalalpore	P	9218	8172	4467	3431	4751	4741	-11.35	-23.19	-0.21	3.58	2.52	5.15	973	983	966
	M	4680	4142	2216	1730	2464	2412	-11.50	-21.93	-2.11	3.47	2.49	4.83			
	F	4538	4030	2251	1701	2287	2329	-11.19	-24.43	1.84	3.71	2.55	5.54			
Talukas - Gandevi	P	8849	6763	4098	3268	4751	3495	-23.57	-20.25	-26.44	2.71	2.11	3.70	1008	1041	978
	M	4455	3368	2019	1601	2436	1767	-24.40	-20.70	-27.46	2.66	2.05	3.64			
	F	4394	3395	2079	1667	2315	1728	-22.74	-19.82	-25.36	2.77	2.17	3.76			
Talukas - Chikhli	P	6298	5732	6183	5658	115	74	-8.99	-8.49	-35.65	1.85	1.87	1.05	949	950	850
	M	3115	2941	3055	2901	60	40	-5.59	-5.04	-33.33	1.88	1.90	1.12			
	F	3183	2791	3128	2757	55	34	-12.32	-11.86	-38.18	1.82	1.84	0.98			
Talukas - Vansda	P	1138	981	1138	836	0	145	-13.80	-26.54	-	0.42	0.38	1.03	1078	1101	959
	M	580	472	580	398	0	74	-18.62	-31.38	-	0.41	0.37	1.03			
	F	558	509	558	438	0	71	-8.78	-21.51	-	0.44	0.40	1.03			

Source: Census of India (2001 & 2011)

TABLE 1.8: STATE/DISTRICT/TALUKA SCHEDULED TRIBE POPULATION, DECADAL CHANGE BY RESIDENCE & GENDER, SEX RATIO AND % OF SC POPULATION TO THE TOTAL POPULATION

State/ District/ Taluka	P/ M/ F	Scheduled Tribe Population						% of Decadal Change (ST)			% of ST Population to Total Population			Sex Ratio (ST)		
		Total		Rural		Urban		T	R	U	T	R	U	T	R	U
		2001	2011	2001	2011	2001	2011	2001-2011			2011			2011		
State - GUJARAT	P	7481160	8917174	6866637	8021848	614523	895326	19.20	16.82	45.69	14.75	23.12	3.48	981	984	952
	M	3790117	4501389	3471002	4042691	319115	458698	18.77	16.47	43.74	14.29	22.71	3.35			
	F	3691043	4415785	3395635	3979157	295408	436628	19.64	17.18	47.81	15.25	23.55	3.62			
District - NAVSARI	P	591164	639659	534939	571812	56225	67847	8.20	6.89	20.67	48.11	62.12	16.58	1001	999	1011
	M	297103	319740	269009	285999	28094	33741	7.62	6.32	20.10	47.15	61.54	15.81			
	F	294061	319919	265930	285813	28131	34106	8.79	7.48	21.24	49.10	62.71	17.43			
Talukas - Navsari	P	89332	94502	62726	61586	26606	32916	5.79	-1.82	23.72	30.36	56.14	16.33	1006	1004	1008
	M	44771	47117	31568	30725	13203	16392	5.24	-2.67	24.15	29.42	54.92	15.73			
	F	44561	47385	31158	30861	13403	16524	6.34	-0.95	23.29	31.36	57.41	16.97			
Talukas - Jalalpore	P	41744	38388	31770	30884	9974	7504	-8.04	-2.79	-24.76	16.83	22.70	8.16	978	975	994
	M	21257	19404	16194	15640	5063	3764	-8.72	-3.42	-25.66	16.24	22.51	7.53			
	F	20487	18984	15576	15244	4911	3740	-7.34	-2.13	-23.84	17.48	22.89	8.90			
Talukas - Gandevi	P	73028	77125	54652	57057	18376	20068	5.61	4.40	9.21	30.94	36.87	21.24	1004	997	1023
	M	36720	38494	27533	28574	9187	9920	4.83	3.78	7.98	30.42	36.63	20.44			
	F	36308	38631	27119	28483	9189	10148	6.40	5.03	10.44	31.47	37.10	22.07			
Talukas - Chikhli	P	205275	220170	204006	218860	1269	1310	7.26	7.28	3.23	71.05	72.27	18.65	995	994	1037
	M	103474	110381	102833	109738	641	643	6.68	6.71	0.31	70.52	71.74	18.08			
	F	101801	109789	101173	109122	628	667	7.85	7.86	6.21	71.59	72.80	19.23			
Talukas - Vansda	P	181785	209474	181785	203425	0	6049	15.23	11.90	-	90.59	93.68	42.99	1008	1008	1002
	M	90881	104344	90881	101322	0	3022	14.81	11.49	-	90.32	93.50	42.17			
	F	90904	105130	90904	102103	0	3027	15.65	12.32	-	90.87	93.85	43.83			

Source: Census of India (2001 & 2011)

CHAPTER II

LITERACY AND EDUCATION

2.1 INTRODUCTION

Literacy level in a society is an important indicator of how the society is progressing and is considered to be one of the basic requirements for human development. Education enables capacity building for an individual that helps him lead an empowered life. Education has a multiplier effect on other social sectors like health, women development, employment, child development, labour etc. It is also of great instrumental value in the process of economic growth and development. It opens up new horizons of development as it broadens ideas and outlook in an individual. Education not only improves the quality of life of the people but it also provides opportunities for progress. Education is a strong predictor of long-term health and quality of life (Feinstein L., 2002).

There is a strong linkage between a nation's economic development and the literacy level prevalent among its nationals. As a result, a nation should always strive to make available basic infrastructure for enabling people to get educated. This would not only mean building physical infrastructure in terms of schools and colleges, classrooms, libraries, basic amenities like toilets, drinking water facilities etc. but also ensuring a reasonable level of enrolments in schools and colleges by providing incentives for education, putting in place schemes and programs for education, maintaining a good faculty-pupil ratio.

This chapter will focus on some of these major aspects and how Navsari district is performing across them.

2.2 STATUS OF LITERACY[1]

Navsari ranks as the 5th most literate district of the Gujarat State with the overall literacy rate of 83.90% in the year 2011. This is an improvement over the year 2001, where about 75.80% of the district population was literate. In terms of rural literacy level (total), Navsari ranks 3rd with about 81.60% of its rural population as literate, behind of Anand and Mehsana districts. In terms of urban literacy level (total), Navsari

[1] Literacy *Rates as mentioned in this section of the report are effective Literacy Rate, which excludes the population of the age group 0-6 years.*

ranks 2nd, behind of Vadodara district, with a literacy rate of 88.90%[2]. Table 2.1 gives a detailed account of the literacy level for the district, including the regional gap and the gender gap in literacy, for the year 2001 and 2011.

TABLE 2.1: DISTRICT LITERACY RATE AND GAP (GENDER & REGIONAL)

Figures in (%)

P/M/F	2001				2011			
	Total	Rural	Urban	Regional Gap	Total	Rural	Urban	Regional Gap
Person	75.80	72.30	85.10	**12.80**	83.90	81.60	88.90	**7.30**
Male	82.80	79.90	90.20	**10.30**	88.70	87.00	92.60	**5.60**
Female	68.60	64.60	79.50	**14.90**	78.80	76.20	84.90	**8.70**
Gender Gap	**14.20**	**15.30**	**10.70**	**-**	**9.90**	**10.80**	**7.70**	**-**

Source: State, District and Taluka-wise Literate Population and Literacy rate (2001 and 2011) Gujarat. - DES, Govt. of Gujarat, Gandhinagar.

The overall literacy gender gap in the year 2001 stood at 14.20 percentage points which got reduced to 9.90 percentage points in 2011, signifying increasing level of literacy among females. This is a positive sign for the district and a society as a whole. The fall in the gender gap over the decade is a bit higher for rural areas of the district than for the urban areas, signifying the increasing level of literacy among females in the rural areas of the district. This again is a positive development which may have impact on various other aspects of human development.

If we further analyse the literacy scenario for the rural and urban areas of the district, the regional gap has reduced in the year 2011 as compared to 2001. The regional gap was about 12.80 percentage points in 2001 and the same in 2011 reduced to 7.30 percentage points, an improvement of about 5.50 percentage points. This is due to a major improvement in the literacy level (among males & females both) over the decade in the rural areas of the district. About 81.60% of the district's rural population is literate in 2011 as compared to about 72.30% in 2001, an improvement of 9.30 percentage points. In the same period, the urban literacy level improved just by about 3.80 percentage points. This has lead to the falling region gap over the decade.

[2] Ranking as per: '*State, District and Taluka-wise Literate Population and Literacy rate (2001 and 2011) Gujarat*', *DES, Govt. of Gujarat, Gandhinagar.*

TABLE 2.2: TALUKA-WISE LITERACY RATE & REGIONAL GAP

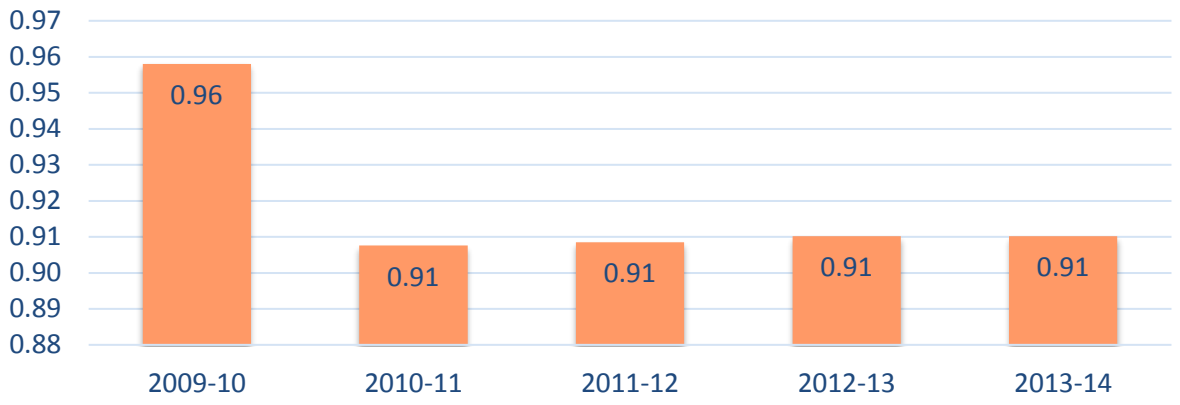
Figures in (%)

State / District / Taluka	2001				2011			
	Total	Rural	Urban	GAP	Total	Rural	Urban	GAP
Navsari	79.00	70.00	85.10	15.10	85.80	80.70	88.60	7.90
Jalalpore	82.13	81.00	84.20	3.20	89.20	89.70	88.40	-1.30
Gandevi	83.21	81.90	85.50	3.60	90.00	89.80	90.40	0.60
Chikhli	71.86	71.40	89.00	17.60	81.50	81.30	92.90	11.60
Vansda	61.30	61.30	0.00	-61.30	72.40	71.50	85.10	13.60
NAVSARI - District	**75.80**	**72.30**	**85.10**	**12.80**	**83.90**	**81.60**	**88.90**	**7.30**
GUJARAT - State	**69.14**	**61.30**	**81.80**	**20.50**	**78.03**	**71.70**	**86.30**	**14.60**

Source: State, District and Taluka-wise Literate Population and Literacy rate (2001 and 2011) Gujarat. - DES, Govt. of Gujarat, Gandhinagar.

Table 2.2 gives details about the literacy at taluka level and necessary regional gap as well. Except Vansda, all the other four talukas of Navsari District have overall literacy rate above 80% which is higher than that of Gujarat State (78.03%). In fact, with regards to literacy rate (Total), literacy rate (Female) and literacy rate (Rural), Gandevi Taluka ranks 1st and with regards to literacy rate (urban) Chikhli ranks 1st among the 225 talukas of Gujarat State[3]. All the talukas have shown improvement in literacy level in the year 2011 as compared to 2001, especially in rural areas, and as a result the regional, literacy gap has reduced across all the talukas.

Figure 2.1 District Gender Parity Index (GPI) at Primary Level



Source: State, District and Taluka-wise Literate Population and Literacy rate (2001 and 2011) Gujarat. - DES, Govt. of Gujarat, Gandhinagar.

[3] Ranking as per: *'State, District and Taluka-wise Literate Population and Literacy rate (2001 and 2011) Gujarat', DES, Govt. of Gujarat, Gandhinagar.*

TABLE 2.3: STATE AND DISTRICT SC & ST LITERACY RATE (2011)

Figures in (%)

State / District	P/M/F	SC Literacy Rate			ST Literacy Rate		
		Total	Rural	Urban	Total	Rural	Urban
State - GUJARAT	Person	79.18	75.18	84.17	62.48	61.29	72.71
	Male	87.87	85.36	90.98	71.68	70.70	79.96
	Female	69.87	64.39	76.79	53.16	51.79	65.13
District - NAVSARI	Person	90.80	93.16	88.44	74.55	74.07	78.56
	Male	94.56	95.34	93.79	81.66	81.30	84.71
	Female	86.97	90.98	82.92	67.48	66.87	72.54

Source: State, District and Taluka-wise Literate Population and Literacy rate (2001 and 2011) Gujarat. - DES, Govt. of Gujarat, Gandhinagar.

Table 2.3 summarizes the literacy status among the SC and ST population in Navsari district as well as Gujarat State. It can be easily seen that across all parameters the literacy levels in Navsari district surpass the same in the Gujarat State as a whole, for the SC as well as ST population. In fact, in terms of literacy rate (SC-Total) and literacy rate (ST-Total) for the year 2011, Navsari ranks 1st and 3rd respectively, among all the 26 districts of Gujarat State[4]. Another noteworthy point here is that the literacy level in case of SC population is much higher than the literacy level for the total population for the district.

2.3 SCHOOL INFRASTRUCTURE AND AMENITIES

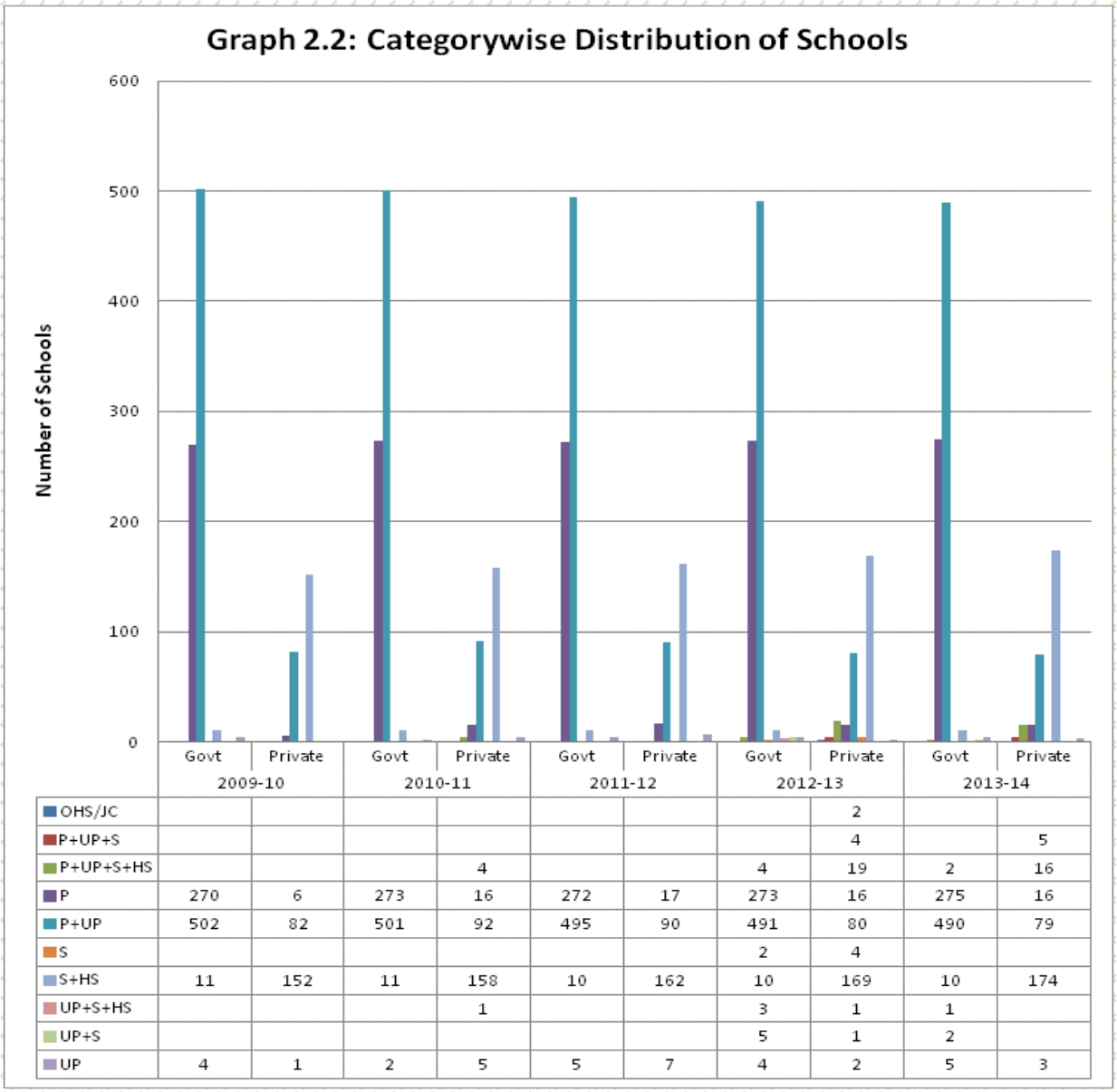
Ensuring a good number of education institutions/schools is probably the first step towards enabling higher literacy levels in a society and thereby better human development. With increasing number of schools and colleges, the members of the society will have better access to education. But it is not only the building up of schools that will suffice. Ensuring a basic level of amenities like electricity, drinking water facility, toilets etc. is also needed.

The total number of schools in the district has increased from 1028 in the year 2009-10 to 1078 in the year 2013-14. Over this period, there has been a marginal increase in the number of schools in the district, mainly accounted by the increase in number of private schools.

[4] Ranking as per: '*State, District and Taluka-wise Literate Population and Literacy rate (2001 and 2011) Gujarat*', *DES, Govt. of Gujarat, Gandhinagar.*

TABLE 2.4: TOTAL NUMBER OF SCHOOLS IN NAVSARI DISTRICT									
2009-10		2010-11		2011-12		2012-13		2013-14	
Govt	Private	Govt	Private	Govt	Private	Govt	Private	Govt	Private
787	241	787	276	782	276	792	298	785	293
1028		**1063**		**1058**		**1090**		**1078**	

Source: Based on database of District Information System for Education, NUEPA (2009-14)

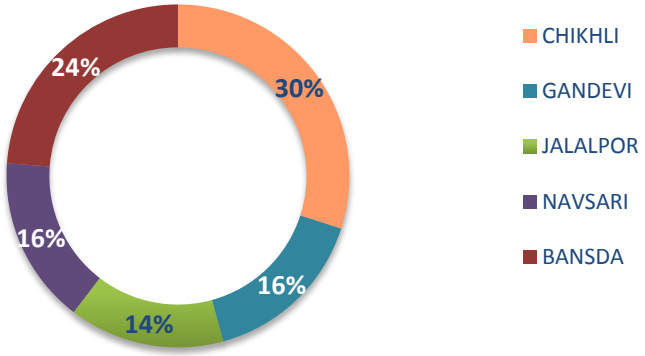


	2009-10 Govt	2009-10 Private	2010-11 Govt	2010-11 Private	2011-12 Govt	2011-12 Private	2012-13 Govt	2012-13 Private	2013-14 Govt	2013-14 Private
OHS/JC								2		
P+UP+S								4		5
P+UP+S+HS				4			4	19	2	16
P	270	6	273	16	272	17	273	16	275	16
P+UP	502	82	501	92	495	90	491	80	490	79
S							2	4		
S+HS	11	152	11	158	10	162	10	169	10	174
UP+S+HS				1			3	1	1	
UP+S							5	1	2	
UP	4	1	2	5	5	7	4	2	5	3

Source: Based on database of District Information System for Education, NUEPA (2009-14)
Verified and authenticated by the District Primary Education Office, Navsari.
Note: P: Primary; UP: Upper Primary; S: Secondary; HS: Higher Secondary; JC: Junior College.

As per Figure 2.2, majority of the schools are either at primary only or primary with upper primary level, both government as well as private and out of the schools having secondary and/or higher secondary education being imparted, majority of them are privately held.

Figure 2.3: Taluka-wise Number of Schools (2014) (Primary + Upper Primary)



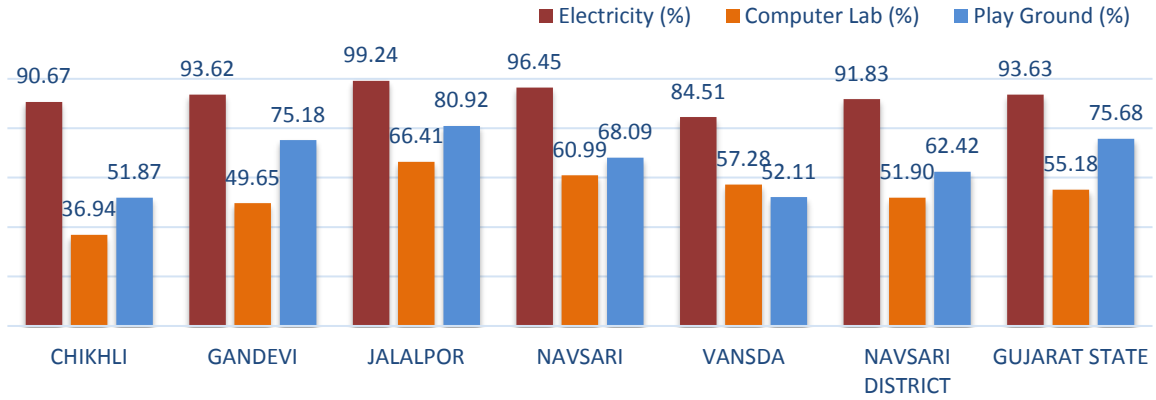
Source: Based on database of District Information System for Education, NUEPA (2009-14) Verified and authenticated by the District Primary Education Office, Navsari.

Taluka-wise distribution of the schools for the year 2014 is presented in Figure 2.3. Chikhli taluka has the highest number of schools among all the 5 talukas followed by Vansda, resulting in to the best population to school ratio in Navsari district. This is in spite of the fact that these two talukas are the least urbanized. A large number of schools in these two talukas have resulted in to increased literacy level there in over the decade 2001-2011.

Provision of electricity & computer laboratory and other facilities are essential for effective delivery of teaching and enable efficient learning among the pupils. Play ground are also necessary for the pupils to have some relaxing time between the classes as well as for physical training. Figure 2.4 presents the details of the same. Most of the talukas fair well, in fact almost at par with Gujarat State, in terms of making electricity available to the schools. But when it comes to making computer lab available, only Navsari and Jalalpore talukas have about 60-65% of its schools with computer lab facility. Chikhli has the least proportion of its schools with computer lab facility, just about 37% which is far below the state figure of 55%, where as in terms of total number of schools it ranks 1st among the 5 talukas. In case of playground also, except Jalalpore and Gandevi (80.92% & 75.18% respectively), all the other three districts fall behind

the state figure of about 75% of its schools having play ground facility made available to its pupils. Because of this disparity among its talukas, Navsari as a district fall short on all the three variables when compared with the Gujarat State.

Figure 2.4: Percentage of physical amenities available in schools at taluka, district and state level (2014)



Source: Based on database of District Information System for Education, NUEPA (2009-14)

2.4 INTELLECTUAL CAPITAL

The total number of teachers in schools in Navsari district as a whole has increased from 7464 in 2009-10 to 8358 in 2013-14, an increase of 894 teachers over a period of 5 years. This can be co-related with a modest increase in the number of schools in the district over the same period.

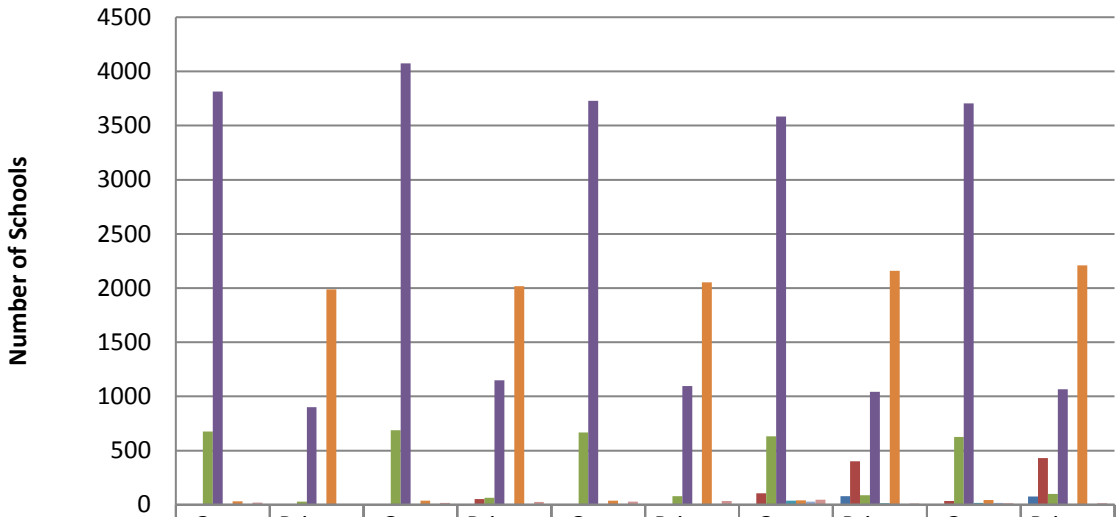
TABLE 2.5: TOTAL NUMBER OF TEACHERS IN NAVSARI DISTRICT

2009-10		2010-11		2011-12		2012-13		2013-14	
Govt	Private	Govt	Private	Govt	Private	Govt	Private	Govt	Private
4543	2921	4818	3318	4463	3264	4478	3800	4457	3901
7464		8136		7727		8278		8358	

Source: Based on database of District Information System for Education, NUEPA (2009-14)

As seen earlier, the number of schools imparting primary and/or upper primary level of education is huge in the district. Commensurate with that, the number of teachers at the primary and/or upper primary level is the highest across all the categories, as seen in Figure 2.5. It is also evident that the proportion of teachers in government schools is larger as depicted in Figure 2.6.

FIGURE 2.5: NUMBER OF TEACHERS ACROSS VARIOUS CATEGORIES OF SCHOOLS IN NAVSARI DISTRICT



	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private
	2009-10		2010-11		2011-12		2012-13		2013-14	
P+UP+S								80		77
P+UP+S+HS				52			107	400	36	432
P	676	30	687	66	666	80	633	89	625	100
P+UP	3815	900	4075	1150	3729	1097	3583	1044	3705	1067
UP+S+HS				6			38	14	17	
S+HS	32	1987	39	2019	39	2052	41	2160	44	2210
UP+S							30	3	17	
UP	20	4	17	25	29	35	46	10	13	15

Source: Based on database of District Information System for Education, NUEPA (2009-14). Verified and authenticated by the District Primary Education Office, Navsari. Note: P: Primary; UP: Upper Primary; S: Secondary; HS: Higher Secondary; JC: Junior College.

Figure 2.6: Proportion of Teachers (other than S+HS of Figure 2.5) in Type of School (2013-14)

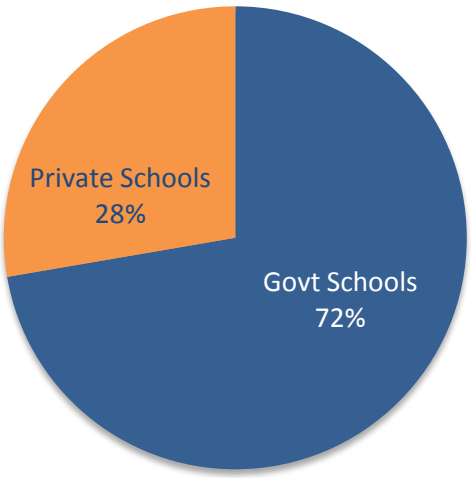
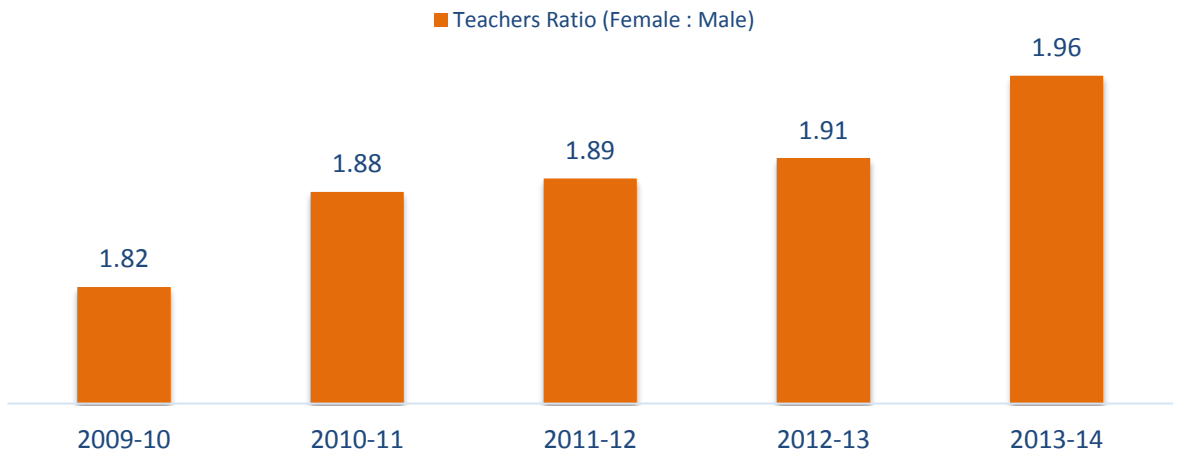


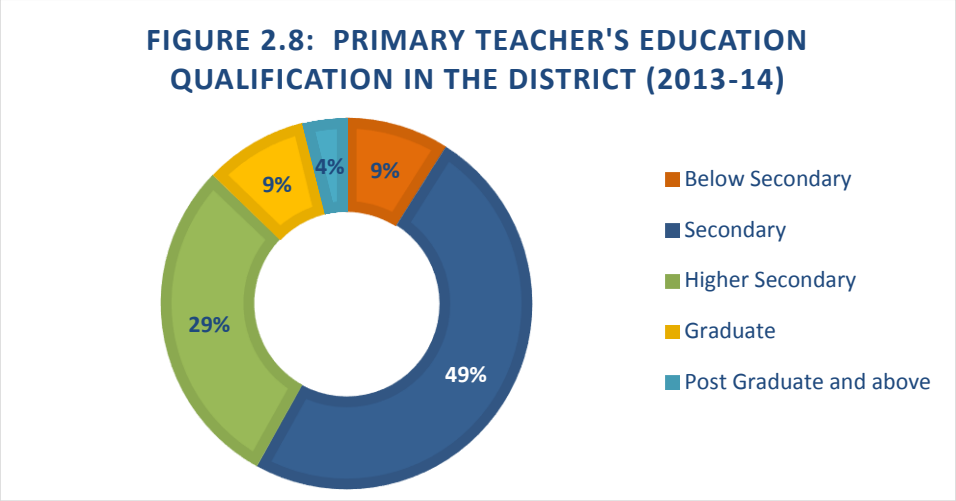
Figure 2.7: Regular Teacher's Ratio (Female:Male) for Navsari District



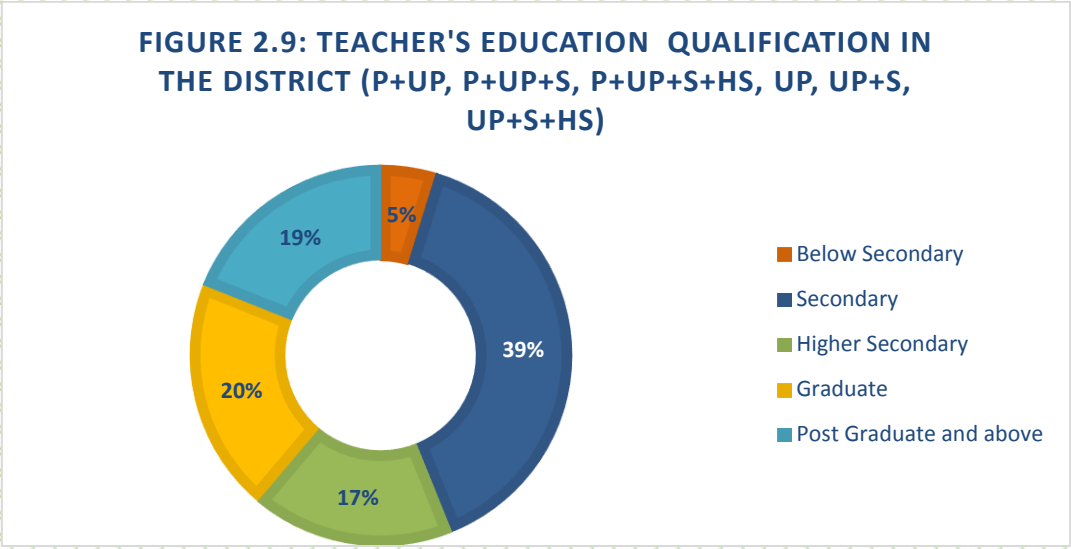
Source: Based on database of District Information System for Education, NUEPA (2009-14) Verified and authenticated by the District Primary Education Office, Navsari.

The number of female teachers across the various schools in the district is much higher than the male teachers. This is evident from the steadily increasing Teacher's Ratio (Female: Male) over the period 2009-2012 as depicted in Figure 2.7. In 2011-12 the number of female teachers in schools is almost 2 times the number of male teachers.

A teacher's education level is a very important aspect when it comes to ensure that the pupils whom they are teaching come out well educated. Higher the education level of the teacher better is the expected quality of the pupils whom they teach. There are a total of 725 teachers in primary (only) schools, government and private put together. Figure 2.8 shows the education level of these 725 teachers. Around 49% of the teachers have secondary level education and another 38% of the teachers have higher secondary or a graduation degree to their credit. About 4% of the teachers are post graduates and above which is an encouraging sign.



Source: Based on database of District Information System for Education, NUEPA (2009-14)

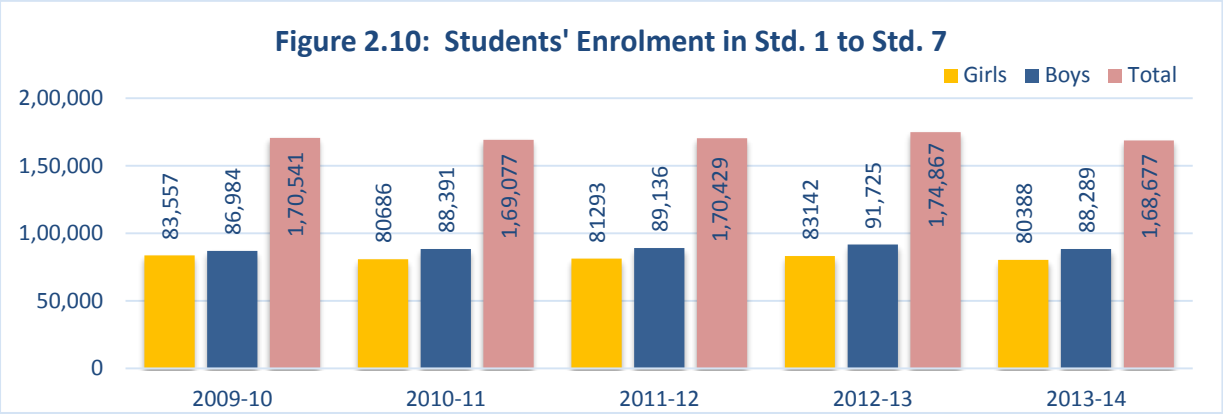


Source: Based on database of District Information System for Education, NUEPA (2013-14)
Note: P+UP: Primary with Upper Primary, P+UP+S: Primary, Upper Primary and Secondary only, P+UP+S+HS: Primary, Upper Primary, Secondary and Higher Secondary, UP: Upper Primary only, UP+S: Upper Primary with Secondary, UP+S+HS: Upper Primary with Secondary and Higher Secondary.

Figure 2.9 presents a picture of the education level of the teachers employed in schools imparting education at primary, upper primary, secondary and higher secondary level. There are a total of 5379 teachers in schools other than primary (only) schools, government and private put together. Figure 2.9 shows the education level of these 5379 teachers. Around 39% of them have secondary level education and another 37% of the teachers have higher secondary or a graduation degree to their credit. About 19% of the teachers are post graduates and above which is a very healthy sign.

2.5 ENROLMENT AND FLOW RATES

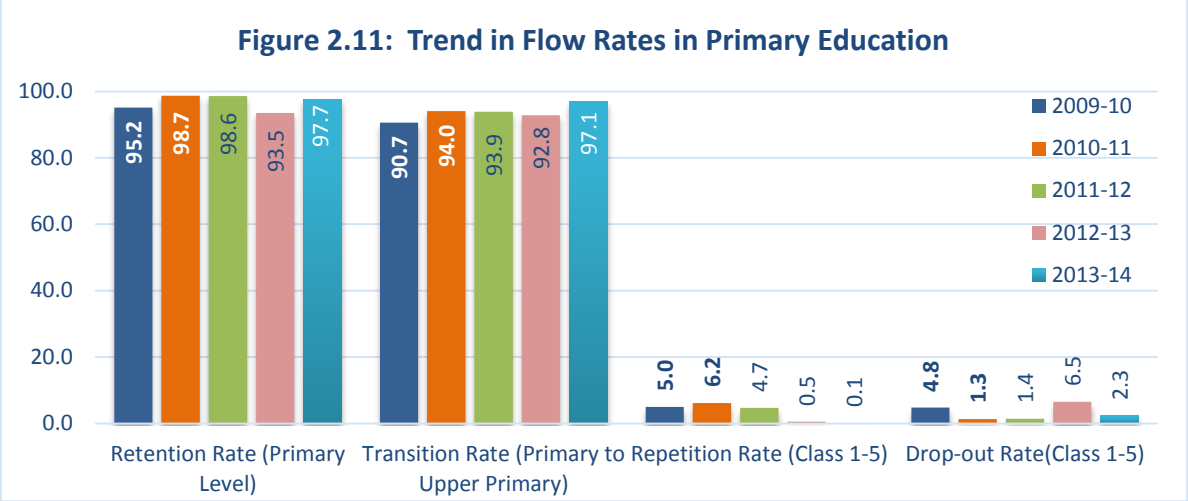
Figure 2.9 depicts the scenario of students' enrolment in schools in Std.1 to Std. 7. Over the years the enrolment has shown a fluctuating trend, falling in the year 2010-11 then rising for two years continuously and then going in for a sharp fall in the year 2013-14.



Source: Based on database of District Information System for Education, NUEPA (2009-14)

Girls enrolment have seen a fall of 3.8% over the period 2009-14 whereas the enrolment for boys show a rise of about 1305 over the same period. The over fall in enrolment may be attributed to the falling population of the age group 0-6 years over the years (comparing the 2001 & 2011 census data) though cannot be confirmed as the population data for the period 2012-14 is not available.

Figure 2.11 represents the trend in the various flow rates at the primary education level in the district. Over the period 2009-2012, the retention rate at the primary level has steadily fallen by a huge number. This is quite natural because in the two years from 2009 to 2011, the drop-out rate for class 1-5 has been quite high. Also, though the data for drop-out rate for the period 2006-2008 is not available, we can assume that they would also have been on a higher side, seeing at the low retention rate in 2011-12. One good sign for the year 2011-12 is that the drop-out rate has fallen considerably as compared to the year 2010-11. This will have a positive impact on the retention rates in the coming years, provided the trend continues.



Source: Based on database of District Information System for Education, NUEPA (2009-14)

The transition rate in the year 2013-14 has increased as compared to that in the year 2009-10. Around 97% of the pupils at the primary level graduate to the upper primary level. 3% of the pupils do not graduate to the upper primary level either because of failures in the class 5 or due to opting out of school. Efforts should be made to increase the transition rate as much as possible, by way of motivating the family members not to opt out their children out of school due to any reason and also reduce the repetition rate (at class 5). Repetition rate (at class 5) has a direct impact on the transition rate for a particular year. Higher the repetition rate lower will be the transition rate.

2.6 SUCCESS STORIES

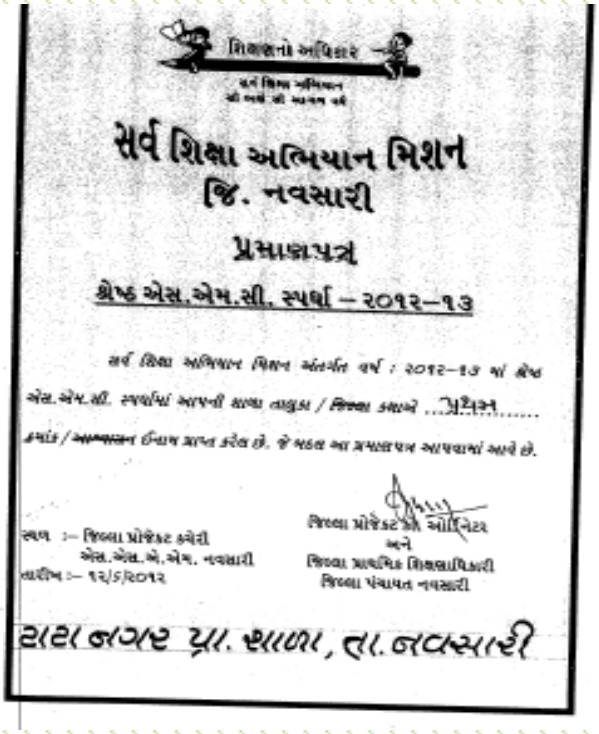
BOX 2.1: TATANAGAR PRIMARY SCHOOL, TELADA.

Tatanagar Primary School is located in village called Telada, which is a 100% tribal area. The Head Teacher, Ms. Kailashkumari Chaganlal Patel, has done tremendous efforts in ensuring that the pupils of the village take the maximum learning benefits. At the time of her appointment as the Head Teacher, the school had Std. 1 to Std. 3 classes with about 63 registered pupils and an attendance record of 57-60%. Currently due to her dedicated efforts the school has Std. 1 to Std. 8 classes with about 139 registered pupils and an attendance record of 98-100%.

The school has a 100% enrolment rate as well as 0% drop out rate among the pupils since inception. The school adopts activity based as well as project based learning approach for all the subjects from Std. 1 to Std. 7.

Some of the noteworthy achievements done by the school are mentioned in the below table:

Year	Achievement
2003	**100% success rate in reading, writing and oral skills** among the pupils and this was noted in a publication titled 'Jivan Sikshan', October 2004 issue, as published by Gujarat Council of Educational Research and Training **(GCERT)**, Gandhinagar.
2007	The school was felicitated with the **'School Excellence Award - 2007'** by Gujarat Council of Educational Research and Training **(GCERT)**, Gandhinagar.
2011	The Head Teacher, Ms. Kailashkumari Chaganlal Patel was awarded with the **'Best Teacher Certificate'** by District Panchayat Education Committee, Navsari.
2012	The school was felicitated with the **'Best School Management Committee Award'** by the District Project Coordinator & District Primary Education Officer, Navsari District.



BOX 2.2: DISBURSEMENT UNDER THE VIDHYA LAKSHMI BOND SCHEME

The vidhyalaxmi bond scheme is introduced in order to motivate the education amongst girls and to increase the number of girls taking education. The parents who agree to educate their daughters are gifted a Shrinidhi bond worth Rs 1000/- once the girl enrols in Class-1. The amount of the bond including the payable interest is paid to the girl's parents as soon as their daughter completes education up to seventh standard.

Over the years, under the Vidya Lakshmi Bond Scheme, the District Education Office, Navsari has ensured to cover as many female pupils in the schools as possible. Details of the number of beneficiary girls under the scheme over the years are mentioned in the below table:

Sr. No.	Year	No. of Beneficiary Girls	Amount Distributed (Rs.)
1	2007-08	56	112000
2	2008-09	55	110000
3	2009-10	95	190000
4	2010-11	89	178000
5	2011-12	45	90000
6	2012-13	0	0
7	2013-14	200	400000
8	2014-15	3085	6170000

2.7 SCHEMES AND PROGRAMMES IN EDUCATION

2.7.1 Gunotsav

Background

Primary education is the foundation on which the development of every citizen and the nation as a whole built on. In recent past, India's improved education system is often cited as one of the main contributors to the economic development of India. At the same time, the quality of elementary education in India has also been a major concern. Student of primary school at least have basic knowledge of reading, writing and simple mathematics equations which may be helpful in performing their daily activities.

While in Gujarat there has been notable focus and efforts on enrolment, and have brought a fair share of success for the primary education, concern for learning outcomes

and quality provided in primary education has been addressed by various enhancement programmes for learning improvement. It is for strengthening the quality outcomes, the government of Gujarat launched a programme called Gunotsav, or 'Celebrating Quality'. Therefore Gunotsav is defined as an accountability framework for quality of primary education which includes learning outcomes of children as well as co-scholastic activities, use of resources and community participation.

This programme was started by the State Education Department during November 2009, with an aim to evaluate primary education scenario and grade school teachers accordingly. State Government has seen primary education as a grass-root sector and initiated with revolutionary experiments. The government of Gujarat has initiated a series of steps to improve the level of learning in its schools across the state and wishes to take these efforts forward, so as to achieve visible and measurable positive change. Government's efforts have succeeded in increasing school enrolments and bringing down school drop-out ratio, two major concerns in education field. The aim is to ensure that Gujarat should be among the top three states of the country in terms of student learning outcomes over the next 5 years.

A unique example of being a state initiative-Gunotsav is carried out with the participation of all state departments to strengthen 'quality' components of the Dept of Education. Different state departments took up additional responsibilities for this period.

PERFORMANCE OF NAVSARI DISTRICT ON VARIOUS PARAMETERS

TABLE 2.6: NUMBER OF PRIMARY SCHOOLS THAT PARTICIPATED IN THE PROGRAMME (TALUKAWISE)

Taluka/District	YEAR	
	2009	2010
Navsari	102	143
Jalalpore	101	112
Gandevi	104	161
Chikhli	242	277
Vansda	177	254
NAVSARI - DISTRICT	726	947

Source: DEO, Navsari.

TABLE 2.7: GRADE-WISE NUMBER OF PRIMARY SCHOOLS														
Taluka/District	2009							2010						
	A+	A	B	C	D	E	F	A+	A	B	C	D	E	F
Navsari	-	0	2	22	66	12	-	-	-	15	88	39	1	0
Jalalpore	-	0	3	34	59	5	-	-	-	2	52	55	2	1
Gandevi	-	0	6	58	38	2	-	-	-	13	89	43	10	6
Chikhli	-	0	9	84	145	3	1	-	-	15	160	78	20	4
Vansda	-	0	5	85	81	6	-	-	-	17	158	77	1	1
NAVSARI DISTRICT	0	0	25	283	389	28	1	0	0	62	547	292	34	12

Source: DEO, Navsari.

TABLE 2.8: GRADE-WISE NUMBER OF TEACHERS														
Taluka/District	2009							2010						
	A+	A	B	C	D	E	F	A+	A	B	C	D	E	F
Navsari	-	0	25	111	214	45	1	9	49	62	22	7	0	-
Jalalpore	-	1	46	154	155	33	4	3	43	76	26	2	0	-
Gandevi	-	1	59	170	122	13	0	13	46	78	17	2	0	-
Chikhli	-	2	155	406	239	19	1	12	77	156	31	6	0	-
Vansda	-	0	59	258	234	35	2	9	72	127	31	2	1	-
NAVSARI DISTRICT	0	4	344	1099	964	145	8	46	287	499	127	19	1	-

Source: DEO, Navsari.

2.7.2 Vidhyalaxmi Bonds

The vidhyalaxmi bond scheme is introduced in order to motivate the education amongst girls and to increase the number of girls taking education. The parents who agree to educate their daughters are gifted a Shrinidhi bond worth Rs 1000/- once the girl enrols in Class-1. The amount of the bond including the payable interest is paid to the girl's parents as soon as their daughter completes education upto seventh grade.

Over the years, under the Vidya Lakshmi Bond Scheme, the District Education Office, Navsari has ensured to cover as many female pupils in the schools as possible. Details of the number of beneficiary girls under the scheme over the years are mentioned in the below table:

TABLE 2.9: TALUKAWISE BENEFICIARY GIRLS UNDER VIDYA LAKSHMI BOND

Taluka/District	Year	No. of Beneficiary Girls	Amount Distributed (Rs.)
Navsari	2009-10	12	12000
	2010-11	2	2000
	2011-12	11	11000
	2012-13	5	10000
	2013-14	5	12000
	2014-15	7	14000
Jalalpore	2009-10	39	39000
	2010-11	36	36000
	2011-12	45	45000
	2012-13	22	44000
	2013-14	15	30000
	2014-15	28	56000
Gandevi	2009-10	56	56000
	2010-11	61	61000
	2011-12	35	35000
	2012-13	17	34000
	2013-14	24	48000
	2014-15	49	98000
Chikhli	2009-10	31	31000
	2010-11	51	51000
	2011-12	47	47000
	2012-13	33	66000
	2013-14	44	88000
	2014-15	31	62000
Vansda	2009-10	376	337000
	2010-11	337	337000
	2011-12	365	365000
	2012-13	327	654000
	2013-14	374	748000
	2014-15	336	672000

Source: DEO, Navsari

2.7.3 Sarva Siksha Abhiyan

Sarva Siksha Abhiyan (SSA) is Government of India's flagship programme for achievement of Universalization of Elementary Education (UEE) in a time bound manner, as mandated by 86th amendment to the Constitution of India making free and compulsory Education to the Children of 6-14 years age group, a Fundamental Right. SSA is being implemented in partnership with State Governments to cover the entire country and address the needs of 192 million children in 1.1 million habitations.

The programme seeks to open new schools in those habitations which do not have schooling facilities and strengthen existing school infrastructure through provision of additional class rooms, toilets, drinking water, maintenance grant and school improvement grants. Existing schools with inadequate teacher strength are provided with additional teachers, while the capacity of existing teachers is being strengthened by extensive training, grants for developing teaching-learning materials and strengthening of the academic support structure at a cluster, block and district level.

SSA seeks to provide quality elementary education including life skills. SSA has a special focus on girl's education and children with special needs. SSA also seeks to provide computer education to bridge the digital divide.

2.7.4 National Programme for Education of Girls at Elementary Level

The Government has approved a new programme called 'National Programme for Education of Girls at Elementary Level (NPEGEL)' as an amendment to the scheme of Sarva Shiksha Abhiyan (SSA) for providing additional components for education of girls at elementary level. The NPEGEL will form part of SSA and will be implemented under the umbrella of SSA but with a distinct identity. The scheme of Sarva Shiksha Abhiyan (SSA) was started in the year 2001-02 with the objective of universalization of elementary education. It is an attempt to provide an opportunity for improving human capabilities to all children including the girl child, through provision of community-owned quality education in a mission mode. However, as SSA has limited financial provisions for girls' education in the form of "innovations" at district level and free textbooks, and thus there is a need for an additional component. Accordingly, NPEGEL has been formulated for education of under privileged/ disadvantaged girls from class I to VIII as a separate and distinct gender component plan of SSA. The gender component is necessary to achieve UEE for girls in educationally backward areas.

Objectives of NPEGEL are:

- Develop and promote facilities to provide access to elementary education for girls.
- Facilitate retention of girls in schooling system.
- Ensure greater participation of women and girls in education.
- Improve quality of education.

- Stress upon the relevance and quality of girls' education for their empowerment.

2.7.5 Mid Day Meal

With a view to enhancing enrolment, retention and attendance and simultaneously improving nutritional levels among children, the National Programme of Nutritional Support to Primary Education (NP-NSPE) was launched as a Centrally Sponsored Scheme on 15th August 1995. It currently covers nearly 12 crore children. The main objectives of the scheme are to:

- Improve the nutritional status of children in classes one through five in government schools and government aided schools
- To encourage children from disadvantaged backgrounds to attend school regularly and help them concentrate in school activities.
- As well as provide nutritional support to students in drought- ridden areas throughout summer vacation.

In October 2007 the scheme was revised to cover children in the upper primary section as well i.e. classes VI to VII. The Scheme estimates a cooked mid-day meal with a minimum of 300 calories and 8-12 grams of protein to all children studying in classes I - V. Upper Primary meals consist of 700 calories and 20 grams of protein by providing 150 grams of food grains (rice/wheat) per child/school day. The central government supplies state and union territory government with free food grains (wheat/rice) at 100 grams per child per school day from the nearest Food Corporation of India (FCI) go-down and compensation of the cost of transporting the food grains from the nearest FCI to the Primary school. The scheme provides assistance for meeting the cooking cost of Re 1 per child per school day.

The programme is being carried out by local authorities with assistance from village panchayats, village education committees, school management committees, parent teacher associations, etc. In rural areas the cooking is being done by women self-help groups. In urban areas, some NGOs have taken responsibility for cooking the food and bringing it to the primary schools. Free mid-day meals can achieve a great deal with regard to child education and health. They promote the participation of the child in school, reduce classroom hunger, facilitate the healthy growth of a child, promotes good

eating habits like washing ones hands, finishing ones food, etc, and fosters social and gender equality as all children get the same food and must eat together.

2.8 HALLMARKS OF EDUCATION & TRAINING

2.8.1 Industrial Training Institute, Bilimora.

Background

Industrial Training Institute, Bilimora, under the Directorate of Employment Training, was initially set-up in the year of 1963 with the intake capacity of 80. The institute is spread in the area of 79166.23 sq mts area, including administrative block, workshop and hostel building. The institute has been awarded an ISO 9001 : 2000 certification in the year of Apr-2005.

The Institute is engaged in imparting training in scheme of 26 NCVT, 4 GCVT as well as short term pattern 30 courses with the capacity of 2256 trainees. The institute functions in three shifts. Institute is located in the midst of industrial areas having different types of sector such as VAPI (industrial estate, one of the largest GIDC in INDIA), VALSAD (Atul Industrial pvt ltd., Amberface garments, number of glass bits industries) and also GIDC in PARDI, UMARGAM, SARIGAM, VALSAD, UDYOGNAGAR NAVSARI, GIDC KABILPOR and GIDC ANTALIA, BILIMORA. Institute has well trained instructors.

Local industries contribute a lot in terms of on-job training of the trainees, motivation campaign, Entrepreneurship campaign, Campus Interviews etc. They also play an important role in selection of trainees, purchase of tools-equipments, machinery, enhancing technical skills of teaching staff, arranging workshops, seminars and exhibitions and revamping the syllabus. As a result the members of the IMC as well as the local industries are playing a significant role in running the ITI. With a view to provide technically qualified man-power required for different industries and to be helpful to provide employment, this Institute is carrying over different informal sector Short term courses. More over Institute given Spoken English training to all trade trainees for improve their communication skill in English.

Courses Offered

1. Course in Computer Concept (CCC): These are short duration courses that impart the trainee with knowledge with regards to basics of computer operations, MS Office, basic troubleshooting & installation.

2. Construction Skill Development Training: These are programmes that give training in construction electrification & wiring, formwork & carpentry, bar bending, scale folding and plumbing & sanitation. These programmes have a duration ranging from 30 days to 90 days.

3. Modular Employable Skills: The objective is to provide vocational training to school leavers, existing workers, ITI graduates, etc. to improve their employability by optimally utilizing the infrastructure available in Govt., private institutions and the Industry. Existing skills of the persons can also be tested and certified under this scheme. The motto is to build capacity in the area of development of competency standards, course curricula, learning material and assessment standards in the country. To mention a few areas in which courses are offered:

    a. Automotive Repairs

    b. Banking and Accounting

    c. Beauty Culture & Hair Dressing

    d. Chemical Engineering

    e. Fabrication

    f. Electrical Engineering

    g. Plastic Processing and Wood Work

    h. Refrigeration & Air Conditioning

    i. Soft Skills & Communication

2.8.2 Navsari Agriculture University

Background

Commencing with a college of agriculture established in 1965 on a sprawling farm land of 400 hectares located on the historic road of Dandi March, the Navsari campus gained the status of a separate agricultural university with effect from May 1, 2004. The university is accredited by Indian Council of Agricultural Research.

The university caters to the needs of the farmers of the plantation crops in the heartland of Gujarat, the Kanam zone of cotton, sorghum and pigeon pea and hill millets of tribal belt. Besides the above, this area is also well known for its forest tree species like teak, Khair, Kalam and bamboo. To provide technological backup for the agricultural development in its domain, the Navsari Agricultural University has four fully developed faculties of agriculture, horticulture, forestry and Veterinary, 2 Zonal Research Stations (Navsari and Bharuch), three main crop based research station (cotton, sorghum and mango), 3 regional research station (Waghai, Vyara and Gandevi) and 6 verification/testing centres.

The extension component includes five Krushi Vigyan Kendras (Waghai, Vyara, Navsari, Dediyapada and Surat), Sardar Smruti Kendra (Navsari), Agricultural Technology Information Centre (Navsari), Agriculture Educatorium (Navsari), Tribal Women Training Centre (Dediyapada), Agro I.T.I (Navsari) and a Training & Visit scheme (Navsari). This University also offers Diploma courses in Agriculture at Waghai, Vyara and Bharuch; Horticulture at Navsari and Paria, Animal Husbandry at Navsari and Agricultural Engineering at Dediyapada. The short duration certificate courses on Bakery, Land scaping & Gardening are also run for rural youths by the University at Navsari.

The library of the university is well equipped with collection of about 77,236 resource materials including books, e-books, periodicals, M.Sc / Ph.D Thesis, reports and CD/VCDS.

2.9 SWOC ANALYSIS

Strength

- Higher Literacy levels in the district and the same is improving further over the years.
- Falling gender gap as well as regional gap (rural & urban divide) in terms of literacy.
- Gender Parity maintained at a reasonably high level.
- Higher literacy levels among SC & ST population (higher than the Gujarat State literacy level).

Weakness

- Growth in the number of schools in the district is marginal.
- Less number of schools at the secondary and higher secondary level.
- Only about 52% of the schools have computer laboratory facility in this age of information and technology.

Opportunities

- A high number of teachers in the schools are with either secondary or just higher secondary level education. Motivating them to complete their graduation level education.
- Increasing the enrolment levels in the schools as well as the transition rate from primary to upper-primary.

Challenge

- Less number of private schools at primary level and there by a lot of pressure to ramp up the education system comes on to the government.
- Controlling the drop-out of rate due to reasons other than failures.

CHAPTER III

HEALTHCARE

IN NAVSARI

3.1 INTRODUCTION

The Constitution of the World Health Organization, which came into force on April 7, 1948, defined health "as a state of complete physical, mental and social well-being."

In the recent years, three types of definition of health seem to be possible and are used. The first is that health is the absence of any disease or impairment. The second is that health is a state that allows the individual to adequately cope with all demands of daily life (implying also the absence of disease and impairment). The third definition states that health is a state of balance, an equilibrium that an individual has established within himself and between himself and his social and physical environment.

A health system comprises of various elements such as infrastructure, human resources, data system and financial systems. Adequate infrastructure includes buildings, equipment, supplies and communications tools; forms an integral part of health services. The concept of primary health care lead to a rapid expansion of outpatient service facilities in the form of Primary Health Centre (PHCs), Dispensaries and Sub Centres (SC), with a view to take health care to the community. Developments in medical technology have led to more and better inpatient care facilities at nursing homes and hospitals that include super-specialty care and sophisticated equipment for diagnosis and treatment.

The Union Ministry of Health and Family Welfare is the central authority responsible for implementation of various programmes and schemes in areas of family welfare, prevention, and control of major diseases. In the case of health, the term infrastructure takes on a wider role than mere physical infrastructure. Healthcare centres, dispensaries, or hospitals need to be manned by well trained staff with a service perspective. In this chapter the current conditions of physical infrastructure, staff, access, and usage are laid out here before identifying critical gaps and requirements in infrastructure and services.

In this chapter we shall discuss the health care services in Navsari district. The chapter has been organized in the following manner. In section 3.2, we shall describe the performance health indicators of Navsari district. Section 3.3 focuses upon health care infrastructure in the district. From health sub-centre to district hospital, there is an elaborate arrangement for providing state sponsored medical services to the people at large. To what extent the medical need of the people could be met by the government health infrastructure is an issue which has been discussed in this section. Human

resources availability at Healthcare facilities is discussed in Section 3.4. In section 3.5, a thorough analysis on maternal health is the centre of discussion followed by Section 3.6 in which performance of Chiranjeevi Yojana is being discussed. Section 3.7 discusses about Project Ankur. Immunisation and childcare related issues with a focus on the problem of malnutrition that a section of the children in the district suffers from have been discussed in Section 3.8 followed by ICDS in Section 3.9. Issues related to malnutrition are discussed in Section 3.10. Different schemes and flagship programmes of the Government are further discussed in remaining sections. Overall SWOC analysis (Strength, Weaknesses, Opportunities and Challenges analysis) along with conclusion is carried out in Section 3.17.

3.2 PERFORMANCE INDICATORS: CRUDE BIRTH RATE (CBR) and CRUDE DEATH RATE (CDRs)

The Crude Birth Rate (CBR) and Crude Death Rate (CBR) are statistical values that can be utilized to measure the growth or decline of a population.

TABLE 3.1: CRUDE BIRTH RATE (CBR) AND CRUDE DEATH RATE (CDR) 2012 AND 2013

YEAR 2012[1]	Registered Births	CBR	Registered Deaths	CDR	Infant Deaths	NRGP
Navsari District	19361	14.6	8989	6.8	80	7.8
Gujarat	1242989	20.7	305463	5.1	7980	15.6
YEAR 2013[2]	**Registered Births**	**CBR**	**Registered Deaths**	**CDR**	**Infant Deaths**	**NRGP**
Navsari District	21411	16.0	10216	7.6	136	8.4
Gujarat	1266047	20.8	342612	5.6	12464	15.2

[1]Health Statistics-Gujarat 2012-13 Vital Statistics Division Commissionerate of Health, Medical Services, Medical Education and Research Gujarat State Statement – 48: District wise Registered Births, CBR, Registered Deaths, CDR, Infant Death and Infant Mortality Rate as per CRS, 2012.page 98 (Gandhinagar, *October, 2013)*

[2] Health Statistics-Gujarat 2013-14 Vital Statistics Division Commissionerate of Health, Medical Services,Medical Education and Research Gujarat State Statement – 48: District wise Registered Births, CBR, Registered Deaths, CDR, Infant Death and Infant Mortality Rate as per CRS, 2012.page 107 (Gandhinagar, *August 2014)*

The Crude Birth Rate and Crude Death Rate are both measured by the rate of births or deaths respectively among a population of 1000. The CBR and CDR are determined by taking the total number of births or deaths in a population and dividing both values by a number to obtain the rate per 1000. Navsari witnessed total 21,411 registered births in 2013 as per CRS data.

The Crude Birth Rate is called "crude" because it does not take into account age or sex differences among the population. Crude Birth Rates of more than 30 per 1000 are considered high and rates of less than 18 per 1000 are considered low. Navsari district has CBR less than 18 in both years 2012 and 2013. This is a good indicator of family planning measures in the district. On the other hand, Crude Death Rate below 10 is considered low while Crude Death Rate above 20 per 1000 is considered high. Navsari's CDR data indicates that total registered infants' death is very low indicating good awareness of institutional delivery and proper maternal and child care.

Natural rate of growth of population (NRGP), which is defined as the difference between the birth rate and death rate, is a vital statistics reflecting the standard of health of the population. The birth rate of the population of Navsari is lower than State's average but the Crude Death Rate of Navsari is higher than Gujarat's average CDR. Consequently, the rate of growth of population of the district is lower than that of the State.

3.2.1 PERFORMANCE GAP INDICATORS FOR SOME VITAL STATISTICS OF NAVSARI VIS-À-VIS OTHER DISTRICTS OF GUJARAT STATE

This section attempts to measure the gap in the health performance of Navsari relative to the best and worst performing districts in the state on various parameters. This is done by measuring a gap of performance on each of the health indicators to show the relative standing of Navsari. The gap indicates the distance that Navsari has to cover to reach the best performance in each indicator. A higher value of this index indicates more gap from the best and thereby a relatively poorer performance. The PGI for Gujarat in each indicator is measured using the formula mentioned in Box 3.1.

BOX 3.1 EXPLANATION ABOUT PERFORMANCE GAP INDEX AND GUIDELINES FOR ITS CALCULATION

Acknowledging the importance of health performance in overall human development index (HDI), a study by the Indian Institute of Management, Ahmedabad (IIM-A) has laid out certain performance gaps in Gujarat's health sector. Performance gaps in areas like life expectancy at birth, infant mortality rate and neo-natal rates have been calculated and published under a study titled 'What Determines Performance Gap Index of Healthcare in Gujarat?' Authored by Shreekant Iyengar and Ravindra Dholakia of IIM-A. The study attempts to identify the gaps in performance of the health related outcome, output and input indicators from the best performers in each indicator. The same methodology has been adopted by us in calculating PGI.

$$\text{Performance Gap Index (PGI)} = \frac{(\text{Best Value} - \text{Navsari's Value})}{(\text{Best Value} - \text{Least Value})} \times 100$$

As an illustration, PGI of Navsari for the IMR as per CRS 2013 requires the best performance 1 (Junagadh), least performance 38 (Ahmedabad) and value of Navsari is 6; Therefore,PGI (IMR) = [(1 – 6) / (1 – 38)] *100 = 13.51 %[3]. Thus, Navsari has only 13.51% performance gap in terms of IMR which is considered to be very good. Lower the PGI, better the performance in respective parameter.

TABLE 3.2: PERFORMANCE GAP INDICATOR (PGI) SOME VITAL STATISTICS

Indicators	PGI-Navsari Percentage	Value Navsari	Best Performer	Value	Least Performer	Value
CRUDE BIRTH RATE	**4.94**	16	Dangs	15.2	Vadodara	31.4
CRUDE DEATH RATE	**93.10**	7.6	Dahod	2.2	Ahmedabad	8.0
NRGP	**ZERO**	8.4	Navsari	8.4	Vadodara	24.5
INFANT MORTALITY RATE	**13.51**	6	Junagadh	1	Ahmedabad	38
ANC REGISTRATION	**56.33**	146.91	Mehsana	314.65	The Dangs	16.85
EARLY REGISTRATION TO ANC	**43.49**	77.44	Mehsana	88.37	Dahod	63.24

[3] Kindly refer the annexure 1

TT AGAINST ANC REGISTRATION	**35.03**	87.52	Kheda	96.54	Bhavnagar	70.79
ANC 3 CHECKUP AGAINST ANC REGISRATION	**53.53**	76.77	Porbandar	91.37	Dahod	64.06
BCG VACCINATION (% AGAINST ANNUAL WORK LOAD)	**47.97**	158.71	Vadodara	147.32	Tapi	25.50
DPT/ PENTAVALANT 3RD DOSE(% AGAINST ANNUAL WORK LOAD)	**76.84**	88.28	Mehsana	304.89	Tapi	23.04
POLIO 3RD DOSE (% OF ACHIEVEMENT)	**76.85**	153.74	Mehsana	294.58	The Dangs	13.95
MEASLES (% AGAINST ANNUAL WORK LOAD)	**50.19**	151.37	Mehsana	290.70	Tapi	23.30
VITAMIN A (1ST DOSE) (% AGAINST ANNUAL WORK LOAD)	**52.10**	87.37	Mehsana	291.64	Dangs	13.18
FULLY IMMUNISED (% AGAINST ANNUAL WORK LOAD)	**73.36**	152.63	Mehsana	279.19	Tapi	23.18
IUD PERFORMANCE (% AGAINST ANNUAL WORK LOAD)	**49.43**	79.0	Ahmedabad	101.2	Panch Mahal	77.7
CC USERS (% AGAINST ANNUAL WORK LOAD)	**82.02**	28.2	Bhavnagar	93.9	Junagadh	13.8
OP USERS (% AGAINST ANNUAL WORK LOAD)	**96.36**	37.7	Bhavnagar	143.5	Anand	33.7

Source: Calculated on the basis of Statistics available on Health Statistics Gujarat 2013-2014

The performance gaps in IMR (13.51) of Navsari is very low which is good indicator, Navsari relatively is the top performer as far as Crude Birth Rate is concerned (4.94), but the Crude Death Rate is relatively very high in Navsari putting it closer to poorest performer in the State. The Natural Rate of Growth of Population is the topmost index for Navsari as its zero, putting Navsari on top among all districts of Gujarat. A few indicators mentioned above should be interpreted wisely as details related to contraceptive users and Oral Pill users may not be correct. Contraceptive user may be shy in disclosing information about its usage for family planning. Referring to all the figures mentioned above we can get an overall picture of health care of Navsari. Very high Performance Gaps lies in terms of CDR, Polio 3rd Dose, CC and OP users in Navsari. A more careful investigation is required to find out the reasons behind widened gap. Most of the Annual Work Load targets have been achieved by Navsari district but special attention needs to

be given to DPT/Pentavalance Immunization and Full Immunization of Children residing in Navsari.

3.3 PHYSICAL INFRASTRUCTURE: HEALTH STATISTICS

Gujarat has an extensive network of health and medical service institutions. To meet primary health care needs, it has 1073 Primary Health Centres, 7274 Sub Centres, and 273 Community Health Centres to meet emergency referral needs. In keeping with the rich voluntary tradition of Gujarat State, about 54% of bed capacity is in the NGO sector (mainly the voluntary institutions and partly the private sector). However, the major and widely accessible medical service provider remains the government sector, on which the poor, the rural, and tribal population depends, for their Medicare needs.

TABLE 3.3 HEALTH INFRASTRUCTURES AT A GLANCE (2013-2014)

No	Type	Number of units	Beds
1	Allopathic Hospital	01	290
2	Community health centers	11	456≠
3	Primary health centers	39	234≠
4	Ayurvedic Dispensaries	4	Not Available
5	Sub Centers	281	Not Applicable
6	Private Hospitals	40	Not Available
TOTAL			1014 BEDS€ (Excluding private hospitals)

Source: Compiled from data available from CDHO, Navsari

Therefore, the Government of Gujarat is committed to strengthen its medical services network throughout the State, towards achieving health, minimizing disease and disability, and enabling better productivity of its population.

In the public health system, besides district hospital and sub divisional hospital, PHCs and CHCs have a crucial role to play as the secondary level of health care. PHC is a basic unit providing an integrated curative and preventive health services to the rural community with an emphasis on promoting services. A PHC functions as a referral unit for 6 sub-centres. It caters to 30,000 populations in general areas and 20,000 populations in tribal or desert areas and four to five PHCs are attached to each of the CHCs. The CHCs cater to

≠ MIS Rural Health Report 2014

€Health Statistics 2013-2014

the health needs of the rural masses by providing first referral curative as well as specialized health care in various areas. Generally, one CHC covers about 80,000 populations in tribal/hilly areas and 1,20,000 populations in plain areas. The availability of various facilities at CHC level including diagnostic services and laboratory testing is very important along with curative and other services to deliver complete health care at the grassroots level. PHC refers out cases to a CHC and higher order public hospitals and sub-district hospitals.

In a study conducted by Independent Commission on Development of Health in India, New Delhi an in-depth decentralized analysis of India's primary health care delivery system at the district level was carried out and each district was represented with a colour code in the maps of the respective state so as to enable the policy makers, parliamentarians to identify immediately the degree of vulnerability of the districts, rural health infrastructure including infrastructure, staff and supply are the most important indicators to assess the state of health facility in the country. Data collected from International Institute for Population Sciences (IIPS), Mumbai which is the nodal agency of the Ministry of Health & Family Welfare, Government of India (GOI), conduct surveys on Reproductive and Child Health was collected by the Commission. For infrastructure, Facility Survey (2003) summary reports, and for performance latest district level data published in 2006 by IIPS, Mumbai, in the DLHS (2002-2004) report, sponsored by GOI, Ministry of Health & Family Welfare were considered.

This Study conducted (Bose & Adhikary, 2008) considered 1) Percent of PHCs adequately equipped in staff 2) Percent of PHCs adequately equipped in infrastructure and 3) Percent of PHCs adequately equipped in the supply of drugs, etc.

For the SIS as well as the performance index scoring, at an all India level the researchers have calculated the number of districts falling in the Red (Dark Red + Light Red), Yellow (Dark Yellow + Light Yellow) and Green (Dark Green + Light Green) and also calculated the percent of red districts, percent of yellow districts and percent of green districts in each state. And depending on the proportion of districts of a particular colour, the state gets its colour. The 3 colours red for low, yellow for medium and green for high indices.

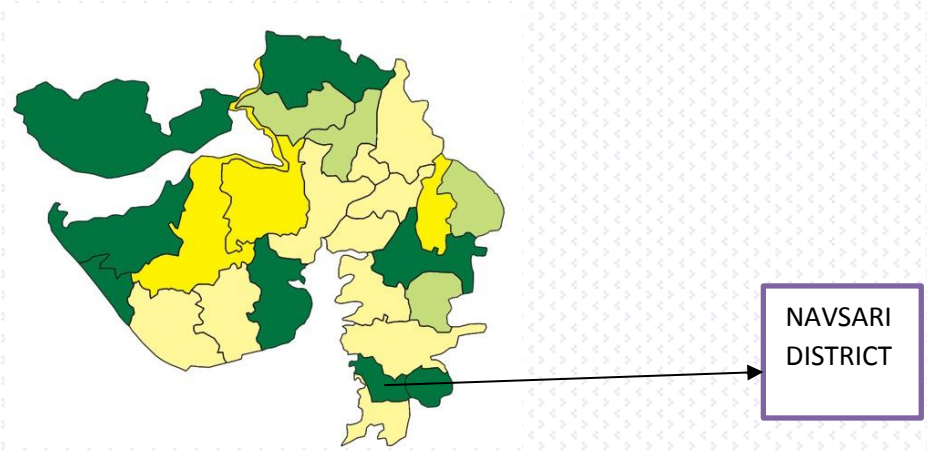
Figure 3.1 mentioned below shows Navsari in a dark green zone, which is 'very good' rating after considering percentage of PHCs adequately equipped in staff, percentage of

PHCs adequately equipped in infrastructure and percentage of PHCs adequately equipped in the supply of drugs.

Along with the above mentioned positive aspects of the district it may be noted that Navsari is also ranked 33 amongst 593 total districts of India according to one study conducted by National Population Stabilisation Fund. National Population Stabilsation fund had used Ranking and Mapping of Districts, of year 2006 conducted by International Institute for Population Sciences, Deonar, Mumbai(An autonomous institution under the administrative control of the Ministry of Health and Family Welfare, Government of India).

Healthcare system is spread across Urban and rural areas of Navsari district in year 2010-2011 there was one allopathic district hospital with bed capacity of 290. Rural areas are served by 39 PHCs, 281 Sub Centres in addition to 10 CHCs; Ayurvedic Hospitals are 19 in number. Whereas, Private hospitals as per statistics of 2010-2011 were 40.[4]

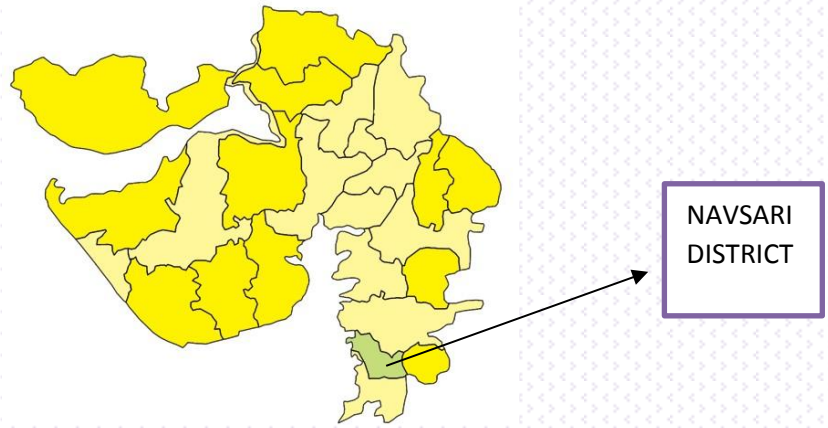
FIGURE 3.1: NAVSARI'S STATUS BASED ON INDEPENDENT COMMISSION ON DEVELOPMENT OF HEALTH IN INDIA (FIGURE BASED ON SIS SCORE)[5]



[4]*ANGANDWADI CENTRES*. (2015, March 10). Retrieved March 2015, 16, from NAVSARI DISTRICT PANCHAYAT GOVERNMENT OF GUJARAT: http://navsaridp.gujarat.gov.in/Navsari/shakhao/sanyukt-bal-vikas/aaganvadi-kendro.htm

[5]SIS: for each of the 3 infrastructure indicators, scoring has been given and by adding up the scores against all the 3 indicators, a composite SIS score was derived for each district. The districts have been then classified in different groups and have been put under different colour coding for mapping. The districts have been classified under six colour codes ranging from the worst to best (Dark Red, Light Red, Dark Yellow, Light Yellow, Light Green, and Dark Green). In simple words, Dark Red stands for very bad score, Light Red is bad, Dark Yellow is moderately bad, Light Yellow is moderately good, Light Green is good and Dark Green is very good. Thus, Navsari falls in 'very good' zone.

FIGURE 3.2 : NAVSARI'S STATUS BASED ON INDEPENDENT COMMISSION ON DEVELOPMENT OF HEALTH IN INDIA (FIGURE BASED ON RURAL PUBLIC DELIVERY IN DISTRICT OF GUJART)[6]



If we closely observe the figure mentioned below, Chikhli and Vansda (also known as Vansda) Talukas are having maximum number of Sub Centres. Majority of the area of Navsari falls under the rural belt where Chikhli and Vansda are tribal talukas.

3.3.1 SUB CENTRES

Talukas	Total Population (Rural Population)	Priority[7]	Sub Centres	Actual Requirements of SC	Additional Requirement of Sub Centres
Navsari	109692	Normal	39	22	Adequate (no shortfall)
Jalalpore	136071	Normal	39	27	Adequate (no shortfall)
Gandevi	154764	Normal	46	31	Adequate (no shortfall)
Chikhli	302852	Priority	95	101	06
Vansda	217156	High Priority	62	72	10

Navsari accounts for 3.86% of total Sub Centres available in Gujarat and caters to the health needs of five talukas.

[6]Performance: For rural health care services also, five indicators were scored and by adding up the individual scores, a composite performance index was arrived at. Colour coding of composite performance index for mapping was done and the districts were classified again under 6 colour codes ranging from the worst to the best (Dark Red, Light Red, Dark Yellow, Light Yellow, Light Green, Dark Green). Here Navsari scored Light green which was best in Gujarat

[7]*ANGANDWADI CENTRES*. (2015, March 10). Retrieved March 2015, 16, from NAVSARI DISTRICT PANCHAYAT GOVERNMENT OF GUJARAT: http://navsaridp.gujarat.gov.in/Navsari/shakhao/sanyukt-bal-vikas/aaganvadi-kendro.htm

According to the national norm there should be one primary health Sub-Centre per 5000 population in plain area and for 3000 population in tribal, hilly and backward area. Again, there should be one primary health center for 30,000 populations in plain area and for 20,000 populations in tribal, hilly and backward area.

In Navsari, five talukas are considered (Khergam is not included as it was added after March 31,2014 as the sixth taluka of Navsari district). As per NRHM report, Chikhli and Vansda are considered to be priority and high priority talukas respectively. Taking this into consideration, in Table 3.4 we have calculated the current infrastructural gap in rural health care system (Sub-Centres).

For this calculation, we have taken the rural population as per census 2011.

Considering the gaps in infrastructure for Sub-Centres, one might observe that the shortfall in the number of SCs is the highest in Vansda Taluka. Chikhli Taluka also observes that shortfall of 6 Sub-Centres.

It may be noted here that the aggregate does not however reveal the fact that there is anomaly in the inter-block distribution of the Sub-Centres (SC) in the district.

3.3.2: PRIMARY HEALTH CENTRES

TABLE 3.5 INFRASTRUCTURAL GAPS IN RURAL HEALTH CARE SYSTEM (PRIMARY HEALTH CENTRES)

Talukas	Population (Rural)	Priority	Primary Health Centres	Actual Requirements of PHCs	Additional Requirement of PHCs
Navsari	109692	Normal[8]	5	4	Adequate (no shortfall)
Jalalpore	136071	Normal	7	5	Adequate (no shortfall)
Gandevi	154764	Normal	6	6	Adequate (no shortfall)
Chikhli	302852	Priority	13	15	2
Vansda	217156	High Priority	8	11	3

Source: Compiled from data available from CDHO, Navsari

[8] *ANGANDWADI CENTRES*. (2015, March 10). Retrieved March 2015, 16, from NAVSARI DISTRICT PANCHAYAT GOVERNMENT OF GUJARAT: http://navsaridp.gujarat.gov.in/Navsari/shakhao/sanyukt-bal-vikas/aaganvadi-kendro.htm

According to the national norm one primary health center for 30,000 populations in plain area and for 20,000 populations in tribal, hilly and backward area. Navsari district needs 5 more PHCs to cater the health needs of the population, but it may be noted that Navsari and Jalalpore has PHCs exceeding the national norm. As of March 31, 2014, a total of 40 PHCs are sanctioned where 26 are sanctioned for tribal area and 14 are sanctioned for non-tribal areas. Out of these, all 26 are functional in tribal area but only 13 are functional in non-tribal area of Navsari district. There are 234 beds in 39 PHCs of Navsari district.[9]

3.3.3 COMMUNITY HEALTH CENTRES

Health care delivery in India has been envisaged at three levels namely primary, secondary and tertiary. The secondary level of health care essentially includes Community Health Centres (CHCs), constituting the First Referral Units (FRUs) and the Sub-district and District Hospitals. The CHCs were designed to provide referral health care for cases from the Primary Health Centres level and for cases in need of specialist care approaching the centre directly. 4 PHCs are included under each CHC thus catering to approximately 80,000 populations in tribal/hilly/desert areas and 1,20,000 populations for plain areas. CHC is a 30-bedded hospital providing specialist care in Medicine, Obstetrics and Gynecology, Surgery, Pediatrics, Dental and AYUSH. 10

TABLE 3.6 NUMBERS OF BEDS AVAILABLE AT CHCs IN NAVSARI DISTRICT

Talukas	Type of Taluka	No.	Village/ Town	No. of Beds
Vansda	High Priority	1	Limzar	30
Chikhli	Priority	2	Chikhli	70
		3	Rumla	30
		4	Khergam	30
Gandevi	Normal	5	Amalsad	30
		6	Gandevi	30
Jalalpore	Normal	7	Mandir	30
		8	Maroli	30
Navsari	Normal	9	Ambada	30
		10	Khadsupa	30

[9] MIS Rural Health Report 2014 - Statement – 16 District wise Primary Health Centres and No. of Beds In Gujarat, as on March, 2014 available on http://www.gujhealth.gov.in/publications-and-survey-report.htm
[10] http://health.bih.nic.in/docs/guidelines/guidelines-community-health-centres.pdf

Assessment of the infrastructural gap for Community Health Centre in Navsari presents a brighter view. Only Vansda Taluka needs two additional CHCs. There are adequate CHCs for the population of Jalalpore and Gandevi Talukas.

TABLE 3.7 INFRASTRUCTURAL GAPS IN RURAL HEALTH CARE SYSTEM (COMMUNITY HEALTH CENTRES)

Talukas	Population (Rural Population)	Priority [11]	Community Health Centre	Actual Requirement of CHCs	Additional Requirement of CHCs
Navsari	109692	Normal	2	1	Adequate (no shortfall)
Jalalpore	136071	Normal	2	2	Adequate (no shortfall)
Gandevi	154764	Normal	2	2	Adequate (no shortfall)
Chikhli	302852	Priority	3	4	1
Vansda	217156	High Priority	1	3	2

Source: Compiled from data available from CDHO, Navsari

Community Health Centres (CHC) forming the uppermost tier established and maintained by the State Government. Four medical specialists including Surgeon, Physician, Gynecologist, and Pediatrician supported by twenty-one paramedical and other staff are supposed to staff each CHC. Norms require a typical CHC to have thirty in-door beds with OT, X-ray, Labour Room, and Laboratory facilities. A CHC is a referral centre for four PHCs within its jurisdiction, providing facilities for obstetric care and specialist expertise. Navsari has shortfall of a meager17% CHCs as per 2013-2014 statistics. This is not a major gap and can be improved by introducing CHCs in Vansda and Chikhli Talukas.

3.3.4 ANGANDWADI CENTRES

The Integrated Child Development Services (ICDS) provides an integrated approach for converging six basic services for improved childcare, early stimulation and learning, health and nutrition, education, primarily targeting young children (0-6 years), expectant

[11] *ANGANDWADI CENTRES*. (2015, March 10). Retrieved March 2015, 16, from NAVSARI DISTRICT PANCHAYAT GOVERNMENT OF GUJARAT: http://navsaridp.gujarat.gov.in/Navsari/shakhao/sanyukt-bal-vikas/aaganvadi-kendro.htm

and nursing mothers. The Anganwadi Centre is the operational unit of ICDS at habitation level which is also used for other related schemes like SABLA, IGMSY and RCH which benefit pregnant women, children and adolescent girls. ICDS has been the seat of several good practices over the past two decades and the States and Union Territories continue to add newer endeavors each year.

Anganwadi workers (AWW) providing integrated services comprising supplementary nutrition (SN), Immunisation, health check-up, and referral services to children below six years of age and expectant and nursing mothers. Non-formal pre-school education (PSE) is imparted to children of the age group 3-6 years, and nutrition and health education day (NHED) conducted for women in the age group 15-45 years.[12]

In Navsari, 1329 Anganwadis are sanctioned and all of them were functional as per March 31, 2014 data.[13]

TABLE 3.8 AANGANWADI CENTRES OF NAVSARI DISTRICT

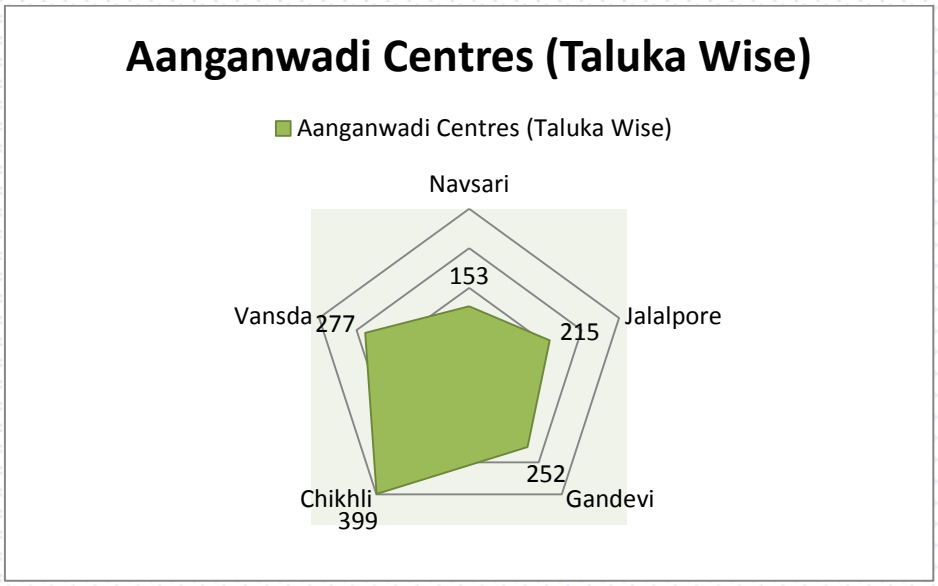
1.	Scheme self-owned houses	1191
2.	In schools houses	15
3.	In gram panchayat houses	14
4.	In rented houses	45
5.	In non-rented houses	64

(Source: Navsari District Panchayat Website, 2015)

[12] Three Decades of ICDS-An Appraisal. National Institute of Public Cooperation and Child Development (NIPCCD), 2006. Available from: http://nipccd.nic.in/ reports/icdsvol3.pdf. Accessed February 28,2015.

[13] *ANGANDWADI CENTRES*. (2015, March 10). Retrieved March 2015, 16, from NAVSARI DISTRICT PANCHAYAT GOVERNMENT OF GUJARAT: http://navsaridp.gujarat.gov.in/Navsari/shakhao/sanyukt-bal-vikas/aaganvadi-kendro.htm

FIGURE 3.3 : TALUKA WISE DISTRIBUTION OF AANGANWADI CENTRES



Source: Compiled from data provided by CDHO, Navsari

Chikhli tops the list with 316 functional Aanganwadis followed by Vansda Taluka with 277 and Gandevi, Jalalpore and Navsari with 240, 233 and 184 Aanganwadis respectively. A newly formed Taluka Khergam has 79 Aanganwadis as per September 2015 statistics provided by CDHO, Navsari.

3.3.5: AYURVEDIC AND HOMEOPATHIC DISPENSARIES

District Panchayat Navsari has 17 Ayurvedic Hospital under its administration followed by 5 Homeopathic hospitals.

In Navsari taluka 3 healthcare units offering Ayurvedic treatment and consultancy are located at Pera, Dharagiri and District Hospital's OPD.

Chikhli taluka has 6 Ayurvedic Units functioning at Surkhai, Kakadvel, Paati, Dholwabar, Mandav and Khadak, In Vansda taluka, 6 Ayurvedic units are located at Pratapnagar, Bhinaar, Champal Dhara and Vangan,Vansda and Upsal. In Jalalpore taluka 2 Ayurvedic hospitals Moroli and Talwadi are established. In Gandevi taluka 2 units at Dhadakvaada and Voloti adds to the list. Thus totally 19 Ayurvedic hospitals are situated.

Similarly, Homeopathic hospitals are situated in Dandi and 5 homeopathic units (at S.H.C.) are functional at Gandevi, Khadsupa, Rumla, Abrana and Vansda.

3.3.6 POPULATION SERVED BY SCs, PHCs and CHCs in 2013-2014

In 2005, Government launched the National Rural Health Mission (NRHM) to improve access to quality health care, especially for poor rural women and children, to strengthen primary health care institutions, increase equity and the decentralization of services, and encourage states to generate alternate sources of financing.

TABLE 3.9 Taluka Wise Average Population Served By SCs, PHCs and CHCs , 2013-14

Sr. No.	Talukas	SCs	Gap as per National Norm	PHCs	Gap as per National Norm	CHCs	Gap as per National Norm
1	**Navsari**	2813	No Gap (adequate Sub Centres)	21939	No Gap (adequate PHCs)	54846	No Gap Adequate CHCs
2	**Jalalpore**	3489	489	19439	No Gap (adequate PHCs)	68035	No Gap Adequate CHCs
3	**Gandevi**	3364	No Gap (adequate Sub Centres)	25794	No Gap (Adequate PHCs)	77382	No Gap Adequate CHCs
4	**Chikhli**	3188	188	23297	3297	100951	No Gap Adequate CHCs
5	**Vansda**	3503	503	27145	7145	217156	97156

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

The national norm for population coverage per sub-centre as laid down in the year 1987 was 3000 for tribal and 5000 for plain areas. Similarly, it was fixed at 20,000 (tribal) to 30,000 per PHC and 80,000(tribal) to 1.20 lakh per CHC. In Navsari district, sub-centres established in Navsari and Gandevi taluka serves population as per national norms but, there is a shortfall of Sub Centres in Jalalpore followed by Vansda and Chikhli. Similarly, if we discuss about PHCs, Navsari and Gandevi have adequate numbers but there is a great shortfall in Vansda Taluka followed by Chikhli. Simiilarly, Vansda requires more CHCs as per the national norm to serve its population in a better manner. Thus, while the actual population coverage of a sub-centre and PHC, is on an average, as per norms. Since CHC is required to act as a referral centre, this mis-match in the number of PHCs and CHCs is likely to create undue pressure on the limited services made available through CHCs.

But in an interesting observation it was noted that, as against 4 PHCs per CHC, there were, exactly 10 CHC against 39 PHCs in Navsari.

3.3.7 INDOOR AND OUTDOOR PATIENTS SERVED BY HEALTHCARE FACILITIES

In year 2013-14, a total of 9,72,278 outdoor patients were treated by PHCs, CHCs and District Civil Hospital. 1,06,545 patients took treatment as indoor patients in various governmental health facilities.[14]

Figure 3.4 represents the total Outdoor patients served by PHCs. Here, PHCs located in Vansda and Chikhli are observed to be serving maximum number of patients among all oudoor Patients served. The possible reasons are it rural nature and lack of inclination for visiting more private doctors.

FIGURE 3.4: OUTDOOR PATIENTS SERVED BY PHC, CHC AND CIVIL HOSPITAL (2013-2014)

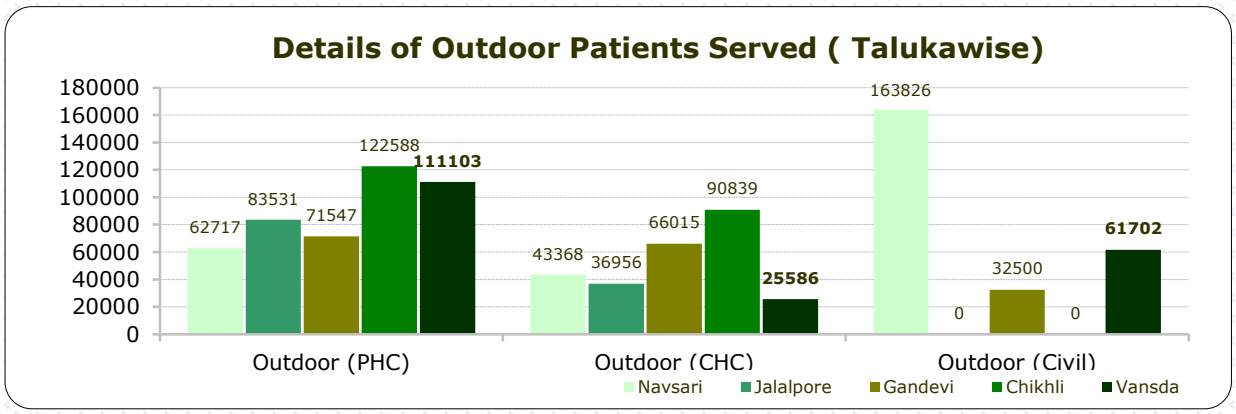
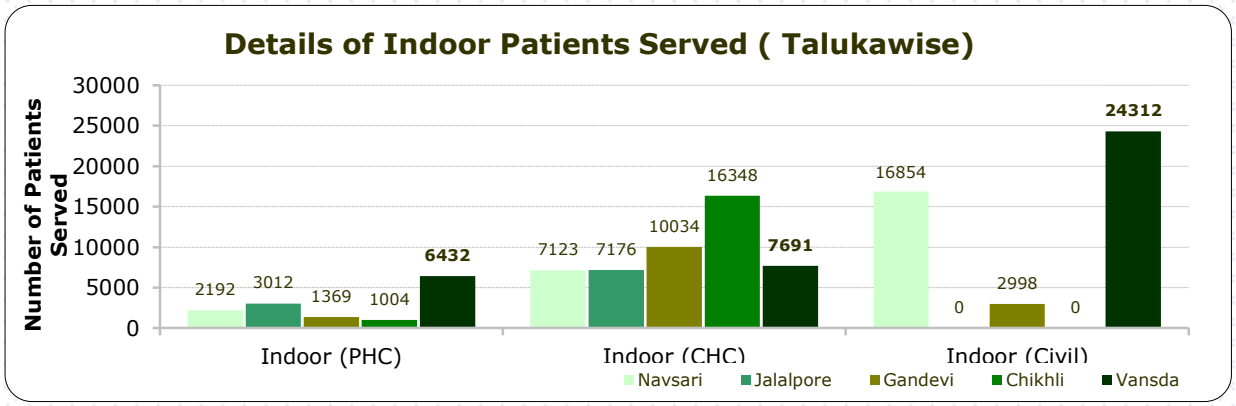


FIGURE 3.5: INDOOR PATIENTS SERVED 2013-2014



Source: Prepared on basis of data of Census &Commissionerate of Health, Medical Services, Medical Education and Research, Gujarat

[14] CDHO, Navsari (2013-14) Statistics

Similarly, it is observed that Total Indoor patients are more served by PHCs located in Vansda Taluka. CHCs located in Chikhli and Gandevi are observed to be catering to more patients (both Outdoor and Indoor). As the Civil hospital is situated in Navsari town, here the above figure indicates more outdoor patients' visiting Navsari Civil hospital. One more reason could be availability of basic amenities. But, more Indoor patients from Vansda were seen to be availing the facility of District and Civil hospital.

BOX 3.2- QUALITY IMPROVEMENT PROGRAMME- A SUCCES STORY

PHC MAHUVAS (NAVSARI DISTRICT) BECOMES INDIA'S SECOND NABH/NABL ACCREDITATED GOVERNMENT FACILITY

After success of the Quality Improvement Programme in PHC & CHC which is mainly focused on ***Reproductive and child health care (RCH),*** Government of Gujarat decided to implement total quality management system (NABH / NABL) in Government managed hospitals. As key contributors for building trust and confidence for the hospitals in the hearts of the citizens, Government of Gujarat actively participated in quality improvement programme in various facilities e.g. Medical College Hospitals, Medical College Laboratories, District Hospitals, Community Health Centers (CHCs) and Primary Health Centers (PHCs) through National Accreditation Board for Hospitals and Health Care Providers (NABH) and National Accreditation Board for Testing and Calibration Laboratories (NABL) Standards.
In Navsari district, PHC-Mahuvas enjoys the reputation of being the second NABH / NABL accredited Govt. facility in entire India. This is a remarkable achievement as far as a healthcare aspect of Navsari district is concerned.

PHC Mahuvas and other government healthcare facilities show remarkable improvement in its working style since its accreditation. Some benefits offered to the community post accreditation are as follows:

- Improved Care of the patients
- Brings Corporate Governance
- Stimulates Continuous improvement
- Demonstrates commitment to quality care
- Raises community confidence especially of the majority of tribal population of the area nearby
- Opportunity to benchmark with the best

Following the success of PHC Mahuwas(Block-Vansda) two more PHCs located in Navsari Distirct, PHC- Tankal (Block- Chikhli) and PHC- Kandolpada (Block- Vansda) were also accredited by NABH/NABL.

Accreditation also provides number of benefits to hospital staff. They are as follows:

Improves professional staff development

Provides education on consensus standards

Provides leadership for quality improvement within medicine and nursing

Increases satisfaction with continuous learning, good working environment, leadership and ownership

MAHUVAS'S PRIMARY HEALTH CENTRE SOURCE: Field Visit

Source: Field Visit

Award for NABH Accredited PHC :- Primary Health Center - Tankal, Navsari-Gujarat, Govt of Gujarat given by *Shri Jaynarayan Vyas, Hon'ble Health Minister, Government of Gujarat*

Award for NABH Accredited PHC :- Primary Health Center - Kandolpada, Navsari-Gujarat, Govt of Gujarat given by *Shri Jaynarayan Vyas, Hon'ble Health Minister, Government of Gujarat*

Source: Dr.J.L.Meena. (n.d.). *Quality Improvement Programme (Towards Excellence Health Centre for the Community).* Retrieved March 3, 2015, from www.gujhealth.gov.in: http://2013.conclave.qci.org.in/pres/jmeena.pdf

3.4 HUMAN RESOURCES AVAILABILITY IN HEALTHCARE (CHCs)

The human resource dimension of the public health delivery system at Navsari presents a bleak picture. The availability of human resources in the district shows that the total number of sanctioned posts for the categories of General Surgeon, Physicians, Gynecologist and Pediatrician are 6 each and for Medical Officer 39 posts are sanctioned. However, the problem of vacant posts is evident in certain categories. As far as filling up vacancies of Physicians and Pediatricians is concerned only 1 out of 6 positions are filled; creating a huge scarcity of 5 gynecologists in the district. 3 positions of General surgeons are vacant as per statistics available.

TABLE 3.10 HEALTH PERSONNEL AT COMMUNITY HEALTH CENTRES, 2013-14

Sr. No	Talukas	Name of CHC	General Surgeon		Physician		Gynaecologist		Paediatrics		MO (MBBS)	
			S	F	S	F	S	F	S	F	S	F
1	Navsari	Ambada	0	0	0	0	0	0	0	0	4	3
		Khadsupa	0	0	0	0	0	0	0	0	4	4
2	Jalalpore	Mandir	1	0	1	0	1	0	1	0	3	3
		Maroli	1	1	1	0	1	0	1	0	3	3
3	Gandevi	Gandevi	0	0	0	0	0	0	0	0	6	6
		Amalsad	0	0	0	0	0	0	0	0	3	3
4	Chikhli	Chikhli	1	1	1	0	1	1	1	0	4	4
		Rumla	1	1	1	0	1	0	1	0	4	3
		Khergam	1	0	1	0	1	0	1	0	4	4
5	Vansda	Limzar	1	0	1	0	1	0	1	0	4	4
District Total			6	3	6	0	6	1	6	0	39	37

Source: Compiled from the data of CDHO, Navsari (2013-2014)

S *Sanctioned*

F *Filled*

Majority of the Talukas in Navsari District have filled up all the sanctioned posts of Medical officers expect Navsari. 20% vacant postion of Medical officers can be found in Navsari Taluka. Similarly, Medical Officers (AYUSH) are the least in Chikhli Taluka of Navsari. Staff Nurses are found to be inadequate in Navsari Taluka and Vansda Taluka. Persisting staffing shortages are another important reason for the relatively weak state of health service delivery in Navsari district. Against 295 sanctioned posts of ANMs/female health Workers at the PHCs, 26 positions (17.28%) are currently vacant.

TABLE 3.11 TALUKAWISE DETAILS OF DOCTORS AND NURSES, 2013-14

Sr. No.	Taluka	MO (MBBS)		MO (AYUSH)		Staff Nurses		ANM/FHW	
		S	F	S	F	S	F	S	F
1	Navsari	25	20	5	3	56	39	53	45
2	Jalalpore	7	7	2	2	0	0	39	29
3	Gandevi	6	6	2	2	2	2	46	40
4	Chikhli	13	13	13	3	6	3	95	87
5	Vansda	8	8	5	5	16	7	62	43
District Total		**59**	**54**	**27**	**15**	**80**	**51**	**295**	**244**

Source: Compiled from the data of CDHO, Navsari (2013-2014)

ANMs/ FHW's shortage reaches critical levels in case of Jalalpore (34.48%) and Vansda (30.64%). Highest shortage lies where 80 sanctioned posts of staff nurses with only 51 incumbents in position and a vacancy in as many as 36.25% is evident. Under the current staffing patterns where the current staff members are assigned largely complementary functions, the absence health staff would bring immunisation, MCH and attended delivery services at least to a virtual standstill, adversely affecting a rural and tribal population of Navsari. Here again, Vansda has highest number of vacant position as far as staff nurses are concerned to high figure of 56.25% which is more than half-the positions being vacant.

Even Medical Officers post (AYUSH) remain vacant. High vacancy rates among human resources in healthcare area of Navsari will affect the performance of host of auxiliary community health activities including school health programmes. Along with this the reliability of the recording of vital events, malaria & TB screening procedures, disease surveillance as well epidemic control would be severely compromised in most rural areas of the district.

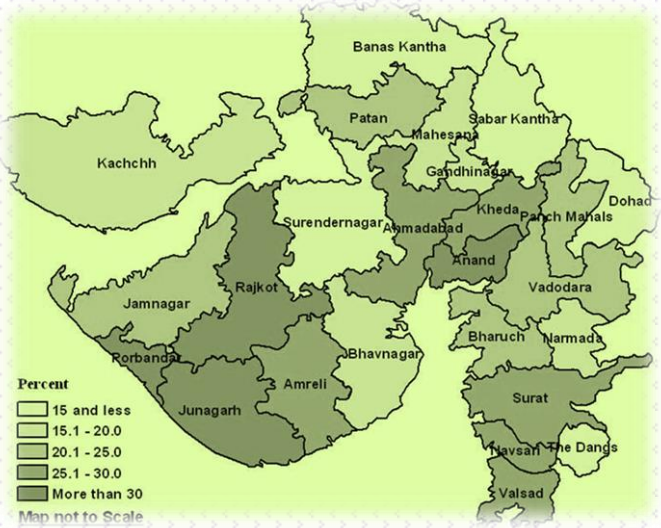
Nonetheless, if the few vacant posts in both the categories of staff are filled up on a priority basis, it would reinforce the system to meet the health needs of the masses efficiently and effectively. The adequate and trained human resources significantly contribute to improvement health outcomes at various levels and is directly related to the increase in utilization of health services.

3.5 MATERNAL HEALTH

Maternal health care package of antenatal care is the main programme of National Rural Health Mission (NRHM) to strengthen Reproductive and Child health (RCH) care. ANC provided by a doctor, an ANM or other health professional comprises of physical checks, checking the position and the growth of foetus and giving TT injection at periodic intervals during the time of pregnancy. At least three check-ups are expected to complete the course of ANC to safeguard women from pregnancy related complications. Institutional delivery and post-natal care in a health facility is promoted in NRHM through the Janani Suraksha Yojana (JSY) to prevent maternal deaths.

In one very interesting finding from survey made by NRHM, the coverage of ANC is highest in Navsari district (89.3 percent) amongst all district selected for survey in Gujarat, women availed ANC service either from a government, or private health facility or from both facilities. [15]

FIGURE 3.6 FULL ANTE NATAL CHECK UP BY DISTRICTS



As per SRS 2013, The Maternal Mortality Ratio is estimated at 122 per 1,00,000 live births which has decreased by 26 points from 148 in 2007-09. However, improvement in the nutritional status of women continues to be a challenge with every second adolescent and

[15] *ANGANDWADI CENTRES*. (2015, March 10). Retrieved March 2015, 16, from NAVSARI DISTRICT PANCHAYAT GOVERNMENT OF GUJARAT: http://navsaridp.gujarat.gov.in/Navsari/shakhao/sanyukt-bal-vikas/aaganvadi-kendro.htm

more than half of the women (55%) in reproductive age group suffering from anemia. Pregnancy anemia is almost universal.[16]

Besides implementation of national programmes such as the National Rural Health Mission and schemes such as the Janani Shishu Suraksha Yojana; Janani Suraksha Yojana ,Chiranjeevi Yojna, Kasturba Poshan Sahay Yojana, etc are some of the state innovative 'missions' to bring about an improvement in the health status of women and children in the state. These efforts are welcome and indicative of the state's attention for maternal and infant mortality reduction. However, translating these efforts in to action has given rise to several concerns.

3.5.1 PERFORMANCE OF EARLY ANC TO TOTAL ANC IN NAVSARI DISTRICT

Antenatal care (ANC) refers to pregnancy related health care. Women rarely perceive child bearing as problematic and therefore do not seek care. This affects the utilization of ANC services in regions of the country where poverty and illiteracy are wide spread. To increase the number of women for early registration, Antenatal care (ANC) is widely used for prevention, early diagnosis and treatment of general medical and pregnancy-related complications. Consuming IFA tablets, two TT injections and counseling, and thereby to increase the antenatal coverage up to 90% is one of the objectives of the Reproductive and Child Health-II. Also under RCH II there is increased emphasis on mobilization of community for weekly ANC clinics at health facilities named as Mamta Day or Village health and Nutrition Day (VHND).[17]

Antenatal visits raise awareness and make pregnant women and their families familiar with health facilities, which enable them to seek help more efficiently during a crisis. Utilization of antenatal care services promotes the preference for institutional deliveries.[18] National Family Health Survey-3 (NFHS-3) reveals just over half of mothers (52%) had three or more antenatal care visits. Urban women were much more likely to

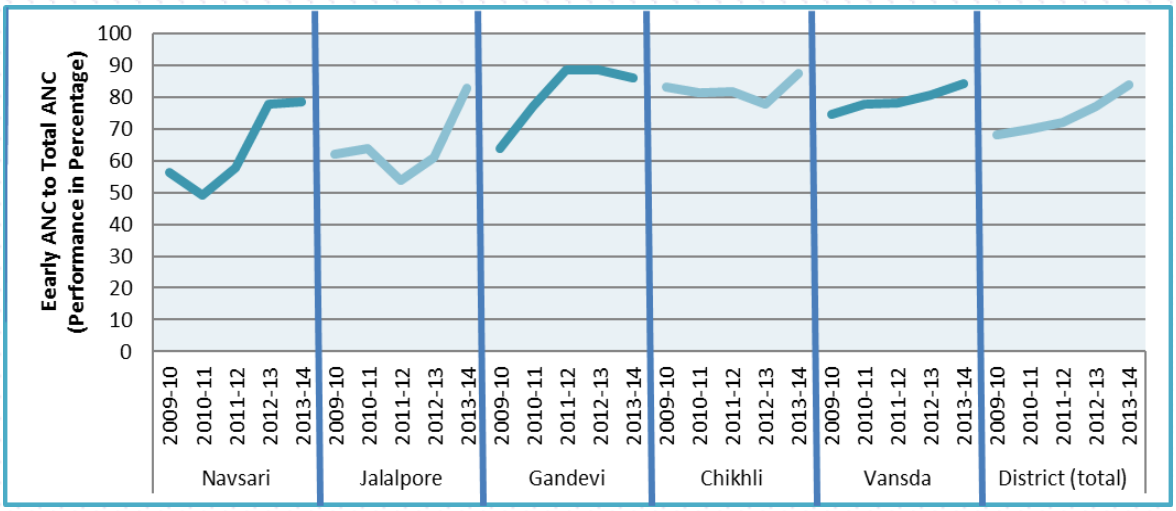
[16] SRS 2013

[17] State Programme Implementation Plan. Reproductive and Child Health (RCH) II. Department of Health & Family Welfare, Government of Gujarat. January 2005. Available on http://www.gujhealth.gov.in/pdf/rch2final.pdf (accessed on 7 Feb 2013).

[18] Nomita Chandhiok, Balwan S Dhillon, IndraKambo, et al, Determinants of antenatal care utilization in rural areas of India : A cross-sectional study from 28 districts (An ICMR task force study) J ObstetGynecol India Vol. 56, No. 1 : January/February 2006 Pg 47-52

have three or more antenatal visits than rural women.[19]Figure 3.12 mentioned below represent the same. It is evident from the exhibits that Vansda and Chikhli being rural areas with majority of tribal inhabitants, they avail the facility of early Antenatal care from rural areas only. ANC registration of Chikhli (rural) was the best since 2009-2010 to 2013-14 with an average of around 80% registration. The performance on the same parameters does not look good in Navsari, the possible reason could be availability of private clinics in Navsari's urban area. However, Jalalpore's performance was remarkable in urban area with 102% in 2013-14.

FIGURE 3.7: EARLY ANC TO TOTAL ANC IN RURAL AREAS (TALUKA WISE)



Source: Compiled from data available from CDHO, Navsari

TABLE 3.12: % of EARLY ANC TO TOTAL ANC IN URBAN AREAS

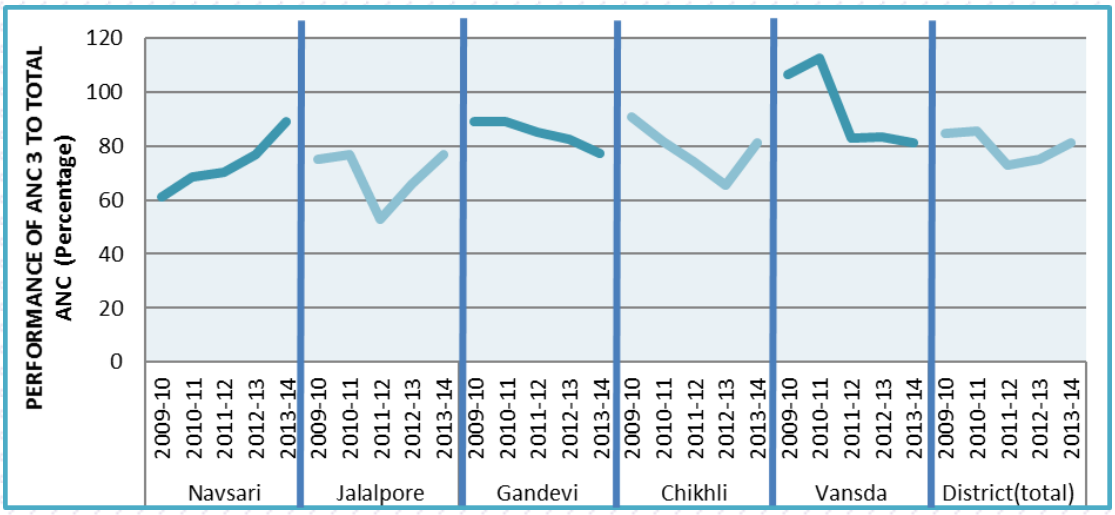
Talukas with Urban Population	2009-10	2010-11	2011-12	2012-13	2013-14
Navsari	0.00	0.00	0.00	40.71	44.80
Jalalpore	26.00	46.00	26.00	46.00	102.00
Gandevi	39.00	37.05	53.00	56.00	54.95

[19] International Institute for Population Sciences (IIPS). National Family Health Survey (NFHS-3), 2005-2006: India Volume 1. Mumbai; IIPS. 2007: p192-196

3.5.2 PERFORMANCE OF ANTENATAL CARE FOR 3 OR MORE TIMES TO TOTAL ANC

Vansda Taluka outperforms in all aspects of providing Antenatal Care to the inhabitants for three or more times. 2010-11 and 2011-12 had been remarkable years where more than 100% targets were achieved by the community health facilities in these areas. A rise in ANC 3 to Total ANC was also witnessed in Navsari Taluka, but Chikhli's rural areas saw a fall in year 2012-13.

FIGURE 3.8: ANC 3 TO TOTAL ANC IN URBAN AREAS (TALUKA WISE)



Source: Compiled from data available from CDHO, Navsari

TABLE 3.13: % of ANC 3 TO TOTAL ANC IN URBAN AREAS

Talukas with Urban Population	2009-10	2010-11	2011-12	2012-13	2013-14
Navsari	0.00	0.00	0.00	56.26	57.69
Jalalpore	29.00	73.00	24.00	49.00	87.00
Gandevi	43.00	45.00	72.00	86.40	60.00

3.5.3 EXPECTANT MOTHERS WHO HAD RECEIVED AT LEAST ONE TT INJECTION

Taking TT injection is an important aspect of health services. From the figure mentioned below we observe that a maximum percentage of women availing the TT injection under DLHS 3 in district marked in dark green colour as per figure 3.15. The figure for all Gujarat was 80.9 while in the case of Navsari district the same was 74%

TABLE 3.14 NAVSARI VIS-À-VIS GUJARAT IN TERMS OF TT INJECTIONS TO EXPECTING MOTHERS (PERCENTAGE)

	TOTAL (DLHS 2)	RURAL (DLHS 2)	TOTAL (DLHF 3)	RURAL (DLHF 3)
Navsari	74	92.6	87.1	91.1
Gujarat	80.9	78.5	71.2	67.2

Source: Computed on basis of District Level Household and Facility Survey (DLHS 2 AND DLHS 3)

Comparing these figures with DLHS 3 the respective highest and lowest figures were for the districts of Jamnagar (88.2) and Vadodara (59.9). In the case of Gujarat the figure was 71.2 and that of Navsari District it was 87.1%. While in the case of All Gujarat (rural) the figure had come down in the case of Navsari there was an improvement in the performance.

FIGURE 3.9: COMPARISON OF NAVSARI VIS- A- VIS GUJARAT (PERCENTAGE OF TOTAL AND RURAL EXPECTANT MOTHER WHO HAD AT LEAST ONE TT INJECTION)

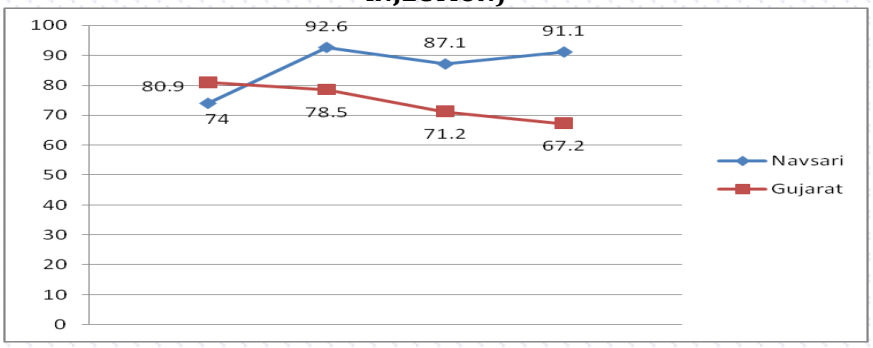
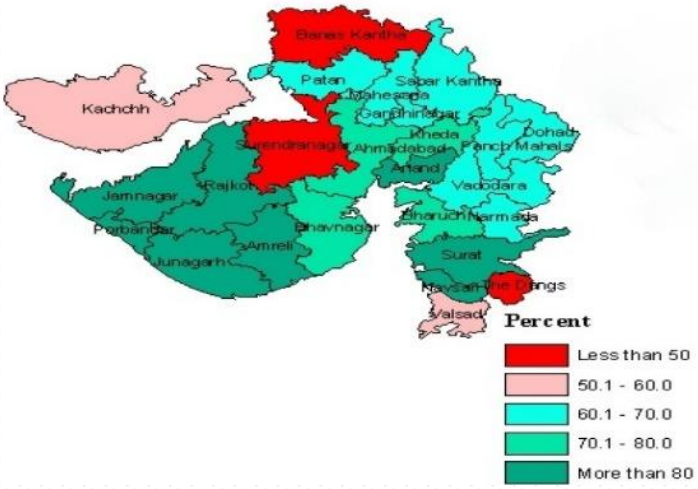
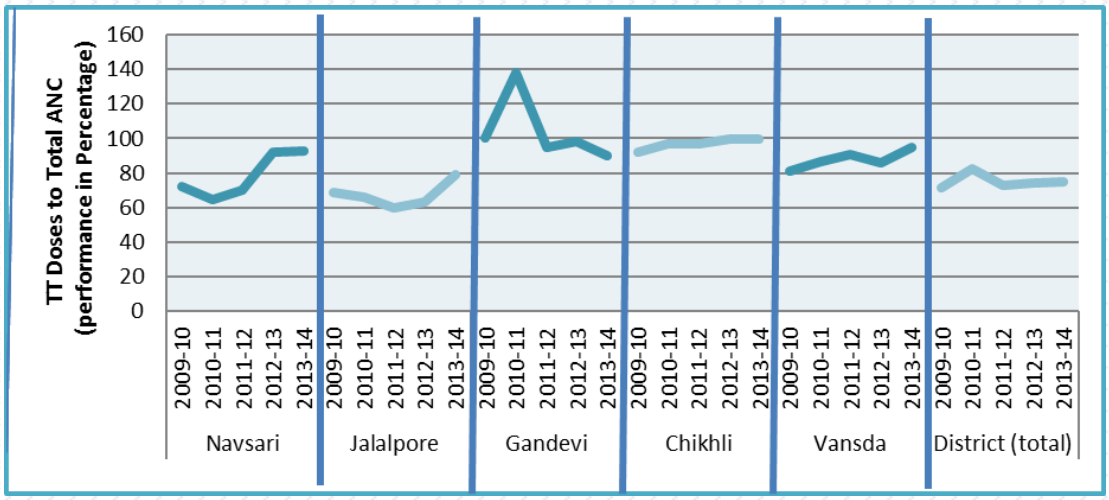


FIGURE 3.10 NAVSARI 'S PERFORMANCE AS FAR AS TT INJECTION TO EXPECTANT MOTHERS IS CONCERNED[20]



[20] DARK GREEN COLOUR INDICATES GOOD PERFORMANCE

FIGURE 3.11: TT DOSES TO TOTAL ANC (TALUKA WISE)



Source: Compiled from data available from CDHO, Navsari

Performance of Gandevi Taluka was the best amongst all Talukas in Rural parts of Navsari followed by Chikhli and Vansda

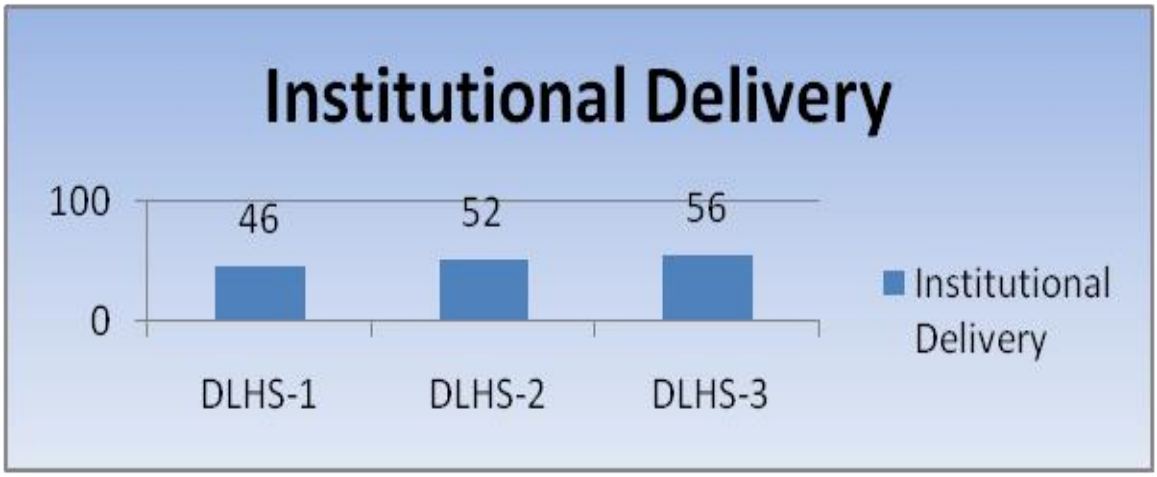
TABLE 3.15: TT DOSES TO TOTAL ANC (TALUKA WISE)

Talukas with Urban Population	2009-10	2010-11	2011-12	2012-13	2013-14
Navsari	0.00	0.00	0.00	67.73	65.64
Jalalpore	32.00	32.00	29.00	38.00	85.00
Gandevi	82.00	86.00	59.53	79.18	74.00

3.5.4 INSTITUTIONAL DELIVERY

In Gujarat, the institutional delivery had increased from 46.1 percent in DLHS-1 (1998-99) to 52.2 percent in DLHS-2 (2002-04) and 56.4 percent in DLHS-3 (2007-08) as presented in figure 3.17. The percentage of institutional delivery ranges from 9.4 percent in The Dangs to 84.3 percent in Mahesana. Percentage of safe delivery is 87.1 percent in Mahesana and 11.5 percent in The Dangs district. Navsari enjoys a good percentage of safe delivery which is 83.8%.

FIGURE 3.12: INSTITUTIONAL DELIVERY (DISTRICT LEVEL HOUSEHOLD AND FACILITY SURVEY)

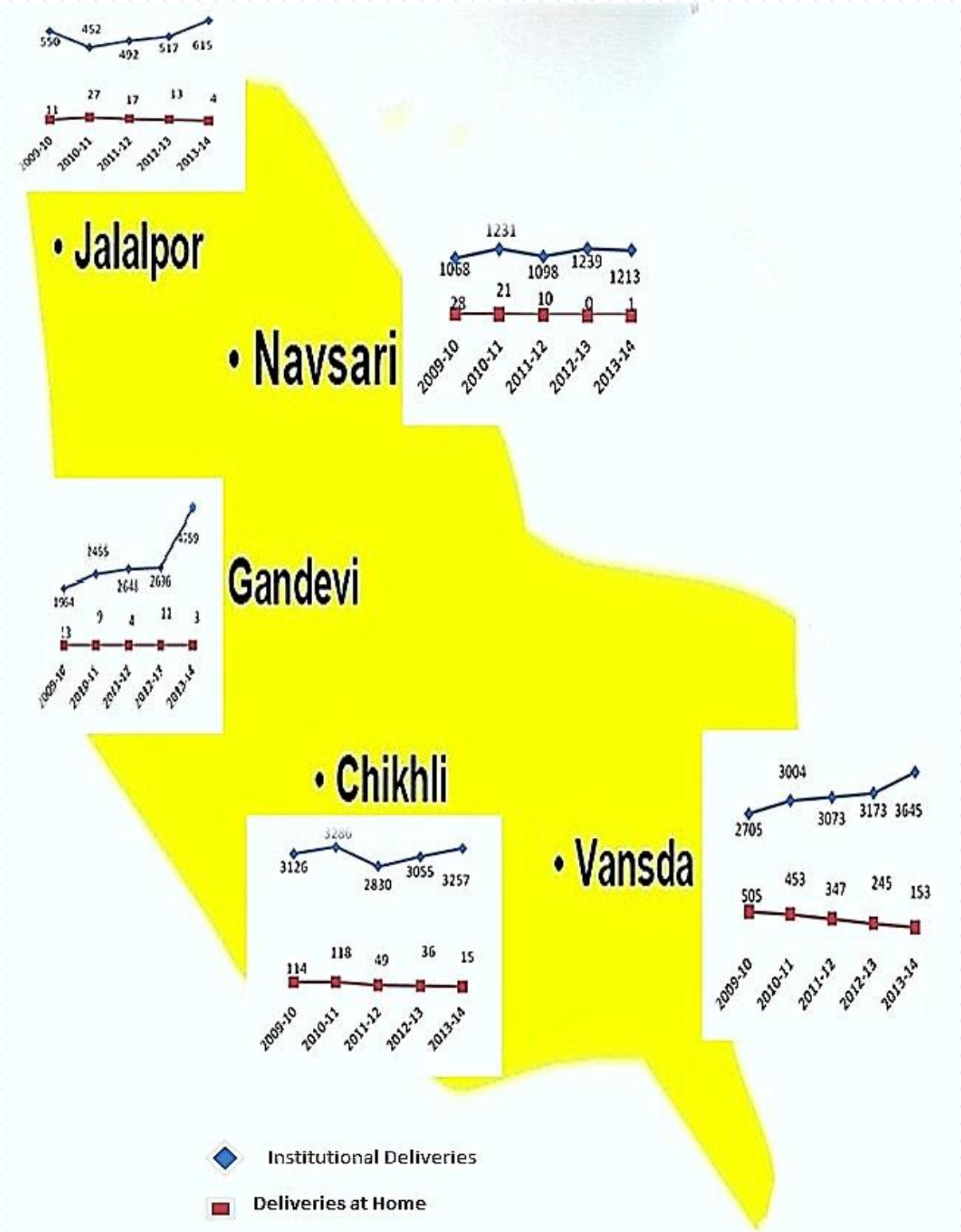


The Government of India and Gujarat have launched various maternity schemes to promote institutional deliveries. The Government of Gujarat (GoG) launched Chiaranjeevi Yojana (CY) in 2006 to promote public-private-partnership which allows women living Below Poverty Line (BPL) to deliver free of cost at selected private healthcare facilities. Services are "contracted out" to empanelled obstetricians from selected private healthcare facilities by paying a fixed fee by the government for conducting a delivery. Another public-private-partnership initiative of the GoG is provision of free transportation for any emergency, including women in labour since 2007. Janani Suraksha Yojana (JSY), was launched by the Government of India in 2005, which is a conditional cash transfer programme for women living under BPL to promote institutional delivery in public hospitals. It should be noted that the GoG implemented JSY differently than other states by providing cash transfer during antenatal period and not linking it to place of delivery. At the same time, many Non-Governmental Organizations (NGOs) implemented safe motherhood programmes.

3.5.5 INSTITUTIONAL VS HOME DELIVERY IN NAVSARI DISTRICT: RURAL AREA

Chikhli and Vansda had maximum number of child births at home, whereas Gandevi's rural areas had fewer numbers of home deliveries as compared to all other Talukas of Navsari district from 2009-10 to 2013-2014-time period.

FIGURE 3.13: INSTITUTIONAL DELIVERY VIS-À-VIS HOME DELIVERY NAVSARI DISTRICT RURAL AREA

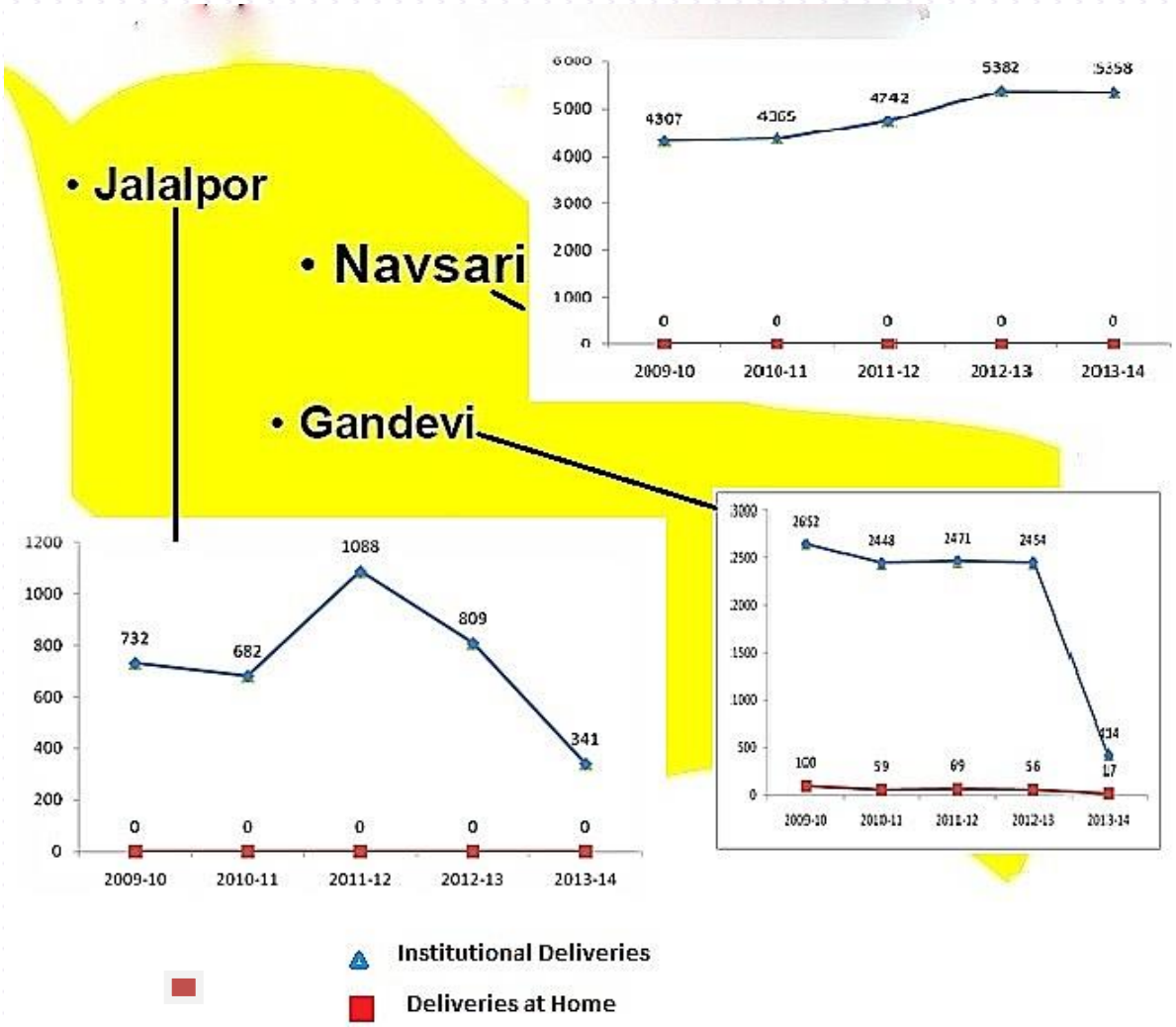


Source: Prepared on the basis of data available from CDHO, Navsari

3.5.6 INSTITUTIONAL VS. HOME DELIVERY IN (2009-2014) NAVSARI DISTRICT: URBAN AREA

Only Navsari, Jalalpore and Gandevi Talukas have urban areas as per the demography of the region. Jalalpore and Navsari reported no home deliveries from 2009-10 to 2013-14 as per statistics available from the health department of Navsari District Health Office.

FIGURE 3.14: INSTITUTIONAL DELIVERY VIS-À-VIS HOME DELIVERY NAVSARI DISTRICT URBAN AREA



Source: Prepared on the basis of data available from CDHO, Navsari

It can be noted here that women in this area are more likely to deliver at institution even in absence of cash transfer programme if there is availability of free emergency transportation, free and quality obstetric care at either public or private health facility for

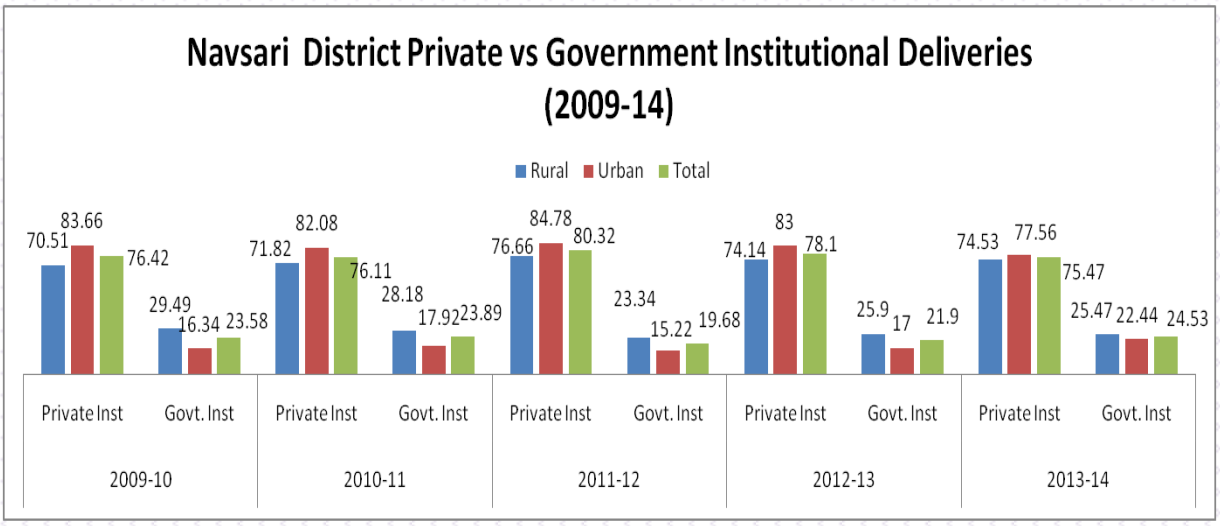
normal and complicated deliveries and community based mobilization efforts to ensure that maximum number of women take advantage of government benefits.

JSY has a provision for women to receive Rs. 1500 to "contract-in" services from private practitioners. Though JSY has been successful in increasing institutional deliveries, it has been largely ineffective in leveraging upon availability in Vansda and Chikhli area. Providing free emergency transportation and contracting-out services to private practitioners similar to CY in next phase of JSY might further augment its effectiveness.

3.5.7 DETAILS OF DELIVERIES AT PRIVATE AND GOVERNMENT INSTITUTITONS

To reduce the rate of maternal mortality, Navsari has many constrains like low literacy rate. However, the district has put various activities to reduce maternal death. Encouraging the institutional delivery, the district has tried to reduce the maternal and infant deaths. Close observation of figures mentioned below indicates that deliveries in private clinics have increased significantly. In 2009-10, 13,071 births were in private institutions, whereas only 4033 births were in government institutions. In Navsari district, there was a 13% rise in deliveries performed in private clinics, however, the deliveries in Government institutions have also increased moderately. In 2009-10, about 23.57 % of deliveries were performed in Government institutions, which have increased by meager 1% 2013-14.

FIGURE 3.15: DETAILS OF DELIVERIES AT PRIVATE AND GOVERNMENT HOSPITALS-NAVSARI DISTRICT

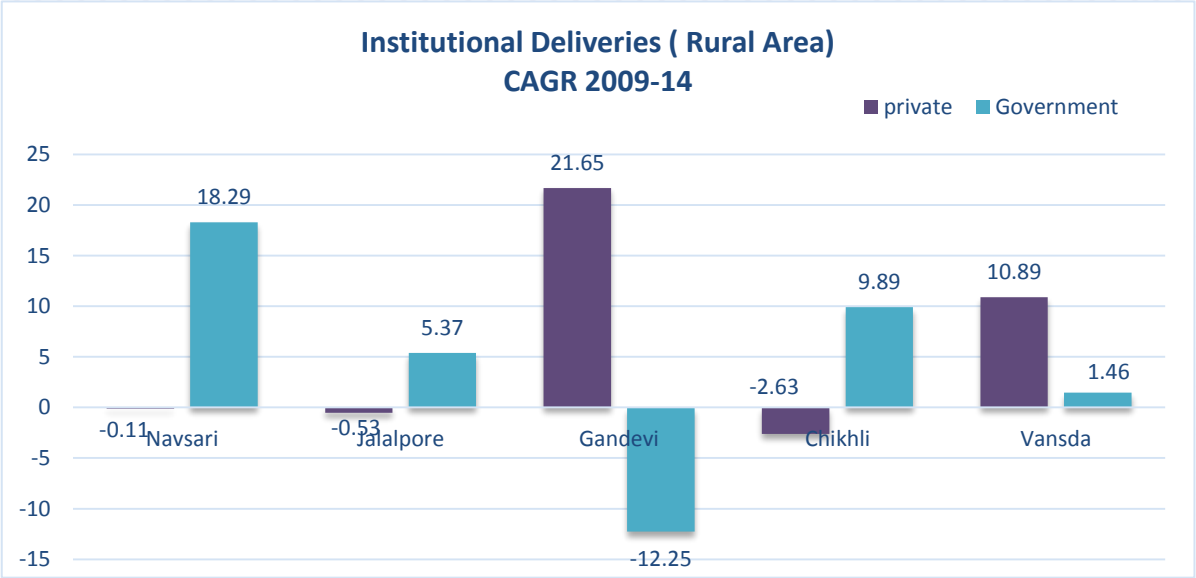


Source: Compiled from data available from CDHO, Navsari

If we analyse five different Talukas of Navsari, we can point out that Private institutions are highly preferred over Government Institutions for deliveries. In Navsari Taluka, as Navsari city is closer to different villages, its proximity plays a vital factor. In a very interesting finding, we can observe the rise in Government institutional delivery performed in year 2013-2014 in Navsari Taluka. In Urban areas of Navsari, there has been a rise of 26.43% in preference of Private clinics for delivery.

The rural population of Navsari district shows a rise of 18.29 CAGR between 2009-14 indicating preferences of inhabitants of the Talukas preferring deliveries in Government institutions. There was a meager decline of -0.11 CAGR as far as preferences of private hospitals are concerned. Jalalpore Taluka's rural populations prefer both Private and Government institutions almost equally. Infact, in year 2013-2014, we can see that deliveries performed in Government institutions have exceed that of private institutions. In urban Jalalpore, the inhabitants do not prefer delivery at Government hospitals or Government facilities as no delivery was reported from 2011-12, 2012-13 and 2013-14. Also we can notice a steep fall in newborns in Jalalpore Taluka's urban area.

FIGURE 3.16: DETAILS OF DELIVERIES AT PRIVATE AND GOVERNMENT HOSPITALS-NAVSARI DISTRICT RURAL AREA



Deliveries performed at private clinic in Gandevi taluka witnessed a significant rise of 21.65 CAGR between 2009-14 . Whereas in urban area of Gandevi, there is a decline of 38.53 CAGR for Private institutional delivery.

As Chikhli and Vansda Talukas are high priority areas they need special attention as far as maternal health is concerned. There are no urban areas in these Talukas. More inhibitants of Chikhli prefers delivery in Government hospitals; but in Vansda there are good number of deliveries performed at private hospitals.

FIGURE 3.17: DETAILS OF DELIVERIES AT PRIVATE AND GOVERNMENT HOSPITALS-NAVSARI DISTRICT URBAN AREA

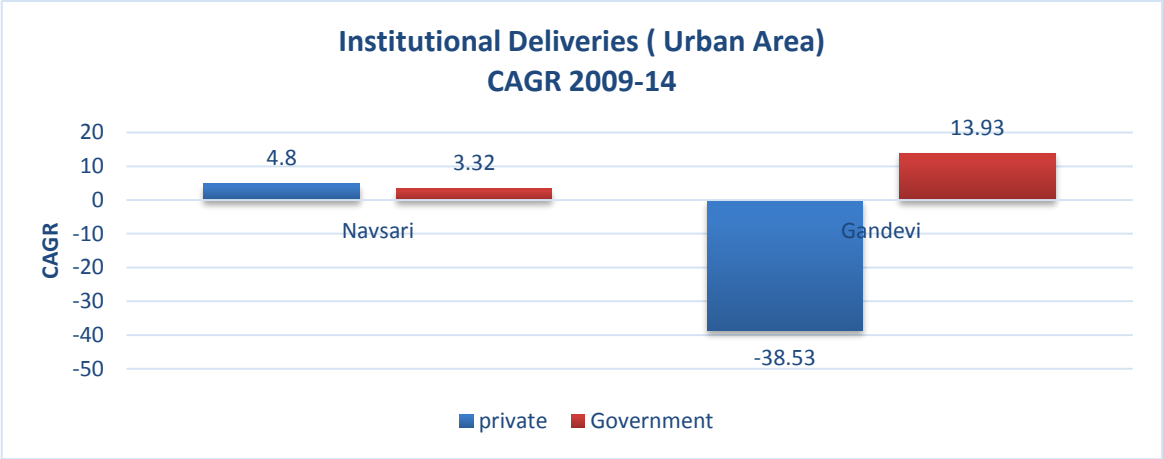
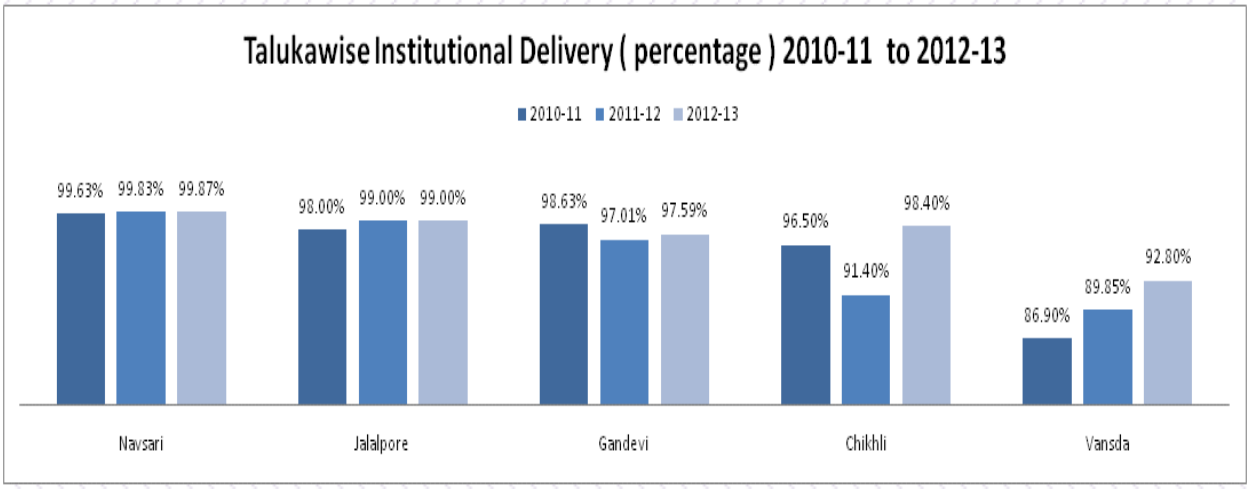


Figure mentioned below represent total number of institutional deliveries (private + Government institutions). We can see that almost all Talukas prefer delivery under medical supervision rather than delivery at home. This is indeed a step towards optimistic view towards maternal and neo-natal health

FIGURE 3.18: TOTAL PERCENTAGE OF INSTITUTIONAL DELIVERIES FROM 2010-11 TO 2012-13



Source: Compiled from data available from CDHO, Navsari

3.6 'CHIRANJEEVI YOJANA' FOR IMPROVING MATERNAL HEALTH – NAVSARI DISTRICT

According to one estimation, 1.2 million children in the Gujarat state are born each year, including both institutional and domiciliary deliveries. Given that the maternal mortality rate for the state is estimated at 112 per 1, 00,000 live births[21].

One of the key reason behind maternal deaths is that the majority of deliveries are not attended by skilled persons, women do not have access to emergency obstetric care, and there is little postnatal follow-up. It is argued that most of these maternal deaths are avoidable with adequate interventions, such as skilled birth attendant, referral services, and access to emergency Obstetric Care.[22] Families below the poverty-line (BPL) are the most vulnerable since they face significant risk due to their poor socio-economic position and limited access to healthcare services.[23]

In order to bridge the gap in availability of ObGyns for providing EmOC and institutional delivery in rural areas of Gujarat, the State Government formulated the 'Chiranjeevi Yojana'. The scheme sought to use the potential resource available in the form of large number of private providers, to provide free and quality services to poor pregnant women in return for predetermined capitation based payment from the Government. Beneficiaries could avail of the scheme through vouchers (distributed under the scheme) or through BPL cards. The project was initially planned as a pilot in 5 priority districts: Banaskantha, Dahod, Kutch, Panchmahal and Sabarkantha, and was to be scaled up to all districts in the State based on the results.[24]

Under the scheme, trust hospital / private gynecologist and obstetrician are enrolled after they are oriented about the Chiranjeevi scheme. District Health Society signs a MoU

[21]Registrar General of India. Maternal mortality in India: 2011-2013: trends, causes and risk factors (Sample Registration System) New Delhi: Registrar General of India

[22]Mavalankar DV, Rosenfield A. Maternal mortality in resource-poor settings: policy barriers to care. Am J Public Health. 2005; 95:200–3.

[23]Department for International Development. Reducing maternal deaths: evidence and action: a strategy for DFID. London: Department for International Development; 2004. p. 35

[24]Bhat R, Singh A, Maheshwari S, Saha S. Maternal health financing—issues and options: a study of *Chiranjeevi Yojana* in Gujarat. Ahmedabad: Indian Institute of Management; 2006. p. 39 (Working paper no. 2006-08-03)

with each of them. As per MoU they have to provide the maternity services to the BPL / tribal (non income-tax paying) mothers as beneficiaries of the scheme at their nursing homes/hospitals. To develop the costing of the services, the government had carried out consultation with SEWA Rural (an NGO providing health services), individual specialist and Federation of Obstetric and Gynecological Societies of India (FOGSI) representatives of the state to arrive at a uniform fee that could be charged for normal, complicated and as well as C-Section cases to design the package for 100 deliveries. Initial package of Rs. 1,85,000 for 100 deliveries, which was modified by Govt. Resolution No.: FPW/102013/73/B-1 dated 29/07/2013, now revised package of 100 deliveries is Rs. 3,80,000. In Chiranjeevi Yojana, there is provision of Rs. 2500/- per Caesarian Section if enrolled Private gynecologists conduct Caesarian Section in Government health facility.[25]

The above package includes all normal and complicated deliveries (including necessary facilities, investigation and medication). The beneficiary does not bear any type of charges related to delivery, medicine, anesthesia, laboratory investigations or operation. The package also includes Rs. 200/- for transportation to the pregnant mother. ASHA is paid separately Rs 200 for bringing for institutional delivery separately from ASHA incentive fund. 48 hours' stay is advised after delivery and is covered under the scheme.

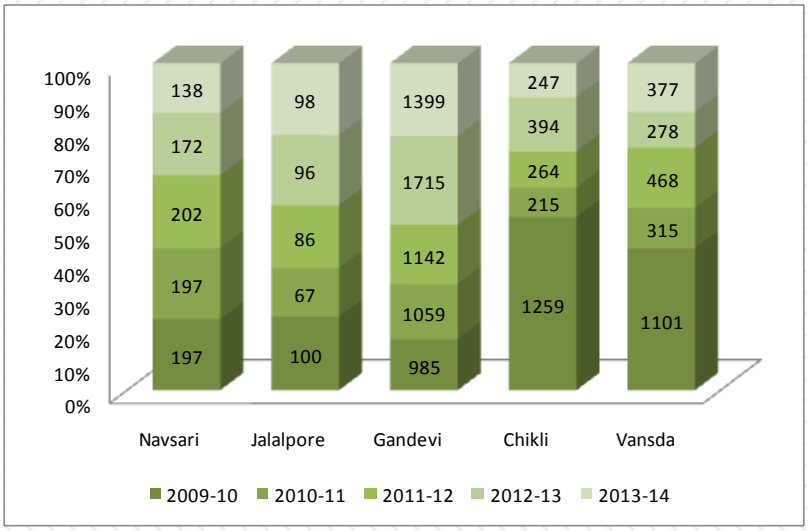
3.6.1 CHIRANJEEVI YOJANA IN NAVSARI DISTRICT

If we closely observe the Figure mentioned below, we can see the number of beneficiaries enrolled under the scheme. Gandevi Taluka is seen to be observing maximum beneficiaries from the scheme from year 2009-10 to year 2013-2014 followed by Vansda and Chikhli. There are very few people who took the benefit of Chiranjeevi Yojana in Navsari and Jalalpore Taluka. In a very interesting finding below we can observe that Chikhli reported the highest number of normal child birth under Chiranjeevi Yojana (1259 deliveries) in year 2009-10. But just the following year there was a drastic fall of 82.92% in normal deliveries registered under the same scheme. The same scenario was

[25] *ANGANDWADI CENTRES*. (2015, March 10). Retrieved March 2015, 16, from NAVSARI DISTRICT PANCHAYAT GOVERNMENT OF GUJARAT: http://navsaridp.gujarat.gov.in/Navsari/shakhao/sanyukt-bal-vikas/aaganvadi-kendro.htm

witnessed in Vansda where there was fall of 71.39% in normal childbirth in 2010-11 compared to year 2009-10.

FIGURE 3.19: BENEFICIERIES OF CHIRANJEEVI YOJANA FROM 2009-10 TO 2013-14 (NORMAL DELIVERIES)



Source: Compiled from data available from CDHO, Navsari

If we discuss the enrollment of doctors (obstetricians) only 6 obstestricians have enrolled under the scheme from year 2009-10 to year 2013-14 in Navsari Taluka. Out of these 5 were private Obstetricians. Similarly, 10 and 9 Obstestricians were registered for the said period in Jalalpore and Gandevi Taluka respectively.

In Chikhli,11 Obstetricians were registered out of which 5 were private practitioners. In Vansda Taluka 9 Obstestricians were registered under the scheme. In all, 45 private and government Obstestricians were enrolled for successful implementation of Chiranjeevi Yojana in Navsari District from 2009-10 to 2013-2014. According to table 3.14 it can be observed that Navsari accounts for a meager 1.97% of total deliveries when compared to Gujarat State, while only 1.70% private obstetricians of Gujarat have enrolled for Navsari district.

TABLE 3.16 CHIRANJEEVI YOJANA-PERFORMANCE OF NAVSARI VIS-A- VIS GUJARAT

(JANUARY 2006-MARCH 2012)

Particulars	GUJARAT	NAVSARI DISTRICT	Percentage of Navsari vis-à-vis Gujarat
Normal Deliveries	682976	13080	1.91%
LSCS Deliveries (C-Section)	47946	1643	3.43%
Complicated Deliveries	38496	422	1.10%
Total Deliveries	769418	15145	1.97%
Private Specialist Enrolled under the Scheme	646	11	1.70%

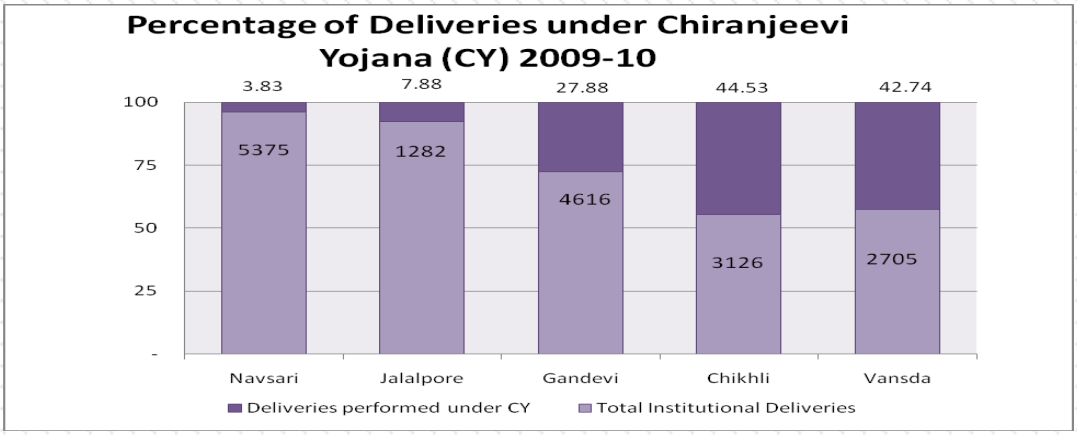
Source: http://gujhealth.gov.in/Images/pdf/Outcome_of_Chiranjeevi_Scheme.pdf (retrieved on August 1, 2015)

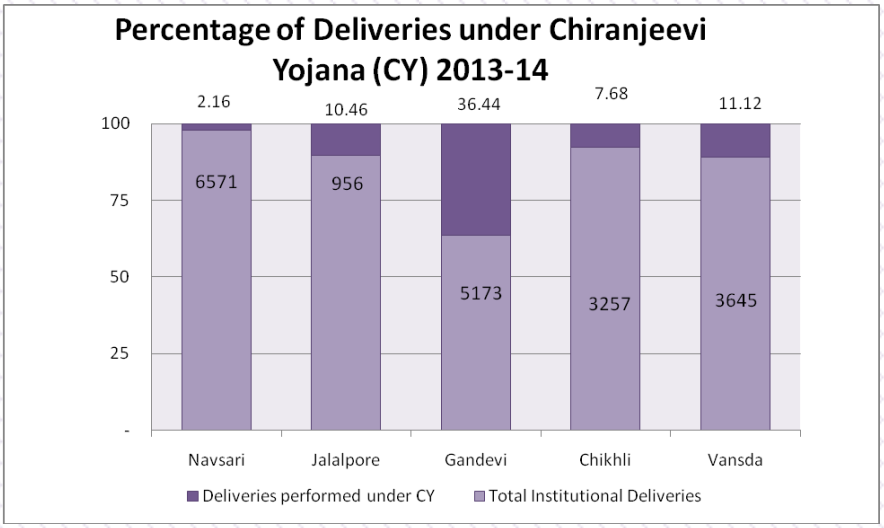
3.6.2 TALUKA-WISE ENROLLMENT UNDER CHIRANJEEVI YOJANA (2009-2014)

As per data provided by CDHO,Navsari there was no reported delivery at home in Navsari Taluka. Navsari Taluka consists of urban area and populated by non-tribals too. Hence, as compared to total number of deliveries in Navsari Taluka, very few beneficiaries enrolled under the Chiranjeevi Yojana. Total registered deliveries in 2009-10 in Navsari was 5375 in 2009-10 but only 206 out of them were registered 3.83 % were registered under Chiranjeevi Yojana.

There was a steady rise of institutional deliveries in Navsari Taluka but along with this, the number of beneficiaries of Chiranjeevi Yojana fell with an increase in institutional deliveries.

FIGURE 3.20 PERCENTAGE OF DELIVERIES UNDER CHIRANJEEVI YOJANA (2009-14)





Source: Compiled from data available from CDHO, Navsari

Jalalpore Taluka also witness the same scenario of that of Navsari. As it is less populated Taluka as compared to other Talukas of Navsari, Institutional deliveries were also not registered more for the said period.

Majority of the beneficiaries who were observed taking the benefit of the scheme were from Gandevi Taluka. 27.58% of total Institutional deliveries were registered under Chiranjeevi Yojana in year 2009-10. Gandevi's tribal population and more number of expectant mothers under BPL category is one of the main reasons behind the success of this scheme in this Taluka.

Chikhli Taluka witnesses a great response to Chiranjeevi Yojana in year 2009-10 with 44.53% of total institutional deliveries were through Chiranjeevi Yojana. But there was a drastic change of -82.40% in year 2010-11 as compared to the previous year.In the subsequent years, number of beneficiaries kept on reducing as compared to total institutional births in Chikhli Taluka.

On observing figure 3.39 and 3.40 below, it is evident that there was a sudden drop in deliveries under Chiranjeevi Yojana in year 2010-11 compared to year 2009-10. There was sharp decline of 71.11% in enrollment in 2010-11. Out of 3004 institutional deliveries in Vansda, a mere 11.12% were under Chiranjeevi Yojana .

3.7 PROJECT ANKUR

Maternal death is an utter tragedy, not only for the woman who loses her life while trying to bring a new life, but also for her family and society. Peripartum and early Post-Partum

period are very vulnerable in respect to Maternal & Child Health. Women from interior habitations are unable to reach nearest health facility if any emergency occurs during this period due to geographical and Socio-economical encumbrance. There is also a strong association between low MMR and high rate of skilled attendance at birth. Every year, thousands of women and newborns suffer pregnancy and birth related ill-health. Thus, pregnancy-related mortality and morbidity continues to have a huge impact on the lives of women and their newborns. Currently, most of maternal deaths result from the direct obstetrical complications of hemorrhage, sepsis, obstructed labor, hypertensive disorders of pregnancy and septic abortion.

What is lacking in many areas of the State is the ability to bring the necessary technical skills - economic, geographical, and operational - to the women in need of help. Access to a continuum of care, including appropriate management of pregnancy, delivery, postpartum care and access to life-saving obstetric care when complications arise are crucial to Safe Motherhood.

3.7.1 ABOUT PROJECT ANKUR

Navsari district having tribal blocks and hilly difficult areas in which high risk mothers are more in number and therefore as a part of new strategies Navsari district has initiated project "ANKUR" in January 2012 in a society to improve maternal and child health beyond the working of health department. It is the modified regular practice and schemes run by government. The main contributors of this project are grass root level workers of health department and public and private provider. It is the good example of PPP set by Navsari district in whole state.

The purpose of Project Ankur is to provide a setting where high-risk women or women from remote areas can be accommodated during the last 7-10 days of pregnancy or even more if needed near a hospital where Obstetric and Newborn care facilities are available. The purpose is not only to decrease maternal mortality but also to improve maternal and neonatal outcomes. It is the key element to '*bridge the geographical gap*' in obstetric care between rural areas, with poor access to facilities. In these setup additional emphasis is put on education and counseling regarding pregnancy, delivery and care of the newborn infant and family.

In this project residential facility, located near or in the health facility, where in women Identified as *'high risk'*, including those expecting their first delivery, women with 3+ previous births, very young women, older women and those identified as having problems such as high blood pressure during pregnancy, pregnant women from remote habitat can await their delivery and promptly get Skilled Birth Attendant Care at the time of delivery.

The objectives of Project Ankur are:

- Increase the utilization of the hospital by women for delivery and care
- Enable poor women at risk from pregnancy and child birth living in remote areas greater access to medical care.
- Increase percentage of women delivered a baby with trained providers at health facility
- Promote early and exclusive breast feeding
- Promote minimum 48 hours of Post Partum Stay in the Institutions

Method- Tracking of each and every high risk pregnant mothers is been done by strong community level survey carried out by grass root level workers and then they are screened by concerned medical officers of nearby PHCs, CHCs and UHCs with prescribed format and further filtered pregnant mothers are being treated by public and private gynecologists who are involved in this project in various parts of district. Other features are as follows:

  - Most of Pregnant women are examined by Medical Officer at PHC
  - Facility of Lab Investigation for all Pregnant women
  - Visit of Specialist are planned on same day
  - Arrangement for necessary diagnosis & treatment are available for all Pregnant women

Beneficiaries – High risk mothers of Navsari district. Total 4034 high risk mothers have been identified till the program has been started and out of them total 932 mothers have been provided all diagnostic and curative services through experienced and renowned service providers at free of cost.

Achievements of Project Ankur in Navsari: During the project total 43 maternal deaths have been averted and many of maternal morbidities have been treated and improvisation in maternal and child health has been done.

TABLE 3.17 PROJECT ANKUR-MILESTONES ACHIEVED

Sr. No.	Taluka	Mothers Examined by Gynecologist	Identified High Risk Mothers	Treatment given
1	**Navsari**	328	113	113
2	**Jalalpore**	588	156	156
3	**Gandevi**	1392	186	186
4	**Chikhli**	924	186	186
5	**Vansda**	1339	291	291
	Total	4571	932	932

Source: Compiled from data available from CDHO, Navsari

TABLE 3.18 PREGNANT MOTHER CHECKUP & TREATMENT DETAIL

Pregnant Mother Checkup & Treatment Detail													
SR. No.	Block Name	2009-10			2010-11			2011-12			2012-13(Jan.13)		
		ANC Regi.	3 Checkup	High Risk	ANC Regi.	3 Checkup	High Risk	ANC Regi.	3 Checkup	High Risk	ANC Regi.	3 Checkup	High Risk
1	**Navsari**	6902	3895	454	5159	3935	99	4958	3491	164	4300	2825	188
2	**Jalalpore**	4595	3353	145	4236	3437	133	3572	2384	107	2993	2343	73
3	**Gandevi**	6367	4829	177	4837	3637	207	4197	3350	281	3151	2567	278
4	**Chikhli**	5719	5181	22	5679	4624	25	5399	3995	52	4590	2903	64
5	**Vansda**	3560	2914	262	3972	3462	265	3735	2924	262	3389	2032	281
	Total	27143	20172	1060	23883	19095	729	21861	16144	866	18423	12670	884

Source: Compiled from data available from CDHO, Navsari

TABLE 3.19 HIGH RISK PREGNANCIES DETECTED IN NAVSARI DISTRICT

SR .NO.	BLOCK NAME	NO. OF CAMPS ORGANISED	EXAMINED BY GYNECOLOGISTS	IDENTIFIED HIGH RISK MOTHERS	HIGH RISK PREGNANCIES IDENTIFIED (%)
1	NAVSARI	2	328	113	34.45
2	JALALPORE	6	588	156	26.53
3	CHIKHLI	6	924	186	20.12
4	GANDEVI	14	1392	186	13.36
5	VANSDA	5	1339	291	21.73
DISTRICT		**33**	**4571**	**932**	**20.39**

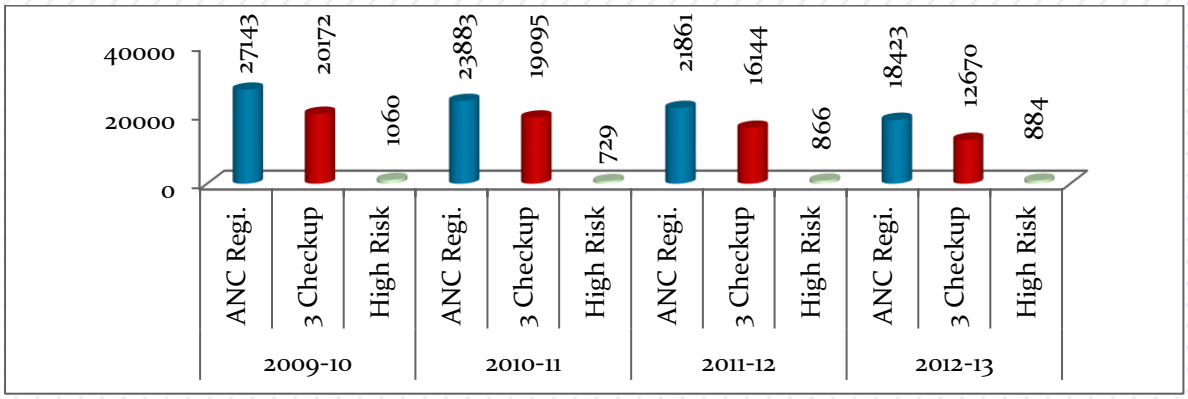
Source: Compiled from data available from CDHO, Navsari

TABLE 3.20 REASONS FOR HIGH RISK PREGNANCIES DETECTED IN NAVSARI DISTRICT

		Reasons Behind High Risk Pregnancies									
Sr No.	Block Name	Anemia	Historyof Abortion	Breach	Sickle cell +	ECTOPPREGNANCY	Pre. Eclempsia	Multi Para	L.S.C.s	Twins	Others
1	NAVSARI	92	0	0	0	0	1	1	3	0	16
2	JALALPORE	82	2	1	5	0	2	5	10	0	49
3	CHIKHLI	61	3	5	4	0	7	61	30	1	14
4	GANDEVI	93	5	2	8	2	7	11	18	1	39
4	VANSDA	172	3	6	23	0	3	36	24	2	22
		500	**13**	**14**	**40**	**2**	**20**	**114**	**85**	**4**	**140**

Source: Compiled from data available from CDHO, Navsari

FIGURE 3.21: IDENTIFICATION OF HIGH RISK PREGNENCIES

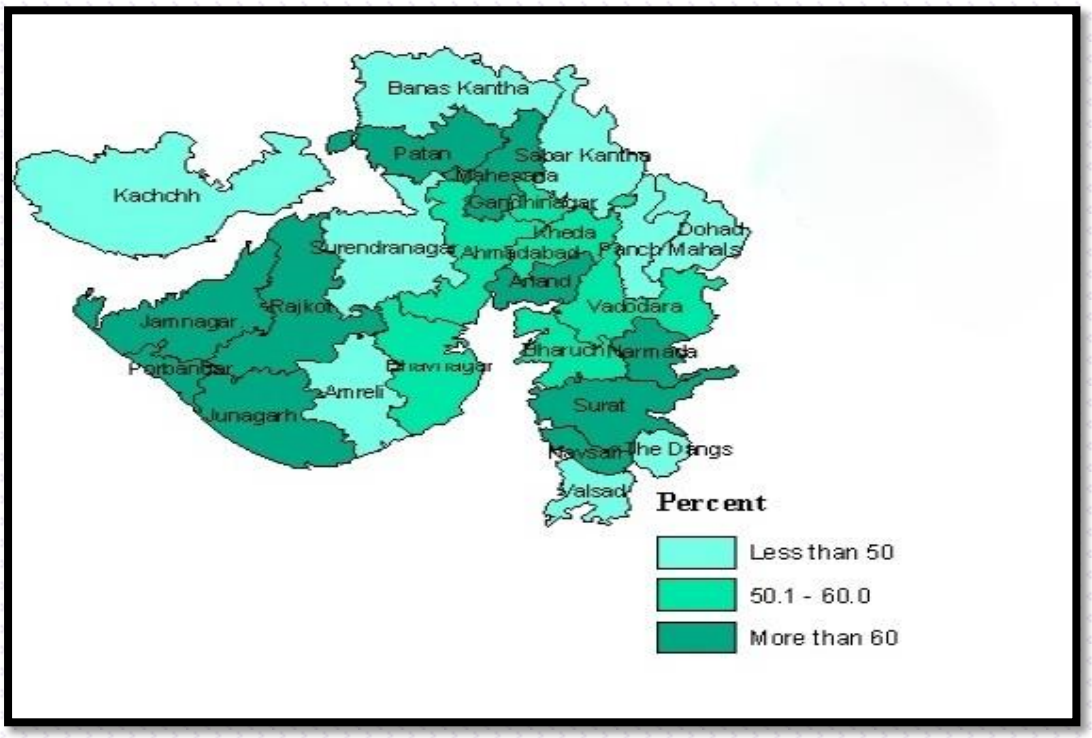


Source: Compiled from data available from CDHO, Navsari

3.8 IMMUNISATION

Immunisation at the post-natal stage is a vital state sponsored public health related programme. In Navsari district, this programme is taken up by the District Health Department on the basis of community need assessment approach. DPT-3, BCG, Measles and Vitamin A had been the major Immunisation programmes.

FIGURE 3.22 FULL IMMUNISATION OF CHILDREN (AGE 12 TO 23 MONTHS)[26]



As per figure 3.22 , the achievement in this regard was quite impressive. In case of DPT, the achievement rate for the district is 155 percent against annual work load. 19995 children were fully immunized in Navsari; this was higher than the target of 13600 Children. But as there is a mis-match between total live births registered and annual work load it is assumed that those children who did not receive Immunisation had been taken to private pediatricians.

[26] DARK GREEN INDICATES GOOD PERFORMANCE OF NASARI IN TERMS OF FULL IMMUNISATION

TABLE 3.21: TARGETS ACHIEVED IN ROUTINE IMMUNISATION (2009-2014)

2009-10 Expected Level of Achievment-22842 Total Live Births Reported-17678			2013-14 Expected Level of Achievment-13600 Total Live Births Reported-23001			CAGR
BCG						
Achievement	**% of Annual Work Load**	**% against live birth**	**Achievement**	**% of Annual Work Load**	**% against live birth**	**CAGR**
25655	112	145.12	21585	159	93.84	9.16%
DPT (3 rd Dose)						
22595	98.92	127.81	20305	155	88.28	11.88%
Measles						
20895	91.48	118.2	19830	151.37	86.21	13.42%
Fully Immunized						
20879	91.41	118.11	19995	152.63	86.93	13.67%
Vitamin A Dose						
19944	87.31	112.82	20097	153.41	87.37	15.13%

Source: Computed on the basis of Health Statistics 2009-10 and 2013-14 published by Government of Gujarat

Talukawise Immunisation Status for year 2013-14. Taluka wise information in this regard reveals that Vansda Taluka's performance in case of Immunisation had been most successful in Navsari. The success rate was poor in terms of BCG Vaccination in Jalapore Taluka with a gap of -36%. Most of the target work load expected were achieved by Navsari District. The achievement however was poor in Chikhli Taluka with respect to DPT, PNT-3 and Measles.

FIGURE 3.23: ROUTINE IMMUISATION FOR YEAR 2013-14 (NAVSARI TALUKA)

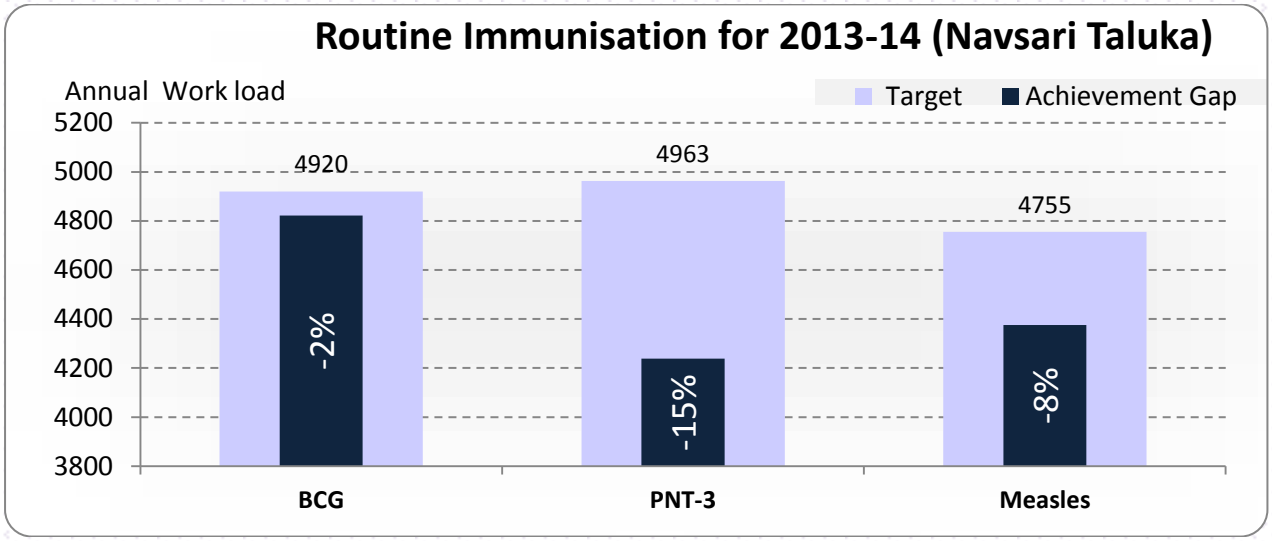


FIGURE 3.24: ROUTINE IMMUISATION FOR YEAR 2013-14 (JALALPORE TALUKA)

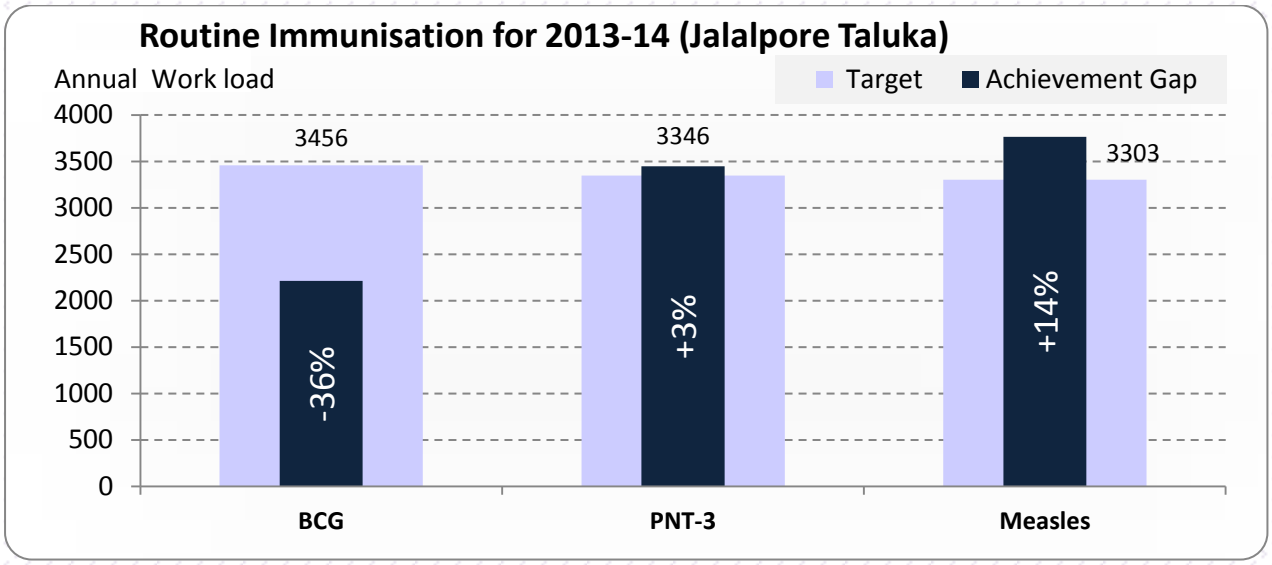


FIGURE 3.25: ROUTINE IMMUISATION FOR YEAR 2013-14 (GANDEVI TALUKA)

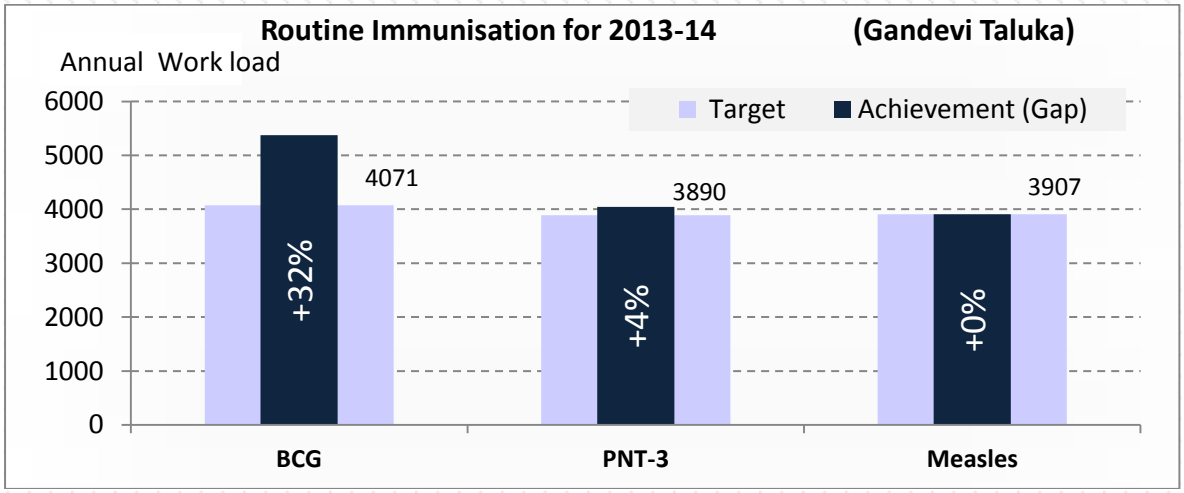


FIGURE 3.26: ROUTINE IMMUISATION FOR YEAR 2013-14 (CHIKHLI TALUKA)

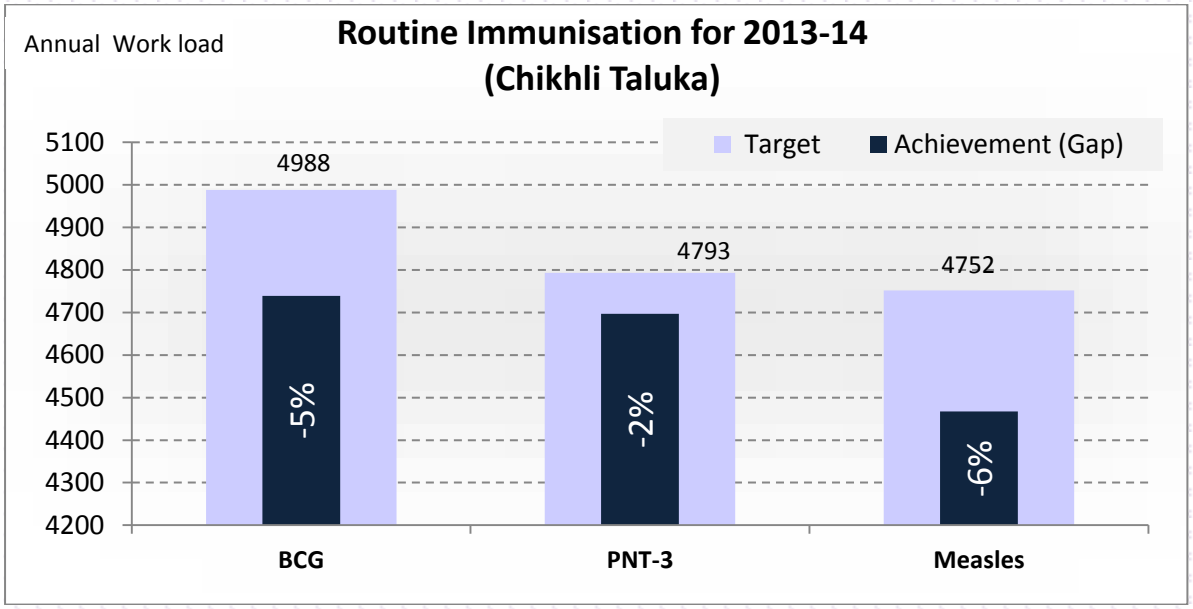
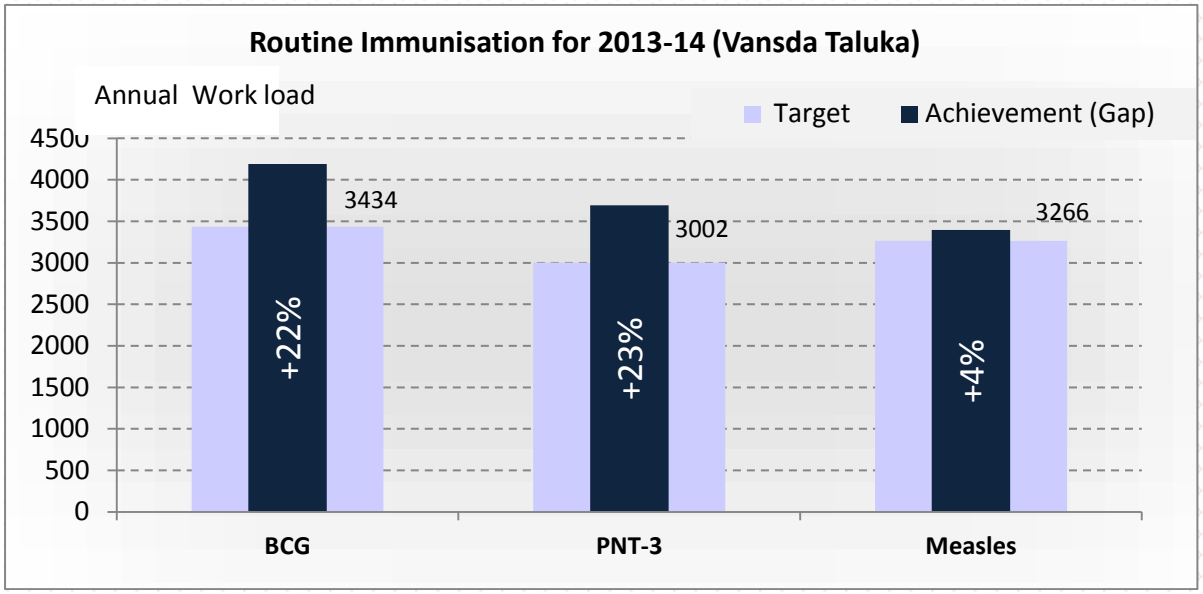


FIGURE 3.27: ROUTINE IMMUISATION FOR YEAR 2013-14 (VANSDA TALUKA)



BOX 3.3

MUKHYAMANTRI AMRUTUM YOJANA: PEOPLE OF NAVSARI DISTRICTS PARTICIPATES IN MEGA HEALTH CAMP

State Nodal Cell, Health & Family Welfare Dept. Gandhinagar, District Panchayat, Navsari in coordination with M.G.General hospital, Navsari organized First Mega health Camp for Mukhyamantri Amrutum Yojana on 27th, April, 2013 at M.G.General Hospital Campus, Navsari, Dist. Navsari from 8.30 hrs. to 17.00 hrs. The objective behind the camp was to screen patients, diagnose & provides necessary Treatment along with drugs. Patients, who were covered under different health scheme, were referred to nearest hospital for further treatment. In Navsari district, there are many BPL Families, who cannot afford costly tertiary care treatment, hence in Mega health camp the beneficiary were screened and referred to nearest empaneled hospital.

Around 15 to 20 days before Mega Health camp, Navsari District Panchayat team, PHCs, CHCs, ASHA workers and FHW started visiting local areas. The aim was to mobilize and disseminate information about the Mukhyamantri Amrutum Yojana to be undertaken during the Mega Health Camp & different health schemes. The mobilization was done with help of following activities; Door to Door distribution of printed MA card & make awareness of MA Yojana with help of Asha workers. Apart from these activities, to spread the awareness of the Mega Health Camp around were distributed in the district ¸ hoarding and banners were displayed in each & every PHCs and Public places. ¸ public meetings with help of FHW & Asha workers. Mass media like Television (local cable networks) and newspapers were also used days ahead of the camp so as to cover maximum beneficiaries.

There were many specialist doctors deputed in Mega health camp for preliminary check and assistance of the beneficiaries.. 1. Pediatric 2. Orthopedic 3. Physician 4. Cardiology 5. Psychiatric 8. Dermatology 9. General Surgery 10. Cancer Surgery 10. E.N.T. 11. Dental 12. Gynecology 13. Plastic Surgeon were the specialized field and doctors related to each specialization actively offered their services for the mankind. The Camp also housed a Pharmacy stalls. All primary drugs were available on 3 various pharmacy stalls on camp site. Drugs were provided to patient free of cost. Medical facilities laboratory, x-ray, sonography, ECG, 2D- Echo, etc . Along with these facilities patient counseling pick and drop Facility for patients, Shamiana, sitting lounge, fans, pure drinking water and hygienic food was provided in the camp.

- Total Registered Patients: 2509
- Total Screened Patient: 2509
- Total MAY Refer Patient: 31
- Total ECG done: 50
- Total 2D ECHO: 26
- Total Lab. Test:106
- Total X-ray: 46

At the end of Mega Health Camp Total Patients detail mentioned below.

Sr.no	Special referred to Specialized branches	No.of patients
1	General OPD	1280
2	General Physician	300
3	General Surgeon	85
4	Pediatric	110
5	Cardiology	50
6	Gynecology	40
7	Dermatology	98
8	ENT	110
9	Cancer Surgeon	10
10	Plastic Surgery	5
11	Orthopedic	170
12	Dental	50
13	Psychiatric	11
14	Renal	70

SNAPSHOTS OF MEGA HEALTH CAMP NAVSARI (APRIL 2013)

SNAPSHOT OF MEGA HEALTH CAMP NAVSARI (APRIL 2013)

SNAPSHOTS OF MEGA HEALTH CAMP AT NAVSARI (APRIL 2013)

3.9 INTEGRATED CHILD DEVELOPMENT SERVICES

ICDS scheme was launched on 2nd October 1975, in Chhotaudepur Block and the Scheme represents one of the world's largest and most unique flagship programs for Early Childhood Development. Gujarat is ICDS program symbolizes. The State's commitment to its children towards holistic approach for child health, nutrition and development. Currently the Scheme is operational in 336 Blocks in Gujarat.

In Navsari 3,02,506 children falling between the age group of 0 to 18 years underwent health checkup in year 2012-13. 42,693 children were found to be suffering from some ailments.Out of these, 3177 children were treated by specialist doctors. 5035 children who had problem with vision were distributed free spectacles by the health department. In August 2013, 56 children were referred to super specialist doctors 42 were found to be suffering from heart diseases,9 with kidney diseases and 5 were found to be suffering from cancer[27].

In an another welcoming step, children affiliated to different aanganwadis were distributed with free uniforms. The distribution of uniforms started from Jalalpore Taluka's Maroli village. Disctrict Collector Ms.Remya Mohan, District Development Officer Mr. K.D.Chandanani and other officers distributed uniforms to 1085 Aanganwadi Children. Mr. Vadilal Joshi, residing in Malad, Mumbai has sponsored the cost of all 1085 uniforms distributed.

Details of uniforms distributed among Aanganwadi Chidren has been mentioned in Table 3.22.

[27] Vikas Vatika (2012-13, 2013-14 ,2014-15) page no:59 (translated from Gujarat Version)

TABLE 3.22: DETAILS OF UNIFORMS DISTRIBUTED TO CHILDREN ENROLLED IN AANGANWADIS OF NAVSARI DISTRICT (TILL 2014-15)

Block Name	Sanctioned and approved Aaanganwadi Centres	Number of Aanganwadi Centres where Uniforms were distributed	Children Aged between 3 and 6 years		Total number of Children Enrolled in Aangawadis	Number of Children who received Uniforms		Total number of Children who received uniforms	Number of Children who could not receive uniform
			Boys	Girls		Boys	Girls		
Navsari	184	184	2673	2607	5280	2673	2607	5280	0
Jalalpore -1	121	44	1512	1469	2981	579	572	1151	1830
Jalalpore-2	112	47	1902	1791	3693	249	244	493	3200
Gandevi-1	120	120	1281	1272	2553	1281	1272	2553	0
Gandevi-2	120	120	1021	1037	2058	829	847	1676	382
Chikhli-1	203	93	1605	1588	3193	1163	1099	2262	931
Chikhli-2	192	77	1692	1675	3367	870	894	1764	1603
Vansda-1	136	136	1731	1677	3408	1731	1677	3408	0
Vansda-2	141	141	1379	1385	2764	1379	1385	2764	0
Total	1329	962	14769	14501	29297	10754	10597	21351	7946

Source: ICDS, Navsari

3.10 MANAGEMENT OF SEVERE MALNUTRITION UNDER MISSION BALAM SUKHAM

Mission Balam Sukham was officially launched on 18th September 2012 by Hon'ble Chief Minister of Gujarat state with an aim to combat malnutrition across the state. Under Gujarat State Nutrition Mission, there is a 3 - tier approach for Integrated Management of Malnutrition at different levels.[28]

3.10.1 BAL SHAKTIM KENDRA: The Village Child Nutrition Center as "Bal Shaktim Kendra" at Anganwadi centers for malnourished children without any medical needs. Under this program malnourished children without any medical needs are enrolled in the VCNC center for 30 working days and 5 times supervised diet + 2 times home diets in addition to micronutrient supplementation and medicines.

TABLE 3.23 PERFORMANCE OF BAL SHAKTIM KENDRA (YEAR 2013)

TALUKA	NUMBER OF MALNOURISHED CHILDREN	BAL SHAKTIM KENDRA (VILLAGE CHILD NUTRITION CENTRES) OPENED	NUMBER OF CHILDREN WHO COMPLETED 30 DAYS DIET PLAN	REPORTED WEIGHT GAIN AFTER 30 DAYS	NUMBER OF CHILDREN WHO SHIFTED TO A HIGHER GRADE IN TERMS OF WEIGHT GAIN
NAVSARI	3580	27	374	288	73
JALALPORE	3862	29	639	636	297
GANDEVI	3660	24	720	720	291
CHIKHLI	6634	239	4003	3614	1758
VANSDA	7674	155	3535	2693	1022
TOTAL	25321	474	9271	5951	3441

[28] *MISSION BALAM SUKHAM*. (2014, May 27). Retrieved June 28, 2015, from NATIONAL HEALTH MISSION: http://nrhm.gujarat.gov.in/mission-balam-sukham.htm

TABLE 3.24 PERFORMANCE OF BAL SHAKTIM KENDRA (APRIL 2013 TO MARCH 2014)

TALUKA	BAL SHAKTIM KENDRA (VILLAGE CHILD NUTRITION CENTRES) OPENED	NUMBER OF CHILDREN WHO COMPLETED 30 DAYS DIET PLAN	REPORTED WEIGHT GAIN AFTER 30 DAYS (AVERAGE WEIGHT GAIN IN GRAMS)	AVERAGE NUMBER OF CHILDREN ADMITTED PER SHAKTIM KENDRA
NAVSARI	21	322	466	15
JALALPORE	14	411	616	29
GANDEVI	25	720	456	29
CHIKHLI	270	2093	485	12
VANSDA	89	1520	486	17
TOTAL	319	5066	502	16

3.10.2 BAL SEWA KENDRA

The Child Malnutrition Treatment Center as "Bal Sewa Kendra" at PHC/CHC/ Sub District level for malnourished children needing some medical care. Under this program malnourished children with some medical needs are enrolled residentially in the CHC/ Sub District level hospital for 21 working days were they are provided 6-8 times supervised diet + micronutrient supplementation and medicines. During this period mothers of malnourished children are also provided wage loss compensation for the period they stay in the facility. As per the guidelines in year2012, per Child's mother or guardian) used to get Rs. 50/day as wage loss compensation and Rs.50 for each follow up visit after getting discharged. Length of stay was 10 days in year 2012 and 4 follow up visits were advised to the children enrolled under the scheme. This was revised in 2013 to Rs.100 per day and 21 days stay at Bal Sewa Kendra was proposed and implemented. Rs.100 per follow up for 3 consecutive follow-ups were sanctioned.

TABLE 3.25 PERFORMANCE OF BAL SEWA KENDRA (APRIL 2013 TO MARCH 2014)

Sr. No.	NAME OF CMTC (BAL SEWA KENDRA)	Target (No. of children expected upto March 2014)	No. of Children admitted	Admission Rate (%)	Average Weight Gain (Grams)
1	Chikhli	120	83	69%	440
2	Vansda	120	91	76%	610
3	Rumla	120	86	72%	703
4	Maroli	120	57	48%	526
NAVSARI DISTRICT TOTAL		**480**	**317**	**66%**	**570**

The table mentioned above signifies the role of CMTC (Bal Sewa Kendra) in interior parts of Navsari District. CMTC Rumla had an outstanding performance as far as average weight gain is concerned amongst its 86 patients treated between April 2013 and March 2014. CMTC Vansda also registered a decent admission rate of 76% patients with an average weight gain of 610 grams. Chikhli was seen to be having poor enrollment rate and poor weight gain with only 440 grams average weight gain.

3.10.3 BAL SANJEEVANI KENDRA: Nutrition Rehabilitation Center as "Bal Sanjeevani Kendra" at District Hospital/ Medical College for malnourished children with significant medical care.

TABLE 3.26 PERFORMANCE OF NUTRITION REHABILITATION CENTRE (APRIL 2013 TO MARCH 2014)

PERFORMANCE OF NRC (BAL SANJEEVANI KENDRA) APRIL 2013 TO MARCH 2015				
LEVEL HOSPITAL WHERE CHILDREN WERE TREATED	**TARGET (NO. OF CHILDREN EXPECTED UPTO MARCH 2014)**	**NUMBER OF CHILDREN TREATED 2013-2014**	**ADMISSION RATE (%)**	**AVERAGE WEIGHT GAIN (in Kilograms)**
Navsari Civil Hospital	120	44 (Nutrition Rehabilitation Centre started in July 2013)	37%	1.057
PERFORMANCE OF NRC (BAL SANJEEVANI KENDRA) APRIL 2014 TO MARCH 2015				
Navsari Civil Hospital	120	90	69%	0.699

3.11 PROJECT VATSALYADHAM

Malnutrition among its citizen is a very severe social problem, faced by any Country, as it affects productivity in many ways. The problem of malnutrition is especially critical in case of women and children. A women's nutritional status has important implications for her health as well as the health of her children because a malnourished woman is very likely to give birth to a malnourished child vulnerable to disease and infection.

3.11.1 PROJECT VATSALYADHAM - PERFORMANCE IN NAVSARI

The objective of VATSALYADHAM is to improve the nutritional status of children in Navsari and give health & nutrition education to the community especially to mothers, reduce under 6 year child mortality because of malnutrition and improve the physical & mental health of this age group. One important objective is to detect malnourished children at the earliest and treat them. The secondary objective of the project is to detect complications and diseases related to malnutrition and treat them accordingly.

TABLE 3.27 PERFORMANCE OF VATSALYADHAM SCHEME SINCE INCEPTION IN NAVSARI

Sr No.	Taluka	Place of Vatsalyadham	Date of Inception	No. of SAM Children	Details of Children Who gained Weight	Number of Pregnant Women enrolled	Details of Pregnant Women who gained Weight
1	Chikhli	PHC, Tankal	March 12,2012	180	87 Children gained about 500 gms while 62 gained more than 1 kg Weight	99	91 women gained more than 500 gms weight
2	Vansda	PHC, Mahuvas	March 12,2012	155	22 Children gained about 500 gms weight and 94 gained more than 1 Kg Weight	80	75 women gained more than 500 gms weight
3	Jalalpore	CHC,Maroli	July 24,2012	140	8 children gained about 500 gms and 112 children gained more than 1 Kg. weight	79	67 women gained more than 500 gms weight

During the initial years of its implementation in Navsari, Vatsalyadham project was started as a flagship in PHC,Tankal and Mahuvas from March 12,2012. Later on CHC, Maroli also joined the combat against malnutrion and treat 140 severely malnourished children and 79 pregnant women.

TABLE 3.28: PERFORMANCE OF VATSALYADHAM SCHEME SINCE INCEPTION IN NAVSARI (2014-2015)

Sr No.	Taluka	Place of Vatsalyadham	No.of batch Completed	No. of Yellow and Red Grade Children Admitted	No. of Children who gained weight	No. of Children with grade improvement	Red to Yellow	Red to Green
1	Chikhli	PHC, Tankal	6	98	98	40	38	2
2	Chikhli	PHC, Toranvera	7	131	130	68	60	8
3	Vansda	PHC,Mahuvas	8	134	134	14	11	3
4	Vansda	PHC,Mankuniya	7	136	117	78	63	4
5	Vansda	PHC,Anklachh	4	78	73	36	36	0

Five PHCs of Navsari as mentioned in Table 3.20 are functioning and has successfully treated many children. PHC Mahuvas and Mankuniya has shown remarkable performance in year 2014-2015.

3.12 CHILD DEVELOPMENT AND NUTRITION CENTRE (CDNCs):

Gujarat State Nutrition Policy

The Government of Gujarat is one of the few initial States in the country to develop a State Nutrition Policy. This policy formulation has been preceded by many planning exercises viz. the State Plan of Action for the Child which also incorporated a plan of action to reduce malnutrition; Inter-sectoral Plan of Action for Health and Nutrition. Simultaneously, another planning exercise was held for the preparation of the Project Proposal for external funding as well as social assessment. These planning exercises aimed to improve the ICDS services, particularly, to reduce malnutrition in women and children under two years.

Child Development & Nutrition Centres (CDNCs) have been established at the district hospitals by the Department of Health. 'Balbhog' is provided to the severely underweight children at the CDNCs by the ICDS. The AWWs are also involved in bringing the children to the CDNCs.

Five CDNCs were set up till March 31,2013 in Navsari district Chikhli,Vansda, Rumla, Tankal and Mahuvas.

TABLE 3.29 PERFORMANCE OF CDNCS IN NAVSARI (JULY 2010 TO MARCH 2013)

Sr No.	Name of CDNC	Date of Commencement of Programme	Number of Children Admitted			No. of Children who continued Treatment			Dropouts			No. of Children With improvement in Weight			No. of Children with grade improvement		
			2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
1	**Chikhli**	July 14,2010	234	310	282	233	307	281	1	3	1	232	307	281	74	104	222
2	**Vansda**	July 22.2010	234	311	297	218	304	293	16	7	4	218	304	292	117	139	114
3	**Rumla**	March 29,2011	------	320	290	---	320	286	--	0	1	---	320	287	------	135	117
4	**Tankal**	December 2012	------	-----	45	------	-----	45	------	-----	0	------	-----	40	------	-----	26
5	**Mahuvas**	December-2012	------	-----	36	------	-----	36	------	-----	0	------	-----	36	------	-----	23
	TOTAL		468	941	1022	451	931	944	17	10	6	450	931	936	191	378	502

CASE STUDY 3.1

VATSALYADHAM PROJECT: A Unique Intervention to fight malnutrition among Children of Navsari District

APPRECIABLE WORK AT PHC MAHUWAS UNDER VATSALYADHAM PROJECT

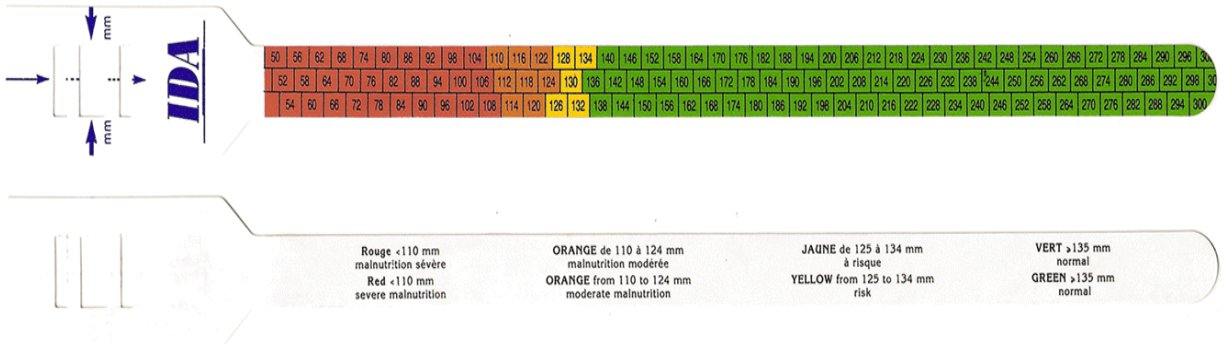
Visiting the health facility at Vatsalyadham-Mahuwas comes with a lot of surprises. If one visits the room where severely malnourished children are admitted, it looks as if there is some birthday celebration going to take place. One can see decorated rooms which makes the indoor patients feel at home. Dr. Harish Patel, Medical Officer, PHC Mahuvas and his dedicated staff are endevouring day and night for treating children suffering from acute malnourishment in Vansda block of Navsari district.

SCREENING FOR ACUTE MALNUTRITION

Acute malnutrition is a result of recent (short-term) deficiency of protein, energy together with minerals and vitamins leading to loss of body fats and muscle tissues. Acute malnutrition presents with wasting (low weight-for-height) and /or presence of pitting oedema of both feet.

Screening for acute malnutrition includes;

1. Use and interpretation of Mid-Upper Arm Circumference (MUAC) Tape
2. Checking for bilateral pitting oedema



Tape used for Measuring MUAC (Mid Upper Arm Circumference) of child

After an initial phase of detection of malnourished children gets over, nutritional rehabilitation starts. All patients are shifted to special ward designated as child development and nutrition Centre (CDNC). Navsari District health department has named it 'Vatsalyadham'. Along with Mahuvas PHC, Vatsalyadham Centres are also set up at Tankal, Maankuniya, Aanklachh and Toranvera PHCs of Navsari district. The current capacity of CDNC at Mahuvas is 20 patients.

Malnourished children as per ICDS data are screened at Mahuvas PHC by the Medical officer and undergoes lab tests like hemoglobin examination, blood grouping, urine/stool test for detecting the presence of any other existing disease/ condition.

Vatsalyadham is a specially designed setup for nutritional supplementation for malnourished children, where residential facilities are made available for mother/guardian/care taker and child for staying up to 21 days. A qualified nutritionist is available and food is prepared as per standards. Food items, thus prepared are according to local customs and contain calories and protein as per the WHO guidelines for individual patients. Mothers/care taker are given education about child care and other important aspects of diet and nutritional practices for child growth. De-worming & IFA tablets and vitamin A were given in a syrup form.

Patients admitted to nutrition ward are also examined by Pediatricians (available in nearby cities and paid according to their visit) and appropriate measures are taken for medical management whenever required. These patients are daily weighed, and their diet and daily intake are analyzed and recorded. Length is measured on admission and on daily basis.

Apart from these measures, Immunisation gaps are also met while patients' stay and parents are counseled for further home management of the child and are advised for further follow up before they are discharged from Vatsalyadham. Vitamin A administration is done along with providing these children with multivitamins and minerals including zinc and calcium. Thereafter in the case of the children suffering from disease and some medical complication, this supplementary food was stopped immediately and the child was referred to specialist pediatricians.

All information related to patients are noted including patient's clinical status, basic information regarding patients and parents, socio-economic background, education and occupation of mother and father, family income etc. Mother/guardian is provided with

Rs.100 per day as per government policy. Medical treatment including investigations were provided free of cost as per the government hospital policies. All financial expenditure, other than medication, such as salary of the nutritionist, cook, workers, provisions, vegetables, milk, fruits etc are provided by grants allotted by Government.

Follow up medical examinations were carried out including Lab test and weight along with general health check up by medical officer and treated if required. Some serious cases are being referred to a pre-defined private pediatrician on a convenient date. Table mentioned below focuses on treatment and subsequent follow up of first eight batches of Vatsalyadham at Mahuvas PHC. Under the able supervision of Dr. Harish Patel, 155 kids suffering from severe malnutrion were identified and treated in the first eight batches. The summary of first eight batches of patients treated is mentioned as per table below.

TABLE 3.30 VATSALYADHAM MAHUVAS: FIRST 8 BATCHES

Batch no	No. of Malnourished Children Admitted	During time of Admission		DISCHARGED On Day of Discharge (21 days)			FOLLOW UP CHECK UP After 36 days			After 60 days			After 90 days		
		R	Y	R	Y	G	R	Y	G	R	Y	G	R	Y	G
1	15	12	3	9	5	1	10	4	1	5	9	1	9	5	2
2	20	16	4	9	9	2	10	6	4	12	5	3	3	16	1
3	20	16	4	7	10	3	13	6	1	10	7	3			
4	20	20	0	3	14	3	3	13	4						
5	20	15	5	5	11	4									
6	20	11	9	4	7	9									
7	20	20	0	6	13	1									
8	20	20	0	3	17	0									

MUAC is measured during the time of admission. Eg. In batch 1, a total of 15 severely malnourished children were admitted at PHC Mahuvas. 12 Children were falling in red zone which means acutely malnourished and 3 children were falling in yellow zone. After just 21 days of providing nutritious food and proper medication, Children started showing improvement. As per personal interview conducted with Dr. Harish Patel, it was stated that generally a Child starts gaining weight at the end of 7 days. It can be observed that slowly and steadily (after 90 days of treatment, children start falling in green zone.)If other diseases are detected along with severe manlnutrion, a qualified pediatrician is called and quality medical aid is being provided to such kids in a timely manner.

CONCLUSION:

Vatsalyadham at PHC Mahuvas is a excellent example of good community heathcare practice in the most interior part of tribal area. Dr. Harish Patel and his dedicated team deserve a lot of appreciation. Child mortality because of malnutrition can be reduced if; 1) A balanced diet is provided, that includes the consumption of milk & milk products (which are a good source of protein) green vegetables (source of vitamin A & iron), 2) Regular & continuous monitoring & health checkups 3) Community awareness & health education Cooperation within different sections of the health department and between the health department and other related departments.

The results so far have been encouraging for the Vatsalyadham project. More such initiatives can be taken by Navsari District Administration to curb the menace of child malnutrition completely from the district.

BASIC FACILITIES ESTABLISEHD UNDER VATSALYADHAM SCHEME AT PRIMARY HEALTH CENTRE MAHUVAS

Source: Field Visit

CHILDREN SUFFERING FROM ACUTE MALNOURISHMENT UNDERGOING TREATMENT AT MAHUVAS

Source: Field visit

BOX 3.4

YASH BHOYA GETS HOPE FOR SURVIVAL

Eighteen-month-old Yash from Maankunia village of Navsari district's tribal belt could not even move in the bed. He was so severely malnourished that his mother Sarika Bhoya had even given up the hopes of his survival.

However, some people came one day, put them in jeep and took them to health centre in the village located on border with Maharashtra. After medical examination, the duo was given five meals every day that were full of proteins and vitamins. Sarika was even given Rs 100 per day as work allowance as a part of Vatsalyadham project.

After 21 days, Yash became a bubbly child like any other normal baby.

"For the first time, Yash ate stomach full and by the evening he was satiated," Sarika said. This is not an isolated case but hundreds of mothers and their malnourished children mostly aged 6 months to 3 years have got a new lease of life, thanks to the project Vatsalyadham. The project is run under Tribal Sub Plan (TSP) and funded from tribal development funds.

In two years, more than 450 severely malnourished children have been provided with nutritional rehabilitation services in five centres of Navsari district namely Maankuniya, Tankal, Mahuvas, Toranwera and Anklachh.

This is the first such project in whole of Gujarat for severely malnourished tribal children.

"It is very difficult for working women in tribal areas to give a balanced meal to their children. She doesn't even have sufficient money to feed her child properly. Moreover, she does extremely laborious work and as a result child is neglected,"

(***Based on personal interview conducted on March 11,2015 with Dr.Jahanvi B.Patel and Dr.Alka D.Ganvit, appointed at Maankuniya PHC)***

BOX 3.5

PROJECT 'SAMVEDANA': DISTRICT COLLECTOR AND OTHER OFFICERS ADOPT MALNOURISHED KIDS

In a fun filled musical evening on the New Year eve, District Collector Ms. Remya Mohan and other district officers adopted severely malnourished children at Gangpur village in Vansada Taluka. A joyous funfilled evening started with celebration of key District level officers with severely malnourished children. The District Collector inaugurated project 'Samvedana' by letting the kids cut a cake followed by dinner for all invitees along with families of malnourished kids. Thus they established an excellent example of empathy and love for such kids.

Class 1 and Class 2 officers of district level, education department, key officials of Vansda Taluka and Officials from Health Department of Navsari adopted a total of 156 kids and took complete responsibility of providing these children with good health and education.

Even people associated with media adopted two children from the same area thus supporting the noble cause. Sardar Patel group adopted 15 children from Hanuman Bari and Rani Faliya and decided to look after them after getting them admitted in Cottage hospital.

Collector Ms.Remya Mohan having dinner with Malnourished Kids

In a highly appreciable gesture, District Collector of Navsari Ms.Remya Mohan expressed her willingness to adopt 2 malnourished children. District Education Officer and his team announced that they will take care of children in Anganwadis situated around Secondary and Higher Secondary Schools in the district. Officers of the health department and all key officials of Vansda Taluka agreed to look after 5 children each and constantly monitor their health till they attain healthy body weight and come out of their malnourished status.

Source: prepared on the basis of article in http://she.divyabhaskar.co.in/article/DGUJ-NAV-malnourished-children-program-held-in-vansada-4860158-NOR.html

BOX 3.6

MUKHYAMANTRI AMRUTAM YOJANA

61 years old Babubhai Ramjibhai Gavli who resides in Vansda village of Navsari district earned his living as a farm labourer in nearby areas. He was suffering from kidney stone and his work used to get affected because of it. He knew that he needs to get operated to get rid of kidney stone but he was procrastinating his operation due to unavailability to funds to meet the medical expenses.

Beneficiary of Mukhyamantri Amrutam Scheme Mr.Babubhai Ramjibhai Gavli

(Photo courtesy: Mr. Rizwan Lakdawala, District Co-ordinator for Mukhyamantri Amrutam Yojana ,MDI ndia NetworX Pvt. Ltd.)

One day, he came to know about 'Mukhyamantri Amrutam Scheme' of the State Government. He got his 'MA' card issued from Taluka kiosk situated at Vansda. His relatives got him admitted at Orange Hospital situated in Navsari. Dr. Nishith Nayak treated his case free of cost under the Mukyamantri Amrutam Yojana. After getting completely cured from the terrible pain of stone, he was discharged and was also provided with Rs.300 for travelling back to his home.

Today Babubhai is living a healthy life along with his family and has resumed his work as a farm labourer. 'Mukhyamantri Amrutam' gave him a ray of hope and a new pain-free life.

(Based on success stories provided by Mr.Rizwan Lakdawala, District Co-ordinator, Mukhyamantri Amrutam. Translated from Gujarati version)

BOX 3.7

Lalitaben gets new life because of Mukhyamantri Amrutam Scheme

Resident of Jamanpada Village situated in Chikhli Taluka of Navsari, Lalitaben M.Vaadu is one of the four bread-earners of a joint family. Lalitaben and her husband along with her in-laws work as labourers and do petty jobs to support their family and education of her 3 children.

Lallitaben got treated under Mukhyamantri Amrutam Scheme

(Photo courtesy: Mr. Rizwan Lakdawala, District Co-ordinator for Mukhyamantri Amrutam Yojana ,MDI ndia NetworX Pvt. Ltd.)

Lalitaben was suffering from chest pain since a long time but could not afford costly medical treatment. She heard about Mukhyamantri Amrutam Scheme. After getting her 'MA' card ready from Chikhli, she was admitted to Orange Hospital of Navsari. Dr.Jagdish and his staff treated Lalitaben under the scheme and also provided Rs.300 for travelling back to her village. She is now cured and living a happy life with her family members.

(Based on success stories provided by Mr.Rizwan Lakdawala, District Co-ordinator, Mukhyamantri Amrutam. Translated from Gujarati version)

BOX 3.8

TARABEN HALPATI GETS TIMELY TREATMENT FOR CANCER

Taraben N.Halpati aged 50 who resides in Gandevi does household jobs to support her husband who earns meager amount by doing a private job. Things worsened when Taraben was told that she had cancer. Her cancer was first detected at Civil Hospital ,Navsari and doctors had advised her to start the treatment as early as possible.

TarabenHalpati got timely treatment for Cancer

(Photo courtesy: Mr. Rizwan Lakdawala, District Co-ordinator for Mukhyamantri Amrutam Yojana ,MDI ndia NetworX Pvt. Ltd.)

On getting information about Mukhyamantri Amrutam Scheme her family got her 'MA' card issued from Gandevi Taluka Kiosk. Dr. Parimal Lad, Yesha Cancer Hospital took charge of her case and started her treatment under the scheme. The treatment which costed around Rs.25,000 was given free of cost under "MA" scheme. Though her cancer is not fully cured ,that she is fighting the disease with proper and timely treatment. She feels great relief since her treatment has started.

(Based on success stories provided by Mr.Rizwan Lakdawala, District Co-ordinator, Mukhyamantri Amrutam. Translated from Gujarati version)

3.13 ROGI KALYAN SAMITI

In most government hospitals, not enough attention is paid towards the problems of general administration, co-ordination, problem solving and day-to-day management. As a result, it is left to a handful of officials headed by a Superintendent and constrained by stringent regulations to manage the hospitals.

3.13.2 REVIEW OF PERFORMANCE OF ROGI KALYAN SAMITIS IN NAVSARI

Rogi Kalyan Samitis are formed only at the PHC levels in Navsari District with Chikhli Taluka having the highest number of RKS followed by Vansda and Jalalpore.

TABLE 3.31 ROGI KALYAN SAMITIS FORMED AT DIFFERENT PRIMARY HEALTH CENTRES OF NAVSARI DISTRICT

Navsari	Jalalpore	Gandevi	Chikhli	Vansda	TOTAL
5	7	6	13	8	39

Source: CDHO,Navsari

Only Navsari Taluka's data was available for review where it was found that Rs.92,381 were spent behind purchasing furniture, Rs. 45,000 for Construction work in the PHCs, Rs 20000 were allocated for purchasing first aid material. Simlarly, Rs.48,844 were allocated for review of OPD, IPD and other work. Only Rs.3310 were spent after organizing health camps. As per the data other expenses for Navsari Taluka's RKS amounted to Rs.288721.[29]

A review of RKS functioning in Navsari revealed that this can become a viable and operationally feasible model by building capacities of RKS members and support systems for effectiveness in RKS functioning, contributing to reporting and documentation of challenges and scopes, bringing out transparency, accountability and partnerships can contribute to transform a community led sustainable RKS. This will ensure community led partnerships for scaling up of local specific innovations and sustainable RKS strategies on benefiting health services meaningfully to the local community.

- Formal training for health systems and support systems functionaries is yet to be strategized.

[29] Office of CDHO, Navsari District Health Office,Navsari

- Appropriate monitoring system is yet to be operationalised in Navsari District

For the successful implementation of RKS in Navsari district following matters requires immediate attention:

- Support systems capacity needs to be coordinated with functional health system by adequate supervision, monitoring and motivation of RKS members.
- Financial management and adequate accountability of reporting and documentation.
- Effective community participation through social mobilization and partnerships.
- Capacity building for systems strengthening.

3.14 RASHTRIYA SWASTHYA BIMA YOJANA

Rashtriya Swasthya Bima Yojana (RSBY) is India's first social security scheme that embraces a profit motive, and is a good example of public-private partnership in the social sector. The insurer (public or private) is paid premium for each household enrolled for RSBY. The government by paying a maximum sum upto Rs.750/- per family per year, allows access to quality health care to its BPL population fulfilling its commitment to one of the important Millennium Development goals. As per August 20,2015 statistics, a total 85766 targeted families exist in Navsari district. Out of 85,766 targets 41,814 (48.75%) BPL citizens have been enrolled under this scheme, while 7992 (9.32%) have enrolled under MNREGA's insurance. In year 2013-14, 4890 beneficiaries were treated in various 30 hospitals of Navsari District[30].

TABLE 3.32 TOTAL NUMBERS OF HOSITALS (TALUKA WISE) EMPANELLED UNDER RSBY

Taluka	DH	SDH	CHC	Private Hospitals	Total
Navsari	1	0	2	7	10
Jalalpore	0	0	2	1	3
Gandevi	0	1	2	5	8
Chikhli	0	0	3	3	6
Vansda	0	1	1	0	2
Total	1	2	10	16	29

[30] Vikas Vatika, Gatishil Navsari Jillo (Year 2012-13, 2013-14 and 2014-15) page 57

TABLE 3.33 OVERVIEW OF RSBY IN NAVSARI (2013)

Policy start Date	Policy End Date	Total Target Family	Total Enrolled Family	Enrollment Rate(%)	Hospital Empanelled	No of Claims	Total Claim Amount
1.4.13	30.09.15	85766	50760	59.18	29*	7400	2,42,15,269

TABLE 3.34 OVERVIEW OF RSBY IN NAVSARI (2014-15)

Policy year	Total no of claim	Total claim Amount	Settled Claim	Settled amount
2014-2015	**7400**	**2,42,15,269**	**7312**	**2,16,68,254**

3.15 BETI VADHAAO ABHIYAAN

Statistics indicates that Navsari was ranked ninth in year 2001 in terms of sex ratio amongst all district but the rank has improved and Navsari is at the Seventh Position in term of sex ratio in 2011. Figure 3.41 mentioned below indicates that Navsari has always been better as compared to Gujarat's average throughout year 1901 to year 2011 when compared to Gujarat State. Three decades 1951 to 1971, Navsari's gender ratio was even better with number crossing over 1000 female births.

TABLE 3.35 CHILD SEX RATIO (GUJARAT AND NAVSARI DISTRICT)

State/District	1991	2001	2011
Gujarat	**934**	**920**	**919**
Navsari District	958	955	961

Source: Census of India, 2011

3.16 CONCLUSION:

Infrastructure plays a vital role in delivery of public health. Availability, accessibility, affordability and awareness are the four on which Maternal and child health, ANC and PNC and health of other people residing in any district depends upon. Government has launched several schemes for the benefits of downtrodden and destitute residing in Navsari, especially the tribal belt. While concluding this chapter on health we would like to emphasize on the following points:

- Although many schemes exist for the vulnerable groups, it is very difficult for them to access these schemes. Reasons for this are: lack of awareness, unsatisfactory dissemination of information on schemes, issue of too many ID cards/ proofs and other documents, all these factors make the process of availing benefits lengthy and expensive.
- A deep need perceived for training of frontline health workers as well as Dais, especially for reaching out to women in remote areas. Regular training and practical examination for nurses are also needed.
- In different areas of districts the situation of Mamta Divas had improved, with the day being observed at least once a week. Mamta diwas is conducted regularly but quality of services are poor, health staff cannot identify high risk pregnant women, health education is not given during mamta diwas or in home visits, nutrition demonstrations are not done, beneficiaries are unaware about govt schemes, paper work is difficult and talatis are not available regularly,
- If pregnant women wish to go for better antenatal care outside their village, it is expensive, and transport is difficult, lack of sensitivity in health staff is evident- all these factors culminate in very poor maternal health.
- Post-natal visits are poorly conducted by health staff, field workers needs to be trained adequately to conduct good quality PNC visits. Most of the time women neither go back for PNC, nor does anyone follow up from the health system.

Major aspects which required utmost attention are as follows:

CHIRANJEEVI YOJANA

Having experienced enormous success in the initial years, Chiranjeevi Yojana, however, seems to have lost grip with gynaecologists in Navsari District in the successive years. Not only have numbers of gynaecologists enrolled under the scheme diminishing at an alarming pace, but so are the numbers of deliveries performed under it.

1. Chiranjeevi Yojana is operating very smoothly in the district but the monitoring framework does not capture the quality of services provided to beneficiaries.
2. Mechanisms for post-delivery care of mother and infant have not been established adequately.
3. Importance of proper project identification and structuring is required so as to attract more private obstetricians. The Chiranjeevi scheme is noteworthy for the use of existing private medical resources in rural areas in order to fill existing gaps in public service delivery and creating a'win-win'structure so as to encourage both providers and beneficiaries.
3. Importance of developing effective and stimulating compensation/ remuneration systems, in order to harness quality services from private providers, while building in requisite disincentives for misuse is required

RASHTRIYA SWASTHYA BIMA YOJANA

Initially, there were problems registering BPL people because of migration, death and inaccurate data, and because people were simply unaware of the scheme and its possibilities, utilisation rates were low but gradually RSBY is picking up momentum in the District.

Tools like health camps, engaging NGOs and awareness events in schools should be more effectively used to increase awareness and bring beneficiaries to the hospitals.

The availability of the hospitals in remote areas is another major challenge in increasing utilisation of the scheme. New demand demonstrates that RSBY fosters the establishment of additional hospitals even in these areas. To successfully implement a complex scheme like RSBY, capacity building is necessary at all levels. Building the managerial and

conceptual capacities of the organization and individuals involved has proved to be a major challenge.

Following are some recommendations to improve healthcare services in Navsari:

a. Management capacity should be improved by creating additional permanent posts at different facilities at the directorate to plan, implement successful health programmes.

b. Improvements and maintenance of the health infrastructure of the existing infrastructure are necessary to provide good quality healthcare services.

With new initiatives, such as training of doctors for specialized skills and public-private partnerships for improving health services, Navsari is fast emerging as one of the progressive Districts of Gujarat. The goal of reducing maternal mortality and infant mortality can be achieved only by creating awareness among policy-makers, implementing evidence-based interventions and through mobilization of professionals and society. The speed of implementation of flagship programmes in health where public participation is required depends on strategies adopted to ensure skilled professionals in healthcare, the extent of accountability of professionals responsible for overall health, and the willingness of politicians to support maternal health, child health and adolescent health and family planning programmes by allocating resources to strengthen the health system.

3.17 IN A SNAPSHOT: STRENGTH, WEAKNESSES, OPPORTUNITIES AND CHALLENGES ANALYSIS

Strengths

- Existence of 281 Sub Centers, 39 PHCs, 10 CHCs, and 1 Govt Hospital.
- The trend has shifted from home delivery to institutional deliveries.
- Vatsalyadham Scheme has worked very well in providing nutrition and health to Children of tribal talukas
- Literacy level of the district has increased over the period of years, this will help people in participatory healthcare development because education may change their perceptions.
- Many people have been benefited because of Mukhyamantri Amrutam Yojana

Weakness

- Vast gap between health care infrastructure in Urban and Rural areas.
- Medical and Para Medical staff positions vacant at various levels.
- Public clinics attract less number of patients for maternity care compared to private clinics.
- Field workers are overloaded with multiple tasks Overloading these workers can dilute their efforts vis-à-vis their primary responsibilities for Maternal and Child Health.
- Though Janani Suraksha Yojana has been successful in increasing institutional deliveries, it has been largely ineffective in leveraging upon availability of in Vansda and Chikhli areas.

Opportunities

- Chiranjivi Yojana, Janani Suraksha Yojana has played vital role in women and child health care and can be strengthened further to shower its benefits in deprived areas.
- Vaccination and Immunisation schemes can be more effective provided there are regular follow ups.
- Women and Child health care services in Tribal areas to be strengthened for better results in such areas.
- Vatsalyadham project if extended to other PHCs can help curb the menace of malnutrition
- Since the private health sector is present as well as preferred in India, possible contributions through Public-Private Partnership (PPP) models like Chiranjeevi Yogna should be considered as an opportunity

Challenges

- More emphasis needs to be given to Post Natal Care of Inhabitants of far flung areas of Navsari District.
- Obtaining adequate staff for health care facilities continues to be difficult, and some sanctioned positions do not get filled especially in interiors of Vansda where people do not want to get posted.
- To increase the vaccination and Immunisation in scattered and tribal areas.
- Spreading health care awareness in remote areas with scattered population and low literacy is a major is a challenge.
- Lack of basic health care services in backward areas due to non-availability of staff.

CHAPTER: IV

AGRICULTURE, ANIMAL HUSBANDRY AND LIVELIHOOD

4.1 INTRODUCTION

Agriculture means the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products.[1]Agriculture is backbone for any economy. Agriculture development is essential part for the overall development of the economy. Agriculture is the main sector of Indian economy which is amply powered by share in national income, largest employment providing sector, provision of food surplus to the expanding population, contribution to capital formation, and providing raw material to industry and very important for international trade. Agriculture provides rewarding employment and livelihood for majority of the population in India. As per 2011 census, 69.23 % population of Navsari districts lives in rural areas of villages. The total population of Navsari district living in rural areas is 1329672 of which males and females are 678165 and 651507 respectively[2]. Since majority of the workforce is engaged in this sector, it is essential that this sector develops to ensure sustainable earnings to the people engaged in the primary sector. The animal husbandry also plays vital role in providing nutritive food and supplementary income to the economically weaker section of society. It offers employment potential, if adopted on a large commercial basis and provides opportunities for woman empowerment in rural area.

The chapter discusses land use pattern, land holding features, cropping pattern, major crops and productivity, livestock in Navsari, livelihood by agriculture and animal husbandry, schemes and Flagship programs for agriculture and animal husbandry, success stories and status of talukas in pertaining to agriculture and animal husbandry in Navsari.

4.2 LAND USE CLASSIFICATION

Forest area includes all land classified either as forest under any legal enactment, or administered as forest, whether State-owned or private, and whether wooded or

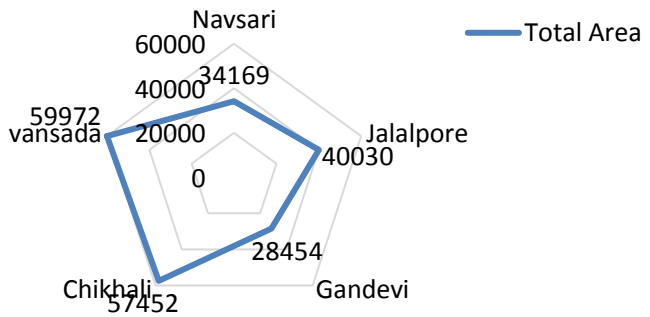
[1]*merriam-webster*. (n.d.). Retrieved march 4, 2015, from An Encyclopædia Britannica website: http://www.merriam-webster.com/dictionary/agriculture

[2](n.d.). Retrieved march 4, 2015, from gujarat cencus: http://www.census2011.co.in/census/state/gujarat.html

maintained as potential forest land. Non agriculture lands includes all land occupied by buildings, roads and railways or under water, e.g. rivers and canals, and other land put to uses other than agriculture. This includes all grazing land whether it is permanent pasture/meadows or not. Village common grazing land is included under this category. [3]

The total area of Navsari district is 220000 Sq.km out of which 27% belongs to Vansda, 26% belongs to Chikhli, 18% belongs to Jalalpore, 16% belongs to Navsari and remaining 13% belongs to Gandevi as shown in Figure 4.1

Figure:4.1 Total area of each taluka of navsari



(Source: District Statistical outline 2010-11)

The total reported area of Navsari is about 220000 Sq.km of which 11.41% is forest area which is about 25118 Sq.km, 8.95% is under non- agricultural use which is about 19696 Sq.km and 2.42% is grazing land which is about 5346 Sq.km. However, 57.27% of total reported area is net cropped area and it covers 126032 Sq.km as shown in Table 4.1.

TABLE 4.1(I): TALUKA WISE LAND USE CLASSIFICATION (IN SQ.KM) (2011)

Taluka	Forest Area	Non Agricultural Land	Grazing Land	Net Sown Area	Total Area
Navsari	0	4642	703	22200	34169
Jalalpore	3360	4350	790	23902	40030
Gandevi	187	3694	598	18062	28454
Chikhli	1281	4400	1039	41368	57452
Vansda	20290	2610	2216	20500	59972

(Source: District Statistical outline 2010-11)

[3](n.d.). Retrieved march 4, 2015, from http://eands.dacnet.nic.in/PDF_LUS/Concepts_&_Definitions.pdf

Geographically, Vansda is the biggest taluka sharing 27.26% of district area, while Gandevi is the smallest taluka sharing 12.93% of area of district. Vansda shares maximum forest area (80.78%) of the district, while Navsari do not share forest at all.

Navsari shares largest area (23.56%) under nonagricultural use and Vansda shares least area (13.25) under nonagricultural use. Vansda shares maximum area (41.46%) under grazing and Gandevi shares least area (11.18%) under grazing.

Chikhli shares largest net cropped area (32.82%) of the district, while Gandevi shares least portion (14.33%) of net cropped area of the district as shown in table 4.1(ii)

TABLE 4.1(II): TALUKA WISE LAND USE CLASSIFICATION (IN PERCENTAGE)(2011)

Taluka	Forest Area		Non Agricultural		Grazing Land		Net Cropped Area		Total Area
	Dist. %	Tal %	Dist %	Tal %	Dist %	Tal %	Dist %	Tal %	(Sq. Km)
Navsari	0	0	2.11	23.56	0.32	13.15	10.09	17.61	34169
Jalalpore	1.53	13.38	1.98	22.09	0.36	14.78	10.86	18.97	40030
Gandevi	0.08	0.74	1.68	18.76	0.24	11.18	8.21	14.33	28454
Chikhli	0.58	5.1	2	22.34	0.47	19.43	18.8	32.82	57452
Vansda	9.22	80.78	1.19	13.25	1.01	41.46	9.31	16.27	59972

(Source: District Statistical outline 2010-11)

4.3 CROPPING INTENSITY

Cropping intensity is defined as a ratio between net sown area (NSA) and gross cropped area (GCA). It thus indicates the additional percentage share of the area sown more than once to NSA. It may be measured by the formula-gross cropped area/net sown area x 100.

The intensity of cropping, therefore, refers to raising a number of crops from the same field during one agricultural year. The index of cropping intensity is 100 if one crop has been grown in a year and it is 200 if two crops are raised.

Higher the index, greater is the efficiency of land use.4The cropping intensity of the district is shown in table 4.2.

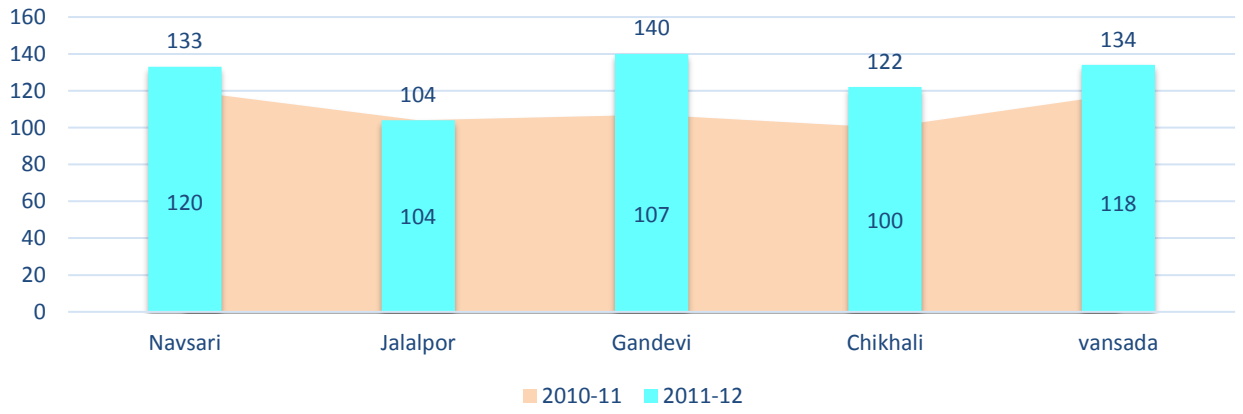
TABLE 4.2: TALUKA WISE CROPPING INTENSITY

	2010-2011			2011-2012		
District/ Taluka	Net Area Sown (Ha)	Gross Area sown(Ha)	Cropping Intensity (%)	Net Area Sown (Ha)	Gross Area sown(Ha)	Cropping Intensity (%)
Navsari	22200	26684	120	20843	27745	133
Jalalpore	23902	24902	104	23427	24427	104
Gandevi	18062	19262	107	13247	18486	140
Chikhli	41368	41368	100	47898	58468	122
Vansda	20500	24102	118	30730	41280	134
Total	126032	136318	108	136145	170406	125

(Source: District statistical outline 2010-11 & 2011-12, Navsari)

Thus higher cropping intensity means that a higher portion of the net area is being cropped more than ones during one agricultural Year. This also implies higher productivity per unit of land during one agricultural Year. In 2010-11 the cropping Intensity of Navsari was highest and the cropping Intensity of Chikhli was lowest in the district whereas in 2011-12 the cropping intensity of Gandevi was highest and Jalalpore was lowest as shown in figure 4.2.

Figure 4.2: Cropping Intensity of Navsari



(Source: District statistical outline 2010-11 & 2011-12, Navsari)

[4]Raja, K. (2012, January 30). *preserve article*. Retrieved march 4, 2015, from preserve article websire: http://www.preservearticles.com/2012013022034/short-notes-on-the-cropping-intensity-of-green-revolution.html

The cropping intensity of each taluka has increased compared to previous year except Jalalpore. Proper irrigation system, adequate use of fertilizer, crop rotation, Mixed Cropping and use of fast maturing varieties can play important role in raising cropping Intensity.

4.4 LAND HOLDING FEATURES

Land holding is the concept which involves operating of land for the purpose of producing agricultural goods. Land is the fundamental means of production without which no agriculture production can take place. An understanding of the pattern of ownership and operational holdings of land is therefore of very important to understand the structure of the society. Land is regarded as the means of piling of wealth that also symbolizes social status and political power and hence land being a basic and primary resource. The total population of the Navsari district as per 2011 census was 1329672 out of which 35464(2.67%) belongs to SC population and 639659(49.22%) belongs to ST populations and remaining 654549(48.11%) belongs to other category. In 2010-11 the total land holding area in the district is decreased by 4.04% as compared to 2005-06. The total SC land holding area in the district is decreased by 4.72%, the total ST holding area in the district is decreased by 5.16% and the other holding in the district is decreased by 3.24% as compared to 2005-06 as shown in Table 4.3(i) and 4.3 (ii).

TABLE 4.3(I):NO. AND AREA OF OPERATIONAL HOLDERS TO SIZE CLASS AND SIZE GROUP (2005-06)

Size class	Total holding		Average	SC holding		ST holding		Other holding	
	No.	Area		No.	Area	No.	Area	No.	Area
Marginal	76938	24780	0.32	2948	888	20891	7659	53099	16235
Small	21215	30109	1.42	616	871	8299	11776	12300	17462
Semi medium	14346	39827	2.78	363	1005	6239	17343	7744	21480
Medium	6090	34509	5.67	112	595	2807	16046	3171	17867
Large	623	12932	20.76	7	95	282	5337	334	7499
Total	119212	142157	1.19	4046	3454	38518	58159	76648	80543

(Source: Agriculture census 2005-06)

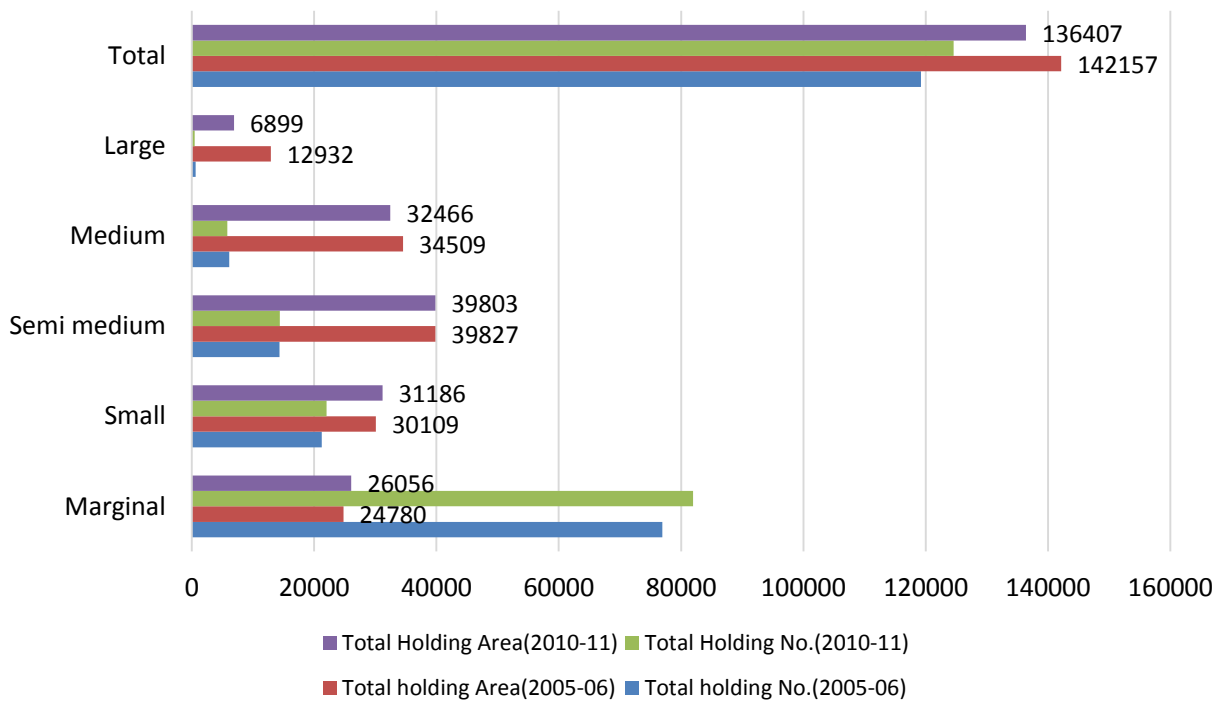
TABLE 4.3(II):NO. AND AREA OF OPERATIONAL HOLDERS TO SIZE CLASS AND SIZE GROUP (2010-11)

Size class	Total holding		Average	SC holding		ST holding		Other holding	
	No.	Area		No.	Area	No.	Area	No.	Area
Marginal	81939	26056	0.32	3058	894	21534	7847	57347	17314
Small	22022	31186	1.42	605	858	8424	11931	12993	18394
Semi medium	14388	39803	2.77	339	935	6174	17121	7875	21746
Medium	5787	32466	5.61	105	561	2700	15386	2982	16517
Large	453	6899	15.23	3	42	214	2901	236	3956
Total	124589	136407	1.09	4110	3291	39046	55189	81433	77927

(Source: Agriculture census 2010-11)

In 2010-11 the total land holders in the district are increased by 4.72 % as compare to 2005-06. The total SC land holders in the district are increased by 1.58%, the total ST land holders in the district are increased by 1.21% whereas the other land holders in the district are increased by 6.24% as compared to 2005-06.

Figure:4.3 Total land holding by size Class for the year 2005 and 2011



(Source: Source: Agriculture census 2005-06 & 2010-11)

TABLE 4.3(III): AVERAGE LAND HOLDING AND PERCENTAGE OF ALL SOCIAL GROUPS

Size class	Year	Avg. land holding per person	% size against total area	% holdings of SC	% holdings of ST	% holdings of other
Marginal	2005-06	0.32	17.43	3.58	30.91	65.51
	2010-11	0.32	19.10	3.43	30.12	66.45
Small	2005-06	1.42	21.18	2.89	39.11	58
	2010-11	1.42	22.86	2.75	38.26	58.99
Semi medium	2005-06	2.78	28.02	2.52	43.55	53.93
	2010-11	2.77	29.18	2.35	43.01	54.64
Medium	2005-06	5.67	24.28	1.72	46.5	51.78
	2010-11	5.61	23.80	1.73	47.39	50.88
Large	2005-06	20.76	9.10	0.73	41.27	58
	2010-11	15.23	5.06	0.61	42.05	57.34
Total	2005-06	1.19	100	2.43	40.91	56.66
	2010-11	1.19	100	2.41	40.46	57.13

(Source: Agriculture census2005-06 & 2010-11)

Out of total operational holding (in hectares) 2.43% belongs to SC, 40.91% belongs to ST and remaining 56.66% belongs to other categories Marginal and small holders are increased and medium and large land holders are decreased in 2010-11.

Out of the total marginal land 3.43% belongs to SC and 30.12% belongs to ST and remaining 66.45% belongs to other category. Out of the total small land 2.75% belongs to SC and 38.26% belongs to SC and remaining 58.99% belongs to other category.

Out of the total medium land 2.35% belongs to SC and 43.01% belongs to SC and remaining 54.64% belongs to other category. Out of the total semi medium 1.73% belongs to SC and 47.39% belongs to SC and remaining 50.88% belongs to other category.

Out of the total large land 0.61% belongs to SC and 42.05% belongs to SC and remaining 57.34% belongs to other category. There is no major change in land holding pattern of land holders in Navsari as per the data except large land holding pattern.

4.5 FRUITS AND PRODUCTIVITY

Agricultural productivity refers to the output produced by a given level of inputs in the agricultural sector of a given economy (Fulginiti and Perrin 1998). More formally, it can be defined as "the ratio of the value of total farm outputs to the value of total inputs used in farm production" (Olayide and Heady 1982).[5]

Horticulture has emerged as one of the prospective agricultural endeavor in accelerating the growth of economy. Horticulture encompasses of fruits, vegetables, spices and flowers. Its role in the country's nutritional security, poverty alleviation and employment generation programmes are becoming increasingly important. It offers not only a wide range of options to the farmers for crop diversification, but also provides ample scope for sustaining large number of Agro-industries which generate huge employment opportunities.

Fruits commonly known as goldmine of vitamins, minerals and fiber are ideal to consume at least 4-5 servings in a day. Since they are in the natural form, account for largest part of water and 100 percent bad cholesterol free, it's much easier for the body to process and absorb the vitamins and minerals from the fresh fruit. Hence fruit crops are one of the main agriculture sectors under horticulture for Gujarat State.

The main fruits of Navsari are mango, chikku, banana, papaya, coconut. The production of mango and chikku are continuously increased every year.

There are total 6 processing units in the district and yearly production is app. 56010 quintal of Pickles Mango-Pulp, Mango's Slices, Mango's Murabba, Jam, and Tomato Ketchup.[6] The area and production of bananas increased in the district with the yield 62 in 2013-14. The area, production and yield of the fruits are shown in Table 4.4.

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[5]Lenis Saweda Liverpool-Tasie, O. K. (2011). A review of literature on food security, social capital and. *International food policy research institute.* Nigeria.

[6]Shri Rakesh. R. Pandya, S. B. (n.d.). *Gujarat horticluture*. Retrieved march 3, 2015, from A goct of gujarat wemsite: http://gujecostat.gujarat.gov.in/wp-content/uploads/Irrigation/Horticulture_2010_11.pdf

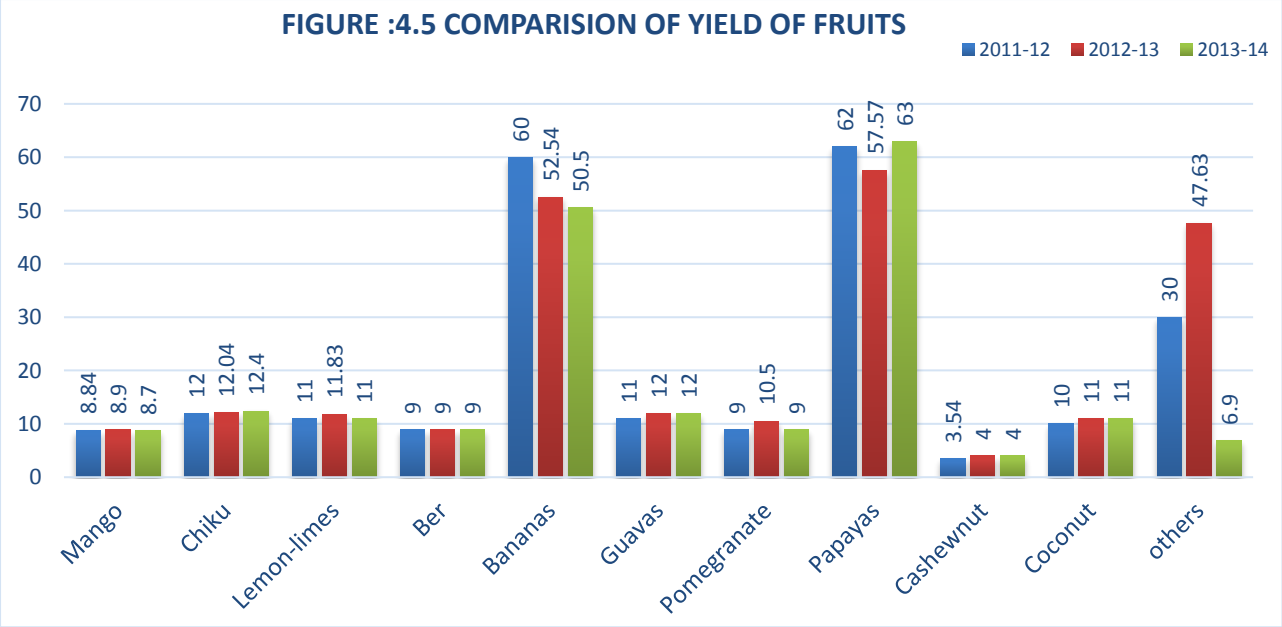
TABLE 4.4 DISTRICT'S AREA, PRODUCTION AND YIELD OF FRUITS (AREA IN HA., PROD. IN M.T., YIELD IN M.T /HA)

Year	2011-12			2012-13			2013-14		
Name of Fruit	Area	Prod.	Yield.	Area	Prod.	Yield.	Area	Prod.	Yield
Mango	22800	201600	8.84	23940	213066	8.9	24188	210436	8.70
Chiku	6200	74400	12	6324	76140	12.04	6384	76863	12.4
Lemon-limes	6	66	11	6	71	11.83	6	66	11
Ber	3	27	9	4	36	9	4	36	9
Bananas	1250	75000	60	2300	120850	52.54	2300	116150	50.50
Guavas	2	22	11	2	24	12	2	24	12
Pomegranate	2	18	9	2	21	10.50	2	18	9
Papayas	260	16120	62	280	16120	57.57	273	17199	63
Cashewnut	260	920	3.54	270	1080	4	270	1080	4
Coconut	450	4500	10	460	5060	11	460	5060	11
others	109	3255	30	116	5525	47.63	116	800	6.90
Total	31340	375910	11.99	33704	437993	13.00	34005	427732	12.5

(Source: Department of Agriculture, Gandhinagar)

In 2013-14 the total cultivated area of the fruit is increased by 8.5 % and the production of the Fruit is increased by 13.78% and increase in the yield by 4.93 %as compared to 2011-12.

The cultivated area of Banana is increased by 84 % and the production of banana is increased by 54.86% as compared to 2011-12. The cultivated area of mango is increased by 8.72% and the production of mango is increased by 2.34% as compared to 2011-12.



(Source: Department of Agriculture, Gandhinagar)

In 2013-14 the yield of chiku, Guavas, Papayas, cashew nut and coconut has increased and yield of Mango bananas has decreased as compared to 2011-12. The production of mango, chiku, ber, banana, papaya, cashew nut and coconut has also increased as compared to 2011-12.

Rashtriya Krishi Vikas Yojana is the key to support state and district action plans funded by Ministry of Agriculture, Government of India. A various project were implemented under the aegis of Navsari Agricultural University in Navsari district. The project is aimed to create awareness among the farming community.

Box No: 4.1

ORGANIC FARMING

Chikku is the one of the most important horticulture crop in Gandevi, Jalalpore& Navsari Taluka of Navsari District. Navsari district cover more than 4000 ha. Area under chikku in that more than 60%farmers comprise small & marginal. Since 4-5 years farmers are in difficulty to cultivate the crop. Indiscriminate use of pesticide, fertilizer and chemical spray push them in debt. RKVY project is implemented during the year 2012-13. Out of three taluka 58 villages of Navsari district were selected and technologies have been successfully demonstrated. The selected area comprises of 2740 beneficiaries. In this project inputs were supplied, azaderectin, bio pesticides beaureriabassiana and bio fertilizer mycorrhiza to the farmers. Using these technologies farmers got yield 159 kg/plant. Earlier they were harvesting up to 135 kg/plant Yield. 17% yield was increased per hectare. Thus an implementation of this project in over 548 hectares of sapota could have benefited to the tune of about 189.06 lakhs.[7]

[7] *krishi vigyan kendra navsari*. (n.d.). Retrieved march 3, 2015, from indian agriculture research institute website: http://kvknavsari.in/success-stories.html

Box No: 4.2

INTEGRATED WATERSHED MANAGEMENT USING TISSUE CULTURE

Kandha Project is located in Vansda Block, Navsari district of Gujarat State which has been sanctioned in the year of 2010-11 by Government of India. The project is a cluster of six micro-watersheds. The total project area of the watershed is about 6725.40 ha, of which 4000 ha has been undertaken to be treated under Integrated Watershed Management Programme (IWMP). The watershed Programme has covered seven villages namely Kandha, Bartad, Bedmal, Kamalzari, Anklachh, Khanpur and Satimal. Tribal communities are the primary inhabitants of the village.

Devjeebhai Jhuliabhai Deshmukh who is the beneficiary of Banana Demo Plot belongs to Bedmaal Village (Dungri Faliya). Earlier he was dependent on growing traditional crops like Paddy, Nagli, Pulses, Pigeon Pea using traditional methods. He also used to grow the traditional variety of Banana (Lokhandi variety) from which he was getting an income of Rs.30, 000 to Rs.40, 000 per annum.

By using Integrated watershed management programme and using tissue culture technology, the production of banana is increased nearly 2mt per acre and there is increase in revenue by 20000 to 25000 per acre. According to him growing bananas through tissue culture method had allowed efficient use of land and resources, realizing higher yield and net profit, easy practices, improvement in fruit quality, easy and good harvest which have ultimately lead to an increase in income[8]".

[8]GSWM. (2014, february 27). *neerchetna*. Retrieved march 3, 2015, from http://neerchetna.blogspot.in/2014/02/promoting-tissue-culture-in-navsari.html

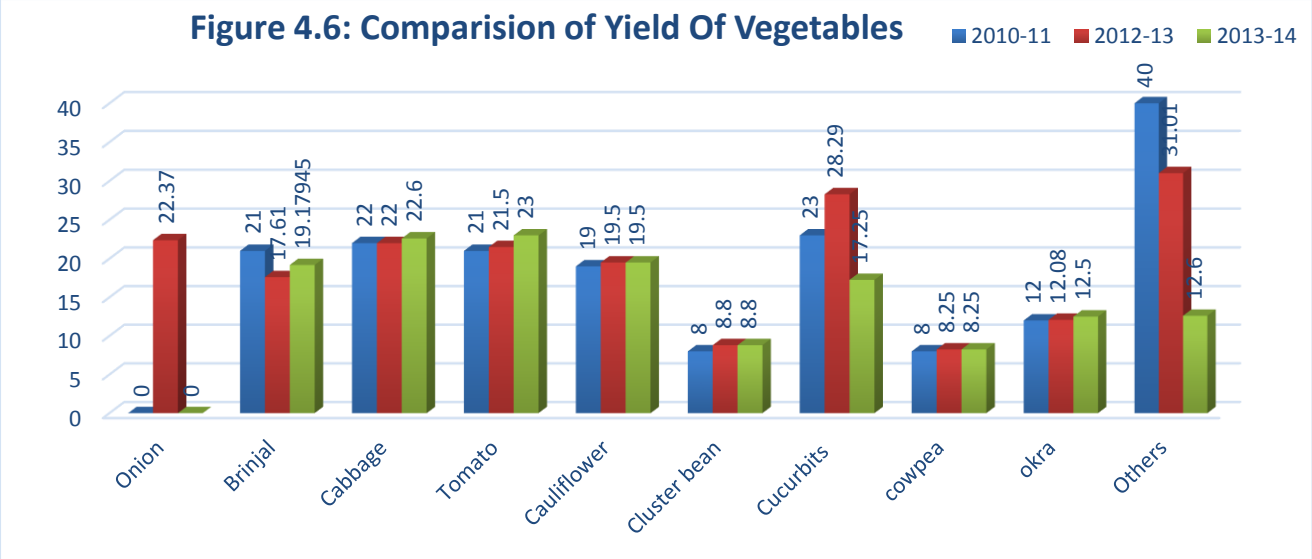
4.6 VEGETABLES AND PRODUCTIVITY

The yield-of vegetable crop is about 5 to10 times more than of cereals. They are quick growing and shorter duration. As literacy increase in our country people realize the nutritional importance of vegetable in daily diet which results in increasing demand for vegetable. Due to construction of new irrigation projects, lifting irrigation scheme & community well, irrigation facilities, cold storage facilities are increasing which help to increase area and production of vegetable. The major vegetable grown in the district are French bean, cabbage, ladyfinger, Cucurbits and cluster bin. The Area, Production and Yield of the Vegetables are shown in the Table 4.5.

TABLE 4.5 DISTRICT'S AREA, PRODUCTION AND YIELD OF VEGETABLES (AREA IN HA., PROD. IN M.T, YIELD IN M.T /HA)

Year	2011-12			2012-13			2013-14		
Name of Vegetable	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
Onion	0	0	0	305	6824	22.37	0	0	0
Brinjal	2065	43365	21	2477	43617	17.61	2307	44247	19.18
Cabbage	110	2420	22	115	2530	22.00	162	3661	22.60
Tomato	940	19740	21	960	20640	21.50	1050	24150	23.00
Cauliflower	110	2090	19	115	2243	19.50	115	2243	19.50
Cluster bean	680	5440	8	690	6072	8.80	690	6072	8.80
Cucurbits	5750	132250	23	5480	155048	28.29	6350	109538	17.25
cowpea	770	6160	8	783	6459	8.25	783	6459	8.25
okra	4700	56400	12	5143	62140	12.08	4743	59287	12.50
Others	447	17992	40	1282	39750	31.01	1258	15851	12.60
Total	15572	285857	174	17350	345323	191.42	17458	271508	143.68

(Source: Department of Agriculture, Gandhinagar)



(Source: Source: Department of Agriculture, Gandhinagar)

In 2013-14, the total cultivated area of the vegetable is increased by 12.11 % but the production of the vegetables is decreased by 5.02% and decrease in the yield by 17.43% as compared to 2011-12.

The cultivated area of cabbage is increased by 47.27% and the production of cabbage is increased by 51.28% as compared to 2011-12. The cultivated area of Brinjal is increased by 11.72% and the production of Brinjal is increased by 2.04% as compared to 2011-12. The cultivated area of tomato is increased from 940acres to 1050 acres and the production is increased from 19740 MT to 24150 MT as compared to 2011-12. So the production of tomato is increased by 22.34% in 2013-14 as compared to 2010-11.

In tribal belt, increasing population, fragmented land holding, limited irrigation facility and lack of knowledge regarding scientific cultivation of agriculture make it difficult to sustain agriculture. Among the production factors, fertilizer is the expensive input but continuous disproportion and excess use of fertilizers deteriorates the soil health, discourage soil arthropods, declining organic matter and degrades the quality of produce.

Farmers are sprawling their productivity and quality of the vegetable crops due to indiscriminate use of chemical fertilizers and less use of organic matter. The integrated nutrient management (INM) maintains soil fertility for sustaining increase in crop productivity through optimizing all possible sources, such as organic and inorganic

nutrients of plant. More implementation of INM can increase the productivity and quality of vegetables.

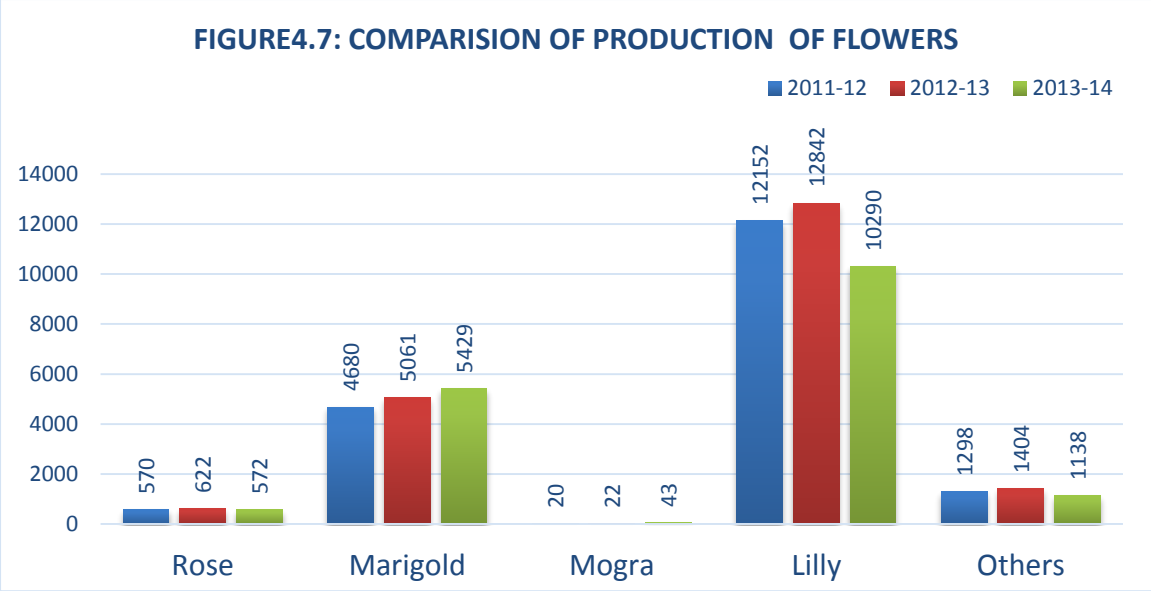
4.7 FLOWERS AND PRODUCTIVITY

The climate of Navsari district is well suited for floriculture activities. The Gujarat Government has covered floriculture activities under Jyotigram Yojana as a result of which 24- hour power supply is available. There are many floriculture projects coming up in the district which boost the economy of the district and increase the exports of flowers which have a growing demand. The district has well developed floriculture and horticulture activities owing to its suitable climate and presence of a major player like Roses Biotech Companies and several other greenhouse projects. There are few export oriented greenhouse projects in the district and one of them namely Best Roses Biotech Pvt Ltd. is the largest export-oriented floriculture project in the State exporting roses to various countries such as, Japan, Germany and UK, etc.

TABLE 4.6 DISTRICT'S AREA, PRODUCTION AND YIELD OF FLOWERS (AREA IN HA., PROD. IN M.T., YIELD IN M.T /HA)

Year	2011-12			2012-13			2013-14		
Name of flower	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
Rose	60	570	9.50	62	622	10.03	65	572	8.80
Marigold	520	4680	9.00	541	5061	9.35	554	5429	9.80
Mogra	5	20	4.00	5	22	4.40	5	43	8.50
Lilly	980	12152	12.40	1029	12842	12.48	1029	10290	10.00
Others	110	1298	11.80	114	1404	12.32	130	1138	8.75
Total	1675	18720	11.18	1751	19951	11.39	1783	17471	9.80

(Source: Department of Horticulture, Gandhinagar)



(Source: Department of Horticulture, Gandhinagar)

Box No: 4.3

GREEN HOUSE FOR ORCHID FLOWERS FIRST TIME IN GUJARAT BY SCHEDULE CAST FARMER	
Name of Farmer	**Ashokbhai Raisingh Patel**
Address	Navtad , Taluka : Vansda, District: Navsari
Method	Greenhouse
Name Of Crop	Orchid
No. of Plant	10000
Production	5000 sticks in a month
Price of 1 stick	Rs.8 to Rs.10
Appro. Annual income	Rs.500000
Duration of crop	10 Years
Expenses of Material	Rs.600000 per 1000 square meter
Subsidy by horticulture department	Rs.4500000

4.8 FOOD CROPS AND PRODUCTIVITY

Crop production will become more difficult with climate change, resource scarcity (e.g. land, water, energy, and nutrients) and environmental degradation (e.g. declining soil quality and surface water eutrophication). To pursue the fastest and most practical route to improved yield, the near-term strategy is application and extension of existing agricultural technologies.[9] Agricultural productivity is measured as the ratio of agricultural outputs to agricultural inputs so it is called efficiency of farm. The productivity of a region's farms is important for food sufficiency, growth prospects, income distribution, etc. An increase in a region's agricultural productivity implies a more efficient utilization of scarce resources, which leads to higher incomes from low cost. As farms become more prolific, the wages earned by workers in agriculture also increases and at the same time, food supplies become more stable. The major crops produced in the district are as shown in table 4.6.

TABLE 4.7 DISTRICT'S AREA, PRODUCTION AND YIELD OF FOOD CROPS (AREA IN '000HA., PROD. IN '000 TONNES, YIELD IN K.G.S/HA)

Year	State/ District	Rice			Jowar			Wheat		
		Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod	Yield
2009-10	Gujarat	658.5	1228.4	1865	111.8	118.4	1059	878	2351	2678
	District	59.9	149	2487	0.7	0.7	994	0.7	1.8	2571
2010-11	Gujarat	728.3	1423.8	1955	76.4	80.7	1056	1186	3319	2799
	District	62.6	161.3	2577	1	1.1	1070	0.6	1.9	3167
2011-12	Gujarat	751.3	1521.8	2026	68.2	80.4	1177	1350.6	4072	3015
	District	52.2	133.9	2565	0.7	0.7	994	0.3	1	3333
2012-13	Gujarat	672	1408.1	2095	49.5	76	1535	1023.5	2944	2876
	District	51.3	128.2	2499	1.4	2	1466	0.5	1.4	2800

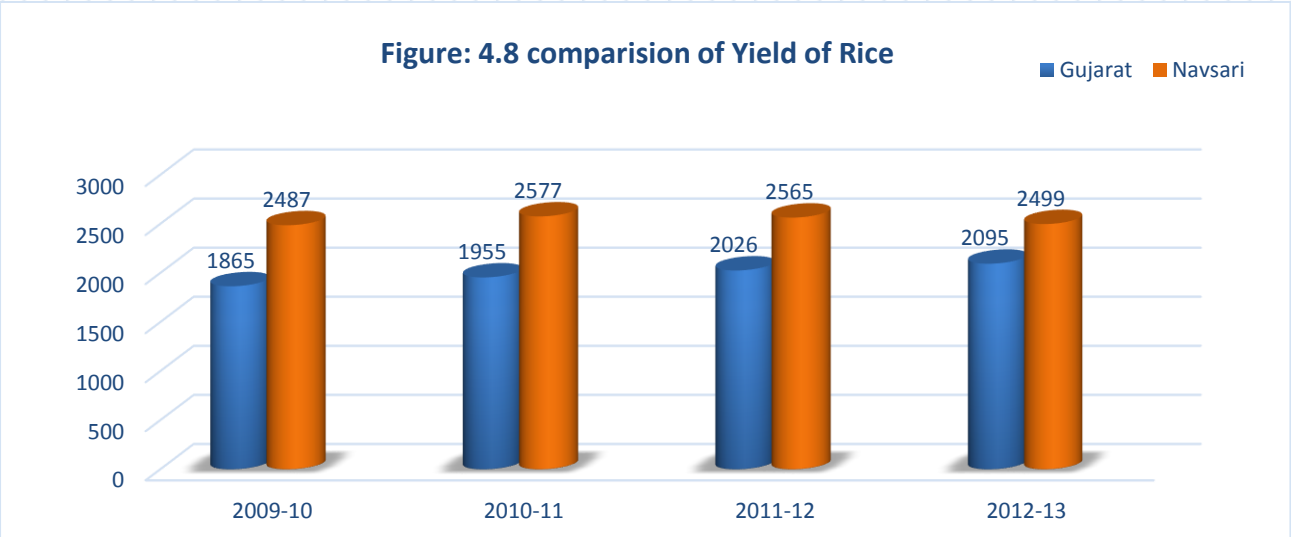
(Source: Department of Agriculture, Gandhinagar)

In 2012-13 the rice production area of Gujarat has increased by 2% and rice has increased by 14.63% whereas in Navsari rice production area has decreased by 14.36% and rice production has decreased by 13.96% as compared to 2009-10.

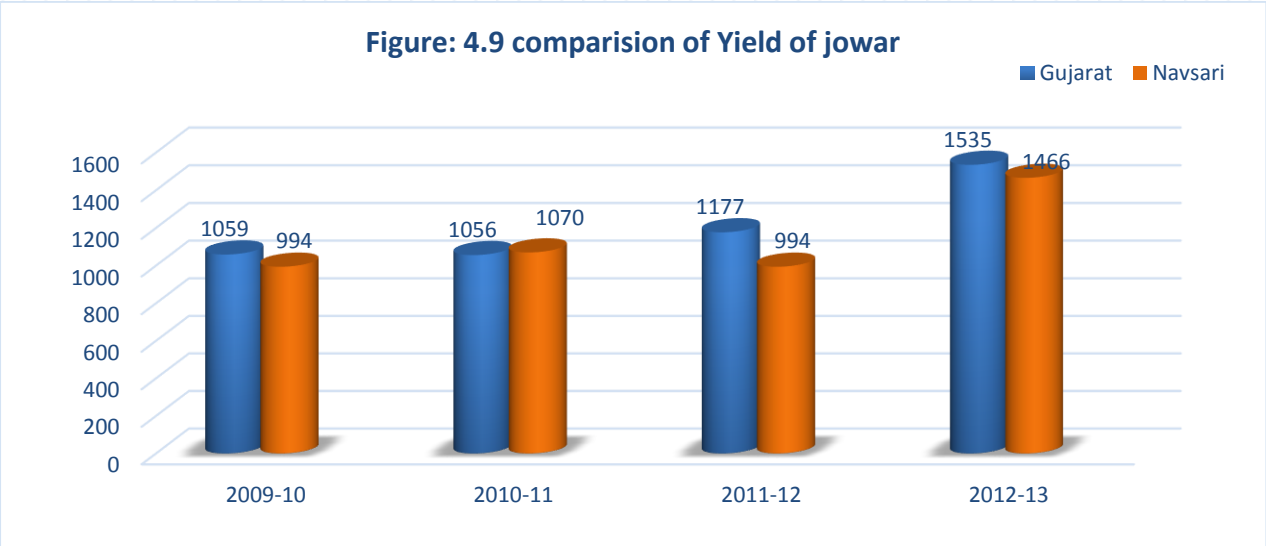
[9]mingsheng fan, j. s. (2011, December 22). *journal of experimental botany*. Retrieved March 4, 2015, from oxford website: http://jxb.oxfordjournals.org/content/early/2011/09/30/jxb.err248.full

In 2012-13 the Jowar production area of Gujarat has decreased by 55% and Jowar production has decreased by 55%, whereas in Navsari Jowar production area has increase by 100% and jowar production has increased by 185.71% as compared to 2009-10.

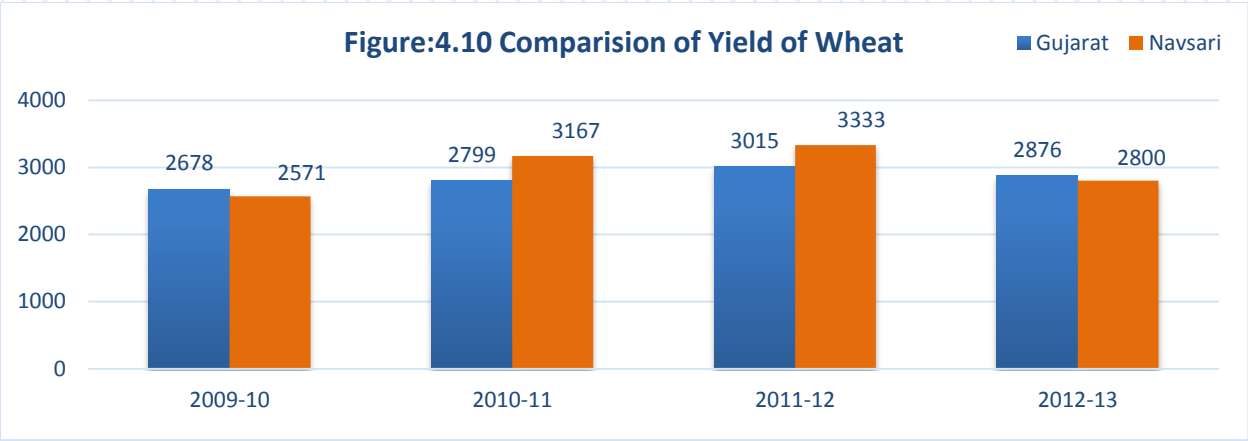
In 2012-13 the wheat production area of Gujarat has increased by 16.58% and wheat production has increased by 25.23% whereas in Navsari wheat production area has decreased by 28.57% and wheat production has decreased by 22.22% as compared to 2009-10. The comparison of Yield of various crops of Gujarat and Navsari are shown in figure below.



(Source: Department of Agriculture, Gandhinagar)

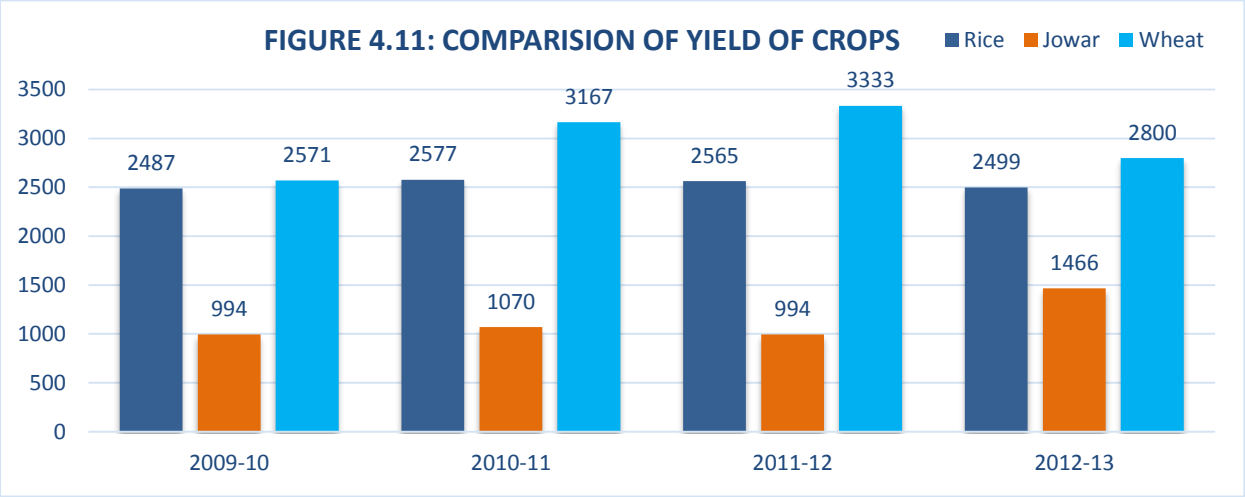


(Source: Department of Agriculture, Gandhinagar)



(Source: Department of Agriculture, Gandhinagar)

From 2009 to 2013 the yield of rice in Navsari is more as compared to Gujarat. In jowar except in 2010-11, the Yield of Gujarat is more as compared to Navsari. In 2010-11 and 2011-12, the Yield of wheat of Navsari is more as compared to Gujarat.



(Source: Department of Agriculture, Gandhinagar)

4.9 IRRIGATED AREA

Increase in agricultural production and productivity depends, to a large extent, on the availability of water. Sometimes the monsoon delayed considerably while sometimes they cease prematurely. This pushes large areas of the country into drought conditions. With the help of irrigation, droughts and famines can be effectively controlled.

Irrigation help in stabilizing the output and yield levels. It also plays a protective role during drought years. Since, both income and employment are positively and closely related to output, prevention of fall in output during drought is an important instrument

for achieving stability of income and employment in the countryside. Irrigation has enabled many states to acquire 'partial immunity' from drought. Taluka wise share of irrigated area of Navsari is shown in table 4.8.

TABLE 4.8 DISTRICT'S IRRIGATED AREA

Talukas	Net Cropped Area	Net Irrigated Area	Irrigated area (%)
Navsari	20843	22984	100%
Jalalpore	23427	16177	69.78
Gandevi	13247	20161	78.56
Chikhli	47898	31043	74.7
Vansda	30730	10704	35.46
Total	136145	90365	64.61

(Source: District statistical outline: 2011-12)

Navsari taluka has highest share of irrigated area where as Vansda taluka has lowest share of irrigated area. State Govt. is taking up maximum work to deepening of tanks, construction of Khet talavadi, check dam, bori bundh etc. for underground water recharge.

As per the Water Resources Department Gujarat in 2014 there are 2063 check dam, 2122 bori bandh, 243 pounds and 6463 khet talavadi in Navsari. Various villages of Vansda and Chikhli is covered to provide irrigation facility by government of Gujarat under Vanbandhu Kalyaan Yojna.

4.10 WORK PARTICIPATION RATE (WPR)

The Work Participation Rate (WPR), which is defined as the percentage of total workers to the total population.[10] The workforce participation rates vary according to the stages of economic development, across cultures, age groups, and between sexes. Indian economy has been predominantly agricultural which contributes about one third to the total economy and employs more than half of the workforce.

The agriculture is understandably not able to absorb a significant number of additional workers. However, with modernization, urbanization and industrial development picking up, there is likely to be a shift in the occupational structure of the Indian workforce.[11]The work participation rate of Gujarat and Navsari is shown in table 4.9 (I).

TABLE 4.9(I) TALUKA WISE WORK PARTICIPATION RATE 2001 & 2011

State/ District/ Taluka	T/R/U	Work Participation Rate					
		2001			2011		
		Person	Male	Female	Person	Male	Female
Gujarat	Total	41.9	54.9	27.9	41	57.2	23.4
	Rural	47.2	55.5	38.5	44.9	57.1	32
	Urban	33.1	53.9	9.4	35.7	57.2	11.4
Navsari	Total	40.8	57	23.5	42.1	59.7	23.6
	Rural	48.3	59.3	36.8	49.1	62.1	35.5
	Urban	35.6	55.4	14.1	38.3	58.3	16.9
Jalalpore	Total	36.2	53.5	17.5	40	59.1	19
	Rural	37.1	52.5	21.2	41.5	58.8	23.4
	Urban	34.5	52.5	10.8	37.8	59.4	12.1
Gandevi	Total	39.6	55.2	23.3	41.3	59.3	22.8
	Rural	42	55.9	27.5	44	60.5	27.1
	Urban	35.5	54	15.9	36.9	57.3	15.4
Chikhli	Total	50.6	58	42.9	46.7	61.9	31.2
	Rural	51	58.1	43.6	47	62	31.6
	Urban	34.8	53.8	14.9	37.5	59.4	14.9
Vansda	Total	54.7	58.8	50.5	52.6	60.4	44.8
	Rural	54.7	58.8	50.5	53.6	60.9	46.3
	Urban	0	0	0	37.8	53.7	21.4

[10]*census india*. (n.d.). Retrieved march 9, 2015, from Govt. of india website: http://censusindia.gov.in/Data_Products/Library/Post_Enumeration_link/eci6_page3.html

[11]R.B.Bhagat, K. (n.d.). *iips*. Retrieved march 9, 2015, from Internatioal institute of population science: http://www.iipsindia.org/pdf/b01cBhagat%20sir's%20report.pdf

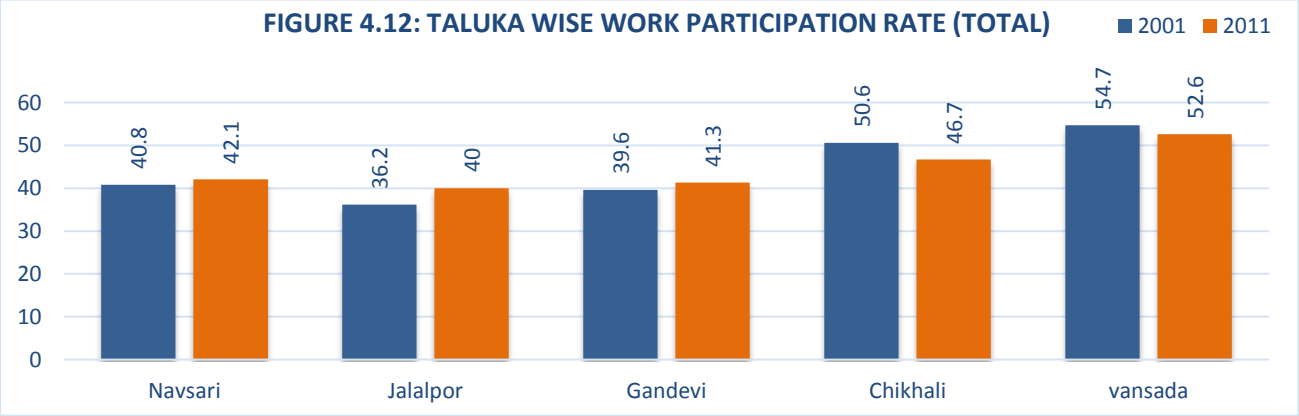
District total	Total	44.3	56.5	31.6	44.5	60.1	28.2
	Rural	47.8	57.1	38.1	47.5	61	33.6
	Urban	35.3	54.9	13.8	37.9	58.2	15.7

(Source: Registrar General of India)

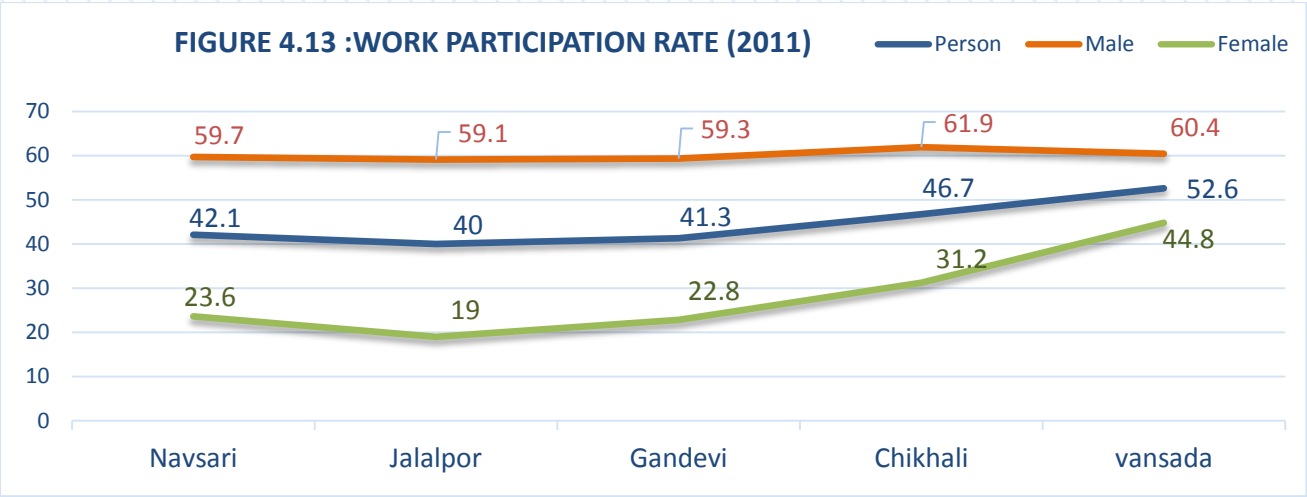
The work participation rate of Gujarat is 41% in 2011 which was 41.9% in 2001. The rural work participation rate is decreased by 4.27% whereas the urban participation rate is increased by 7.85% as compared to 2001. The male participation rate is increased in rural and urban area by 2.83% and 6.12% respectively and the women participation rate is decreased in the rural area by 16.88% whereas urban women participation rate is increased by 21.27% in 2011 as compared to 2001.

The work participation rate of Navsari is 44.5% in 2011 which was 44.3% in 2001. The rural work participation rate is decreased by 0.6% whereas the urban participation rate is increased by 7.37% as compared to 2001. The male participation rate is increased in rural and urban area by 6.37% and 6.01% respectively and the women participation rate is decreased in the rural area by 10.76% increase in the urban area by 13.7% in 2011 as compared to 2001.

Vansda Taluka contributes the highest work participation (52.6%) while Jabalpur Share the lowest work participation (40%) in the Navsari District. The male participation rate of Chikhli is higher and female participation rate of Vansda is higher in the district as shown below.



(Source: Registrar General of India)



(Source: Registrar General of India)

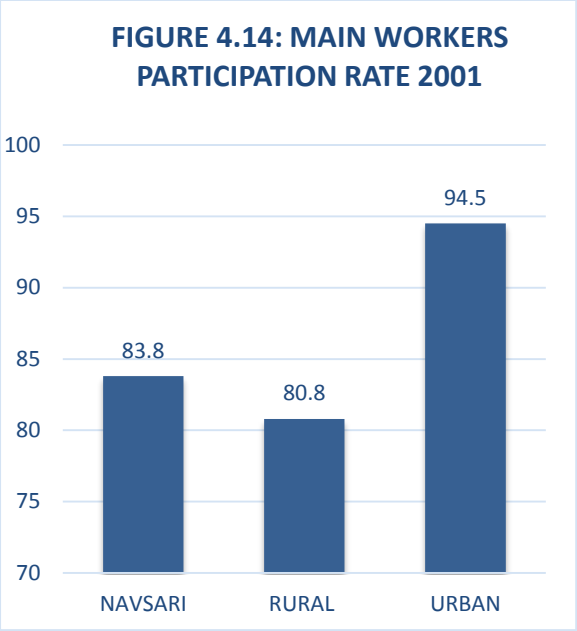
Out of the total workers in Gujarat 82.2% are main workers and 17.8% are marginal workers whereas in Navsari district 86.2% are main workers 13.8 % are marginal workers in 2011. Out of the total workers in Navsari 86.2% are main workers and 13.8 % are marginal workers in 2011.

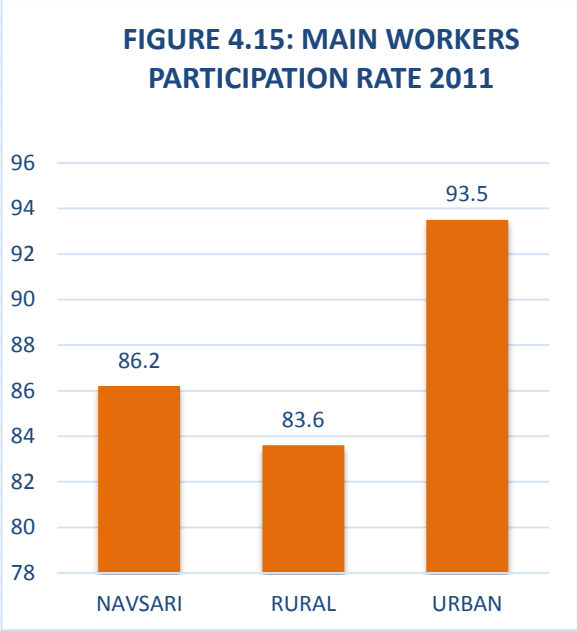
The main worker increased in Gujarat by 2.62% whereas in Navsari main workers increased by 2.87% in 2011 as compared to 2001.The marginal workers decreased in Gujarat by 10.55% whereas in Navasari marginal workers decreased by 14.5% in 2011 as compared to 2001 as shown in table 4.9 (II).

TABLE 4.9(II) TALUKA WISE MAIN WORKERS WORK PARTICIPATION RATE

State/ District/ Taluka	T/R/U	MAIN			MAIN		
		2001			2011		
		Person	Male	Female	Person	Male	Female
Gujarat	Total	80.1	93.1	52.3	82.2	92	56.1
	Rural	74.1	90.7	48.9	76.3	89.9	50.7
	Urban	94.4	97.1	76.8	92.3	94.9	77.5
District total	Total	83.8	94.1	64.5	86.2	92	73.2
	Rural	80.8	93.2	61.7	83.6	90.5	70.7
	Urban	94.5	96.6	85.4	93.5	95.5	85.5

(Source: Registrar General of India)



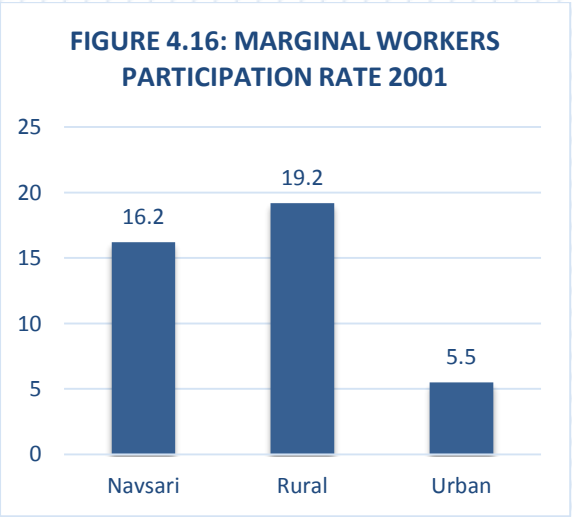


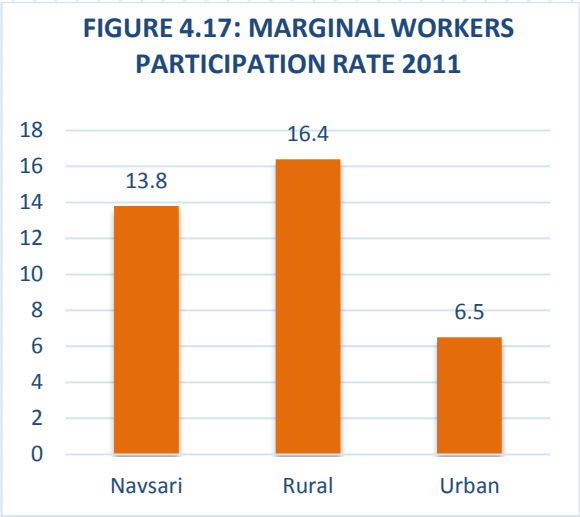
(Source: Registrar General of India)

TABLE 4.9 (III) TALUKA WISE MARGINAL WORKERS WORK PARTICIPATION RATE

State/ District/ Taluka	T/R/U	MARGINAL 2001			MARGINAL 2011		
		Person	Male	Female	Person	Male	Female
Gujarat	Total	19.9	6.9	47.7	17.8	8	43.9
	Rural	25.9	9.3	51.1	23.7	10.1	49.3
	Urban	5.6	2.9	23.2	7.7	5.1	22.5
District total	Total	16.2	5.9	35.5	13.8	8	26.8
	Rural	19.2	6.8	38.3	16.4	9.5	29.3
	Urban	5.5	3.4	14.6	6.5	4.5	14.5

(Source: Registrar General of India)





(Source: Registrar General of India)

4.11 MAIN AND MARGINAL WORKERS

Those workers who had worked for the major part of the reference period (i.e. 6 months or more) are termed as Main Workers. Those workers who had not worked for the major part of the reference period (i.e. less than 6 months) are termed as Marginal Workers. Non-workers were those who had not worked any time at all in the year preceding the date of enumeration.

Out of the total population i.e.1329672, 510004 (38.36%) are main workers, 81830(6.15%) are marginal workers and 737837(55.49%) are non-workers in Navsari.

Out of the total workers 86.17% are main workers and remaining 13.83% workers are marginal workers. Out of the total main workers 73.6% are male workers and 26.39 % are female workers.

Out of the total male 72% belongs to the rural area and 28% belongs to the urban area. Out of the total female 81% belongs to the rural area and 19% belongs to the urban area.

Out of the total workers 13.83% workers are marginal workers. Out of the total marginal workers 39.72 % are male workers and 60.28 % are female workers.

Out of the total male 82.85% belongs to the rural area and 17.16% belongs to the urban area. Out of the total female 90.97% belongs to the rural area and 9.02 % belongs to the urban area.

The total main workers are increased by 11.6% as compared to 2001 whereas total marginal workers are decreased by 7.24% as compared to 2001.

The male main workers are increased by 12.15% and the female main workers are increased by 10.08%. The male marginal workers are increased by 55.91% and the female marginal workers are decreased by 26.78% as shown below.

TABLE 4.10(I) MAIN AND MARGINAL WORKERS (IN TOTAL)

District	P/M/F	Main workers		marginal workers		Total workers	
		2001	2011	2001	2011	2001	2011
Navsari	Persons	457002	510004	88213	81830	545215	591834
	Male	334708	375375	20848	32506	355556	407881
	Female	122294	134629	67365	49324	189659	183953
Rural	Persons	344473	365102	81740	71802	426213	436904
	Male	241443	256694	17610	26931	259053	283625
	Female	103300	108408	64130	44871	167430	153279
Urban	Persons	112259	144902	6473	10028	118732	154930
	Male	93265	118681	3238	5575	96503	124256
	Female	18994	26221	3235	4453	22229	30674

(Source: Registrar General of India)

Out of the total workers, 86.17% are the main workers and remaining 13.83% are marginal workers. From the total male 92.03% are main workers and 7.97% are marginal workers. From the total female 73.19% are main workers and 26.81% are marginal workers in 2011.

TABLE 4.10(II) MAIN AND MARGINAL WORKERS TO TOTAL WORKERS (IN PERCENTAGE)

District	P/M/F	Main workers		Marginal workers	
		2001	2011	2001	2011
Navsari	Persons	83.82	86.17	16.18	13.83
	Male	94.14	92.03	5.86	7.97
	Female	64.48	73.19	35.52	26.81
Rural	Persons	80.82	83.57	19.18	16.43
	Male	93.20	90.50	6.80	9.50
	Female	61.70	70.73	38.30	29.27
Urban	Persons	94.55	93.53	5.45	6.47
	Male	96.64	95.51	3.36	4.49
	Female	85.45	85.48	14.55	14.52

(Source: Registrar General of India)

4.12 CULTIVATORS, AGRICULTURE LABOURERS AND OTHERS

For purposes of the census, a person is classified as cultivator if he or she is engaged in cultivation of land owned or held from Government or held from private persons or institutions for payment in money, kind or share. A person who has given out her/his land to another person or persons or institution(s) for cultivation for money, kind or share of crop and who does not even supervise or direct cultivation of land, is not treated as cultivator.

A person who works on another person's land for wages in money or kind or share is regarded as an agricultural labourer. She or he has no risk in the cultivation, but merely works on another person's land for wages. An agricultural labourer has no right of lease or contract on land on which she/he works.

Household Industry is defined as an industry conducted by one or more members of the household at home or within the village in rural areas and only within the precincts of the house where the household lives in urban areas.

A worker who have been engaged in some economic activity during the last one year, but are not cultivators or agricultural labourers or in Household Industry, are 'Other Workers. The type of workers that come under this category include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc.[12]

[12] *census data*. (n.d.). Retrieved march 4, 2015, from a governme of india websie: http://censusindia.gov.in/Metadata/Metada.htm#2k

TABLE 4.11(I) CULTIVATORS, AGRICULTURE LABOURERS AND OTHERS

District	P/M/F	Cultivators		Agri. Lab.		HH Inds.		Others	
		2001	2011	2001	2011	2001	2011	2001	2011
NAVSARI	Persons	128776	112809	180215	206608	9303	7173	226921	265244
	Male	76503	81350	88872	110480	5814	4502	184367	211549
	Female	52273	31459	91343	96128	3489	2671	42554	53695
Rural	Persons	127924	110753	175733	200349	6273	5257	116553	120545
	Male	75782	79685	86170	106596	4113	3447	92988	93897
	Female	52142	31068	89563	93753	2160	1810	23565	26648
Urban	Persons	825	2056	4482	6259	3030	1916	110368	144699
	Male	731	1665	2702	3884	1701	1055	91379	117652
	Female	131	391	1780	2375	1329	861	18989	27047

(Source: Registrar General of India)

Out of the total workers 19.06% are cultivators, 34.91% are agriculture Lab., 1.21% are in household industries and 44.82% are engaged in other activity.

The male cultivators are increased from 59.41% to 72.11% whereas female cultivators are decreased from 40.59% to 27.89%.

Out of the rural workers 25.35% are cultivators, 46.33% are agriculture Lab., 1.21% is associated with household Industries and remaining 27.6% are engaged in other activity while in the urban area 0.70% are cultivators, 3.77% are agriculture Lab., 2.55% is associated with household Industries and remaining 93.4% are engaged in other activity as shown in table 4.11(II).

TABLE 4.11(II) CULTIVATORS, AGRICULTURE LABOURERS AND OTHERS (GENDER CLASSIFICATION)

District	P/M/F	Cultivators		Agri. Lab.		HH Inds.		Others	
		2001	2011	2001	2011	2001	2011	2001	2011
NAVSARI	Persons	23.62	19.06	33.05	34.91	1.70	1.21	41.62	44.82
	Male	59.41	72.11	49.32	53.47	62.5	62.76	81.25	79.76
	Female	40.59	27.89	50.68	46.53	37.5	37.24	18.75	20.24
Rural	Persons	30	25.35	41.21	45.86	1.47	1.21	27.32	27.60
	Male	59.24	71.95	49.03	53.21	65.57	65.57	79.78	77.89
	Female	40.76	28.05	50.97	46.79	34.43	34.43	20.21	22.10
Urban	Persons	0.70	1.33	3.77	4.03	2.55	1.96	92.98	93.40
	Male	88.61	80.98	60.29	62.05	56.14	55.06	82.80	81.30
	Female	11.39	19.02	39.71	37.95	43.86	44.94	17.20	18.7

(Source: Registrar General of India)

TABLE 4.11(III) CULTIVATORS, AGRICULTURE LABOURERS AND OTHERS (IN TOTAL PERCENTAGE)

District	P/M/F	Cultivators		Agri. Lab.		HH Inds.		Others	
		2001	2011	2001	2011	2001	2011	2001	2011
NAVSARI	Persons	23.62	19.06	33.05	34.91	1.71	1.21	41.62	44.82
	Male	14.28	19.94	27.30	27.09	1.79	1.10	56.63	51.87
	Female	27.56	17.10	48.16	52.26	1.84	1.45	22.44	29.19
Rural	Persons	30.00	25.35	41.21	45.86	1.47	1.20	27.33	27.59
	Male	29.25	28.10	33.26	37.58	1.59	1.22	35.90	33.11
	Female	31.14	20.27	53.49	61.16	1.29	1.18	14.07	17.39
Urban	Persons	0.70	1.33	3.78	4.04	2.55	1.24	92.98	93.40
	Male	0.76	1.34	2.80	3.13	1.76	0.85	94.68	94.69
	Female	0.59	1.27	8.01	7.74	5.98	2.81	85.42	88.18

(Source: Registrar General of India)

Box No: 4.4

NUTRITIONAL BACKYARD KITCHEN GARDENING

Ashaben Sanjaybhai Patel from Village Dandi of Navsari district has a little Education knowledge but she was enthusiastic to do new things. Now she became a motivator for many Women in the village. She has an obvious habit of purchasing fresh vegetable from the market Keeping their nutritional value in the mind.

It was happened to visit her krishivigyan Kendra Navsari. Then she learnt many things and motivated towards the cultivation of kitchen garden in the backyards. She was chosen as one of the beneficiary and provided with low energy drip system, vegetable seed kits & fruit tree grafs. She sincerely attended the horticulture training Programme& attended the all the technical guidelines given by KVK scientists.

She adopted the technology and she got 600 kg vegetable produce. Out of which 450 Kg was sold in local markets to earn gross income to the tune of approximately 10,000 in a year. AshabenSanjaybhai Patel not only enhanced nutritional status of her family but also earned additional income from scale of surplus produce.

Box No: 4.5

HONEY PRODUCTION

Asmitaben, from Chikhli village of Navsari district, has attained a BA degree. She pursued further education and training in the subject of beekeeping and honey production from Navsari Krishi University and also from Punjab state. Beekeeping is said to be a difficult task that demand systematic approach and knowledge. But with her professional education and skills, Asmitaben turned an otherwise challenging task into a fruitful way to earn her livelihood.

Twelve years back, Asmitaben began honey producing activities out of interest and hobby. Today, with her hard work and visionary approach, she has built a set-up that produces honey worth Rs 8 lakh annually.[13]

4.13 LIVE STOCK

Animal husbandry is an integral component of Indian agriculture supporting livelihood of more than two-thirds of the rural population. Animals provide nutrient-rich food products, draught power, dung as organic manure and domestic fuel, hides & skin, and are a regular source of cash income for rural households.

They are a natural capital, which can be easily reproduced to act as a living bank with offspring as interest, and an insurance against income shocks of crop failure and natural calamities. More than 55% of the workforce is engaged in agriculture and allied activities in Navsari. More than 70% of the workforce of the rural area is engaged in agriculture and allied activities. This indicated that in rural areas majority of workforce is dependent for livelihood on primary sector.

The reasons for the decrease in cattle population in Navsari might be due to rapid urbanization, decrease in grazing land, decrease in supply of agricultural labour, no remunerative price for milk, decrease in indigenous population, etc.

[13](n.d.). Retrieved march 13, 2015, from http://anandibenpatel.com/turning-passion-into-profession/

Necessary steps such as reduction in rural-urban migration, focus on fodder cultivation, safeguarding common grazing land, provision of timely livestock health care services, creation of organized market facilities for livestock products, access to credit facilities, sensitization of entrepreneurs on latest livestock and poultry management practices, etc. might be implemented to improve the livestock population directly and indirectly in the Districts as well as the in the State. The taluka wise livestock census of the Navsari district is shown below.

TABLE 4.12(I) TALUKA WISE LIVESTOCK CENSUS (CATTLE AND BUFFALO)

Sr. No.	Taluka	Cattle			Buffalo		
		2003	2007	2012	2003	2007	2012
1	Navsari	11985	11490	14592	14268	10854	11020
2	Jalalpore	13536	11223	13162	20028	14933	19046
3	Gandevi	13785	14797	18506	13860	12758	12483
4	Chikhli	66235	62392	89847	41531	41278	42400
5	Vansda	56169	56417	96631	26923	22319	30083
District Total		164710	156319	232738	116610	102142	115032

(Source: Livestock census 2007&2012)

As compared to 2001, the population of cattle has decreased from 164710 to 156319, the population of Buffalo has decreased from 102142 to 115032, the population of sheep has decreased from 3010 to 1773 and the population of Goat has decreased from 87538 to 66644 in 2007.

As compared to 2007, the population of cattle has increased from156319 to 232738, the population of Buffalo has increased from 116610 to 102142, the population of sheep has increased from 1713 to 2089 and the population of Goat has increased from 66644 to 66644 to 84519in 2012 as shown below.

TABLE 4.12(II) TALUKA WISE LIVESTOCK CENSUS (SHEEP AND GOAT)

Sr. No.	Taluka	Sheep			Goat		
		2003	2007	2012	2003	2007	2012
1	Navsari	248	94	78	12724	11798	11583
2	Jalalpore	1175	817	1166	13214	8491	14491
3	Gandevi	532	611	253	12433	12587	14895
4	Chikhli	1022	233	556	29016	19929	24453
5	Vansda	33	18	36	20151	13839	19097
District Total		**3010**	**1773**	**2089**	**87538**	**66644**	**84519**

(Source: Livestock census 2007& 2012)

As compared to 2003, the population of cattle was decreased by 5%, the population of buffalo was decreased by 12%, and the population of sheep was decreased by 41% and the population of Goat was decreased by 24% in 2007. As compared to 2007, the population of cattle is increased by 49%, the population of buffalo is increased by 12.6 %, the population of sheep is increased by 17.8% and the population of Goat is increased by 26.8 % in 2012.

Owing to severe shortages of feed and fodder, livestock population suffers from problem of underfeeding. Ensuring an adequate supply of reasonable quality feed and fodder to livestock is one of the major challenges faced by the district. Because of comparatively very low net returns, farmers have least preference for growing fodder crops. Fodder markets in Gujarat being unorganized and unregulated; fodder production is a low priority enterprise in potential fodder production areas. Climate change poses formidable challenge to the development of livestock sector.[14]

[14]Michaelowa, S. S. (2007). Sufferer and cause: Indian livestock and climate change. *agricoop* , 285-298.

[15] mingsheng fan, j. s. (2011, December 22). *journal of experimental botany*. Retrieved March 4, 2015, from oxford website: http://jxb.oxfordjournals.org/content/early/2011/09/30/jxb.err248.full

TABLE 4.12(III) TOTAL LIVESTOCK AND TOTAL POULTRY

Sr. No.	Taluka	Total Livestock			Total Poultry		
		2003	2007	2012	2003	2007	2012
1	Navsari	47174	34381	37304	32978	90253	65961
2	Jalalpore	52955	36244	47959	181910	61698	230331
3	Gandevi	44098	41118	46209	172744	157012	297909
4	Chikhli	138242	123908	157308	123267	243347	222485
5	Vansda	107267	92639	146279	47434	58184	57488
District Total		**389736**	**328290**	**435059**	**558333**	**610494**	**874174**

(Source: Livestock census 2007&2012)

In 2003, Chikhli had the highest livestock and Gandevi had the lowest livestock in the district. In 2007, Chikhli had the highest livestock and Navsari had the lowest livestock in the district. In 2003, Jalalpore had the highest poultry and Navsari had the lowest poultry in the district. In 2007, Chikhli had the highest poultry and Vansda had the lowest poultry in the district.

In 2012, Chikhli has the highest livestock and Navsari has the lowest livestock in the district whereas Chikhli has the highest poultry and Vansda has the lowest poultry in the district.

4.14 SCHEMES AND PROGRAMMES FOR AGRICULTURE AND ANIMAL HUSBANDRY

Scheme /Programs	Brief Details of Schemes / Programs
Tribal Development Program	With the objective of improvement in facilities for storage of raw fruits & vegetables and other value added agri. produce established, avoid exploitation and get earning at the time of market hike established COLD STORAGE, with the help of Department Of Tribal Development & Tribal Area Sub-Plan, Government of Gujarat. (Bartad Village of Navsari District Cold-Storage of 100 Metric Tons Capacity)[15]
Kitchen Gardening	Krishi vigyan Kendra, Navsari conducted 150 demonstration for kitchen garden to popularize kitchen garden. Farmers grown sixteen different type of vegetables in their back yard and farm families used those fresh vegetables for daily diet and after consumption surplus vegetables were sold out in the market. Overall 51% yield was increase over traditional method of planting.
National Agricultural Innovation Project (NAIP) [16](A value chain on mango and guava for domestic and export markets)	Out of 364 centers all over the India, Navsari is selected for four sub project. By this, the yield of mango is increased by 30.75% and Yield of Guava by 205% with Improvement of Fruit Quality.
ATMA(Agriculture Technology Management Agency)	To motivate Farmers to form FIGs/CIGs/FOs to initiate Business Orientation in Farming accelerating decentralized decision making.
Soil Health Card	The cards are distributed under the Soil Health Programme of the Agriculture Department. They are prepared after the soil is scientifically tested for various properties like productivity, mineral composition, water retaining capacity and others.

[15](n.d.). Retrieved March 13, 2015, from http://passthrough.fwnotify.net/download/185286/http://www.griserv.com/tribal.pdf

[16](n.d.). Retrieved march 17, 2015, from http://www.naip.icar.org.in/documents/10184/70807/A+Value+Chain+on+Mango+and+Guava+for+Domestic+and+Export+Market.pdf/9bb00564-5b64-4830-99c5-19b0414c172

Gram MitraYojna	The main intention of the scheme is to ensure that citizens living in villages of the State may avail information of various development schemes and efficient, educated and enthusiastic youths may join constructively in the development of the village community inspired by the State govt. in area of health, education, development and human welfare.
Livestock Insurance Scheme	To Safe Guard assured protection to the animals of the farmer against eventual losses. One time insurance subsidy for an animal up to maximum periods of three years. During 2011-12, 390 animal insured in Navsari.
Breed Improvement Project in Tribal Area	To increase breed able livestock coverage and to increase the productivity.

(Source: Gujarat Agriculture Department and Livestock Department)

4.15 UJAAS MAHILA KHEDUT VIKAS SANG

It is the only Institution of Women Farmers in the district. It focuses for the tribal development with a special focus to women farmers as well as their children. The Institution has got an identity in Navsari district. It has its own identity at Block level and due to its presence the government departments are supporting the local tribal community. It was established in 2008 and work started at Chikhli and Vansda talukas of Navsari.

Ujaas is having membership of 563 women farmers. Its geographical presence is in 35 villages of Chikhli and Vansda block of Navsari district. It started working in 10 villages but now it has expanded to 35 villages. The executive committee of Ujaas consists of 15 members who are the leaders and representatives of different villages. On every 22nd of the month, there is a federation meeting when the leaders meet and do the monthly review and planning.[17]

Achievements of Ujaas Mahila Khedut Vikas Sangh:

- 500 women farmers have been identified.
- They have been organized into a Institution called Ujas Mahila Khedut

[17] *pirengo organisation*. (n.d.). Retrieved march 13, 2015, from cohesion foundation: http://cohesionfoundation.pirengo.org/wp-content/uploads/2014/09/Final-CASE-Ujaas.pdf

Institution, which is present in all 10 villages.

- 4 Leadership development trainings have been organized with the women covering gender aspects and addressing the questions through their own Capacity, 6 Trainings organized with KVK on Sustainable Agriculture attended by 250 women Focus on bio fertilizer and local seeds in the context of changing climate, 23 women started vermi- compost manufacturing for use in their own field and selling the surplus to other women farmers.
- Collective of women have met TDO to demand common land available in the villages for collective farming and there are positive signs getting the land.
- Under "Mission Mangalm", 34 Kotwaliya women doing bamboo based work have been connected with the state. They would get loans and subsidies for procuring bamboo. - Networking and Liaisoning with state is being effectively done.
- 3 shops allotted to women in Pani Khadak for selling out their products. Para legal Training to women for initiating land ownership processes.
- Women in 4 villages demanded field development work under NREGS and exposed the corruption being done by Sarpanch /Patwari by holding the cards of women. 388 women got their cards back - 3 trainings on Kitchen gardening organized for women – 124 women farmers attended the training.

4.16 KRISHI VIGYAN KENDRA NAVSARI

Krishi Vigyan Kendra is an institutional project of the Indian Council of Agricultural Research (ICAR) to demonstrate technology generation, technology assessment and refinement and dissemination in the field of agriculture and allied sectors. The KVK has been charged now to take up the responsibilities of technology evaluation and impact assessment, demonstration of technology on the farmer's field and update of the knowledge and skill for the farmers.

(Source: KisanVikas Kendra, Navsari)

The villages adopted by KVK are Vedchha, Pratapore, Nadod, Karod, Ancheli, Kotha, Mogravadi, and Jamanpada of the district. In addition, KVK organized Kisan Mela, Kisan Gosthi, Exhibition, mahila shibir, scientist visit to the farmer field and various agricultural development programs for farmers.

KVK Navsari has been selected for 'Krishi Vigyan Kendra Samman' Runner-up Award by Mahindra Samriddhi India Agri. Award 2014.[18]

Technology week has been celebrated by KVK navsari during 03/02/2014 to 08/02/2014. Seminars and demonstrations on advanced technologies in agriculture and allied discipline such as Animal science, Fisheries and Home science have been

[18] *Krishi Vigyan kendra*. (n.d.). Retrieved march 17, 2015, from http://kvknavsari.in/

conducted during the week. Total 513 participants including 323 farmers and 190 farm-Women from about 25 villages of Navsari district were benefitted.

Box No:4.6

IMPROVEMENT IN THE SOCIO-ECONOMIC STATUS OF TRIBAL FARMERS THROUGH SWEETCORN

Ramanbhai Dahyabhai Patel of kantasewl village of vasanda taluka previously grow peddy by traditional method during kharif and after kharif less water require crop and earn low return Rs.48000/hecture. After intervention of KVK, he adopt crop diversification technology and Grow short duration higher remunerative crop, sweet corn, as per the direction of KVK scientist and get income of Rs.159000 /hecture within 85 days. Sweet corn straw was used for animal feed and increase milk 1 lit/day and fat percent 1.0 in cow. Around 106 farmers have adopted sweet corn nearby village Kantasvel.[19]

Box No:4.7

IMPROVEMENT IN THE SOCIO ECONOMIC STATUS OF OKRA GROWERS

500 tribal farmers are the beneficiaries of the project. KVK supplied inputs like seeds, bio fertilizer, organic manure, krats, yellow sticky traps & bio pesticides and scientists' continuous follow up and diagnostic visit at farmer's fields. Growing of off season okra is profitable practice. Overall 51% yield was increase over traditional method of planting. Famers got more income (32 to 44 thousand/Vigha) from off season okra cultivation as compared to other crops grown during winter season.

[19] *nau.in*. (2014, april 1). Retrieved march 19, 2015, from navsari agriculture university website: http://nau.in/pagefiles/2758_FINAL%20SAC%20Report.pdf

4.17 INVESTMENT AND EMPLOYMENT

The MSME industries in Gujarat are at a crucial juncture today, with several large investments being undertaken by the public and private sector players, and developments promising a significant transformation of the sector. The sector is witnessing a fundamental shift that is opening up new business opportunities for the industry.20 At the same time, the competition for scarce resources is expected to intensify and support enablers in terms of infrastructure. The Government of India has enacted the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 in terms of which the definition of micro, small and medium enterprises is as under: Enterprises engaged in the manufacture or production, processing or preservation of goods as specified below:

Enterprises engaged in providing or rendering of services are specified as below:

A micro enterprise is an enterprise where the investment in equipment does not exceed Rs. 10 lakh;

A small enterprise is an enterprise where the investment in equipment is more than Rs.10 lakh but does not exceed Rs. 2 crore;

A medium enterprise is an enterprise where the investment in equipment is more than Rs. 2 crore but does not exceed Rs. 5 crore.21

In case of the above enterprises, investment in plant and machinery is the original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification.

The strength of Gujarat's manufacturing sector lies in its strong base of micro, small and medium scale enterprises. MSMEs have played a pivotal role in the industrial dispersal and the overall industrial development of the state. MSMEs have proved to be a major contributor to the economy of the state, especially in terms of value

[21](*msme*. (n.d.). Retrieved march 11, 2015, from A govt of india website: http://msme.gov.in/web/portal/FAQ.aspx

addition, employment generation and entrepreneurship development. There are at present over 320,000 MSMEs in Gujarat.

In Navsari District - Black Trap, Soil, Sand and Hard Murram minerals are available. No Major minerals are found in the district. Mineral based Industries are Stone crushing, Bricks, Quarry Stone and Mineral Grinding. The Minor forest produce include gum, mahuva flowers/seeds, fruits, honey, medicinal herbs etc. Forest based Industries are found in Navsari district such as Saw Mill, Wooden Furniture, Handicrafts and Herbal Plantation etc.

Navsari district offers good scope for entrepreneurs to establish new industrial units for manufacturing various products. The district abounds in sugarcane fields, Chikoo plantations and Mango trees. Navsari is known for its floriculture activities and sugar business. The Focus Sectors of the district are agro 7 food processing industries, textiles, drugs & pharmaceuticals, mineral related industries, and marine based industries.

Since the land is limited, industry provides alternative activities for economic development of the district. The district administration is attracting new entrepreneurs through various benefits of cash subsidy, tax exemption. Concessional rates of interest and other liberalized terms and conditions. This has provided very good opportunities for industrialization of the district. Drugs, pharmaceuticals and vegetable oils emerged as the new sectors attracting investments during 1998-2011. Soaps, cosmetics and toiletries, metallurgical industries and food processing industries were among the top five investment generating sectors during 1998-2011 besides textiles and sugar industries.

The climate of Navsari district is well suited for floriculture activities. The Gujarat Government has covered floriculture activities under Jyotigram Yojana as a result of which 24- hour power is available. Surat- Navsari is proposed to be developed as an industrial area along the Delhi Mumbai Industrial Corridor (DMIC). This will augment development of textiles, chemicals, pharmaceuticals and food processing industries which are prominent sectors. Cotton Textile, Wood based furniture enterprise, metal and mineral based enterprise, chemical and paper based enterprises are growing sector in Navsari district.

TABLE 4.13 (I) INVESTMENT & EMPLOYMENT OF MICRO ENTERPRISES (IN LAKHS)

Year	EM-PART 1			EM-PART 2		
	Units	Investment	Employment	Units	Investment	Employme
2009-10	26	597.72	947	217	628.39	501
2010-11	79	1802.55	954	228	622.85	469
2011-12	37	914.82	511	342	1267.13	838
2012-13	35	804.58	393	420	1493.75	977
2013-14	42	977.87	365	141	1522.52	577
Total	219	5097.54	3170	1248	5534.64	3262

TABLE 4.13(II) INVESTMENT & EMPLOYMENT OF SMALL ENTERPRISES (IN LAKHS)

Year	EM-PART 1			EM-PART 2		
	Units	Investment	Employment	Units	Investment	Employment
2009-10	16	3023.27	738	13	1841	192
2010-11	23	5172.8	793	16	2485	285
2011-12	26	3676.67	473	31	4029.44	795
2012-13	23	4969.91	727	27	4795.77	624
2013-14	38	7325.46	1000	27	2517.67	650
Total	126	24168.11	3731	144	15668.88	2546

TABLE 4.13 (III) INVESTMENT & EMPLOYMENT OF MEDIUM ENTERPRISES (IN LAKHS)

Year	EM-PART 1			EM-PART 2		
	Units	Investment	Employment	Units	Investment	Employment
2009-10	Nil	Nil	Nil	Nil	Nil	Nil
2010-11	Nil	Nil	Nil	Nil	Nil	Nil
2011-12	Nil	Nil	Nil	2	1490	27
2012-13	2	2296	122	1	1070.79	34
2013-14	Nil	Nil	Nil	Nil	Nil	Nil
Total	2	2296	122	3	2560.76	61

TABLE 4.13 (IV) TOTAL INVESTMENT & EMPLOYMENT OF ALL ENTERPRISE (IN LAKHS)

Year	EM-PART 1			EM-PART 2		
	Units	Investment	Employment	Units	Investment	Employment
2009-10	42	3620.99	1685	231	3540.15	727
2010-11	102	6975.35	1747	244	3107.85	754
2011-12	25	2790.85	445	373	5296.57	1633
2012-13	60	8070.49	1242	449	7779.52	1628
2013-14	80	8303.33	1365	168	4040.19	1227
Total	309	29761.01	6484	1465	23764.28	5969

(Source: District Industry Centre, Navsari)

The major exportable items are Drugs and pharmaceuticals, PVC pipe and cables, Soaps, Cosmetics, Textiles, Gems & Jewelry, Chemical, Sugar items etc. In Navsari district, total 1494 Units of Repairing & Service units are registered with an investment of Rs.3,534.51 (Lakh) contributing Total employment of 5,224 March 2011.[22]

The Gujarat State Handloom and Handicrafts Development Corporation markets the products under the brand name of Garvi- Gujarat through its outlets in various cities across the country. A total of 43 rural marts have been sanctioned so far in 15 districts of the State with a total grant assistance of Rs.27.51 lakh as on 31 September 2011. 3 Rural Haats have been sanctioned in Bharuch, Navsari and Tapi districts with total grant assistance of Rs.14.40 lakhs in 2010-11.

Industrial Development

There are approximately twenty three medium and large scale industries present in Navsari. Most of these units are concentrated in Navsari and Gandevi talukas. Industries under SSIs present in Navsari are food products, metal products,

[22](Brief Industrial Profile of NAVSARI District , 2011)

chemicals and rubber and plastic products manufacturing. Maximum numbers of SSI units (1,412 units) are in repairing and servicing oriented sector followed by metal products manufacturing (533 units). Highest numbers of SSI units are located in Navsari taluka followed by Gandevi and Chikhli talukas. The development of Vansi-Borsi port as direct berthing deep water port proposed by Gujarat Maritime Board will fuel the industrial growth in the district. It will improve business opportunities for industries such as mineral based industries, food and agro processing industries, salt industries and marine based industries. Surat-Navsari is proposed to be developed as an industrial area along the Delhi Mumbai Industrial Corridor (DMIC). This will augment development of textiles, chemicals, pharmaceuticals and food processing industries which are prominent sectors.

The district has huge sugarcane fields as a result of which sugar manufacturing industry is a major business in Maroli and Gandevi talukas of the district.

There are approximately 25 medium and large scale industries present in Navsari with a total investment of generating employment for more than 10000 persons. Most of these units are concentrated in Navsari and Gandevi talukas.

Some of the major medium and large scale players present in district are shown below:

Name of Company	Taluka	Production
Mafatlal Industries Ltd.	Navsari	Textiles
Gufic Biosciences Ltd.	Navsari	Drugs and Pharmaceuticals
Sahakari Khand Udyog Mandli Ltd.	Gandevi	Sugar
Tata Steel Ltd.	Navsari	Hot Rolled Profiles and Cold Formed Profiles
The Navsari Cotton and Silk Mills Ltd.	Navsari	Yarn
VVF Limited	Navsari	Chemicals
Best Roses Biotech Pvt. Ltd.	Navsari	Cut Flowers
Bhukhanvala Tools Pvt. Ltd.	Navsari	Machine Tools

There are approximately 7,525 small scale industries present in Navsari. Some of the main industries under SSIs present in Navsari are food products, metal products, chemicals and rubber and plastic products manufacturing.

Maximum numbers of SSI units (1,412 units) are in repairing and servicing oriented sector followed by metal products manufacturing (533 units). Highest numbers of SSI units are located in Navsari taluka followed by Gandevi and Chikhli taluka.

4.18 SUGAR INDUSTRIES IN NAVSARI DISTRICT

As the economy of Navsari District is agro based and the farmers of Navsari district produce the crops like fruits, vegetable, flowers and sugar cane. There are two sugar factories namely Cooperative Sugar Factory ltd. Navsari and Cooperative Sugar Factory ltd. Maroli, in Navsari district and it is noteworthy to note that both the sugar factories are working under the cooperative system. The role and contribution of both sugar factories taken together indicates the growth in cultivation of sugarcane, sugar production and price receipt by the members from sugar factories and employment generation by the cooperative sugar factories in Navsari District is presented as under:

TABLE 4.14(I) CONTRIBUTION OF COOPERATIVE SUGAR FACTORIES IN NAVSARI DISTRICT

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	CAGR
Crop Cultivation Acres	48020	52178	53968	48168	54559	0.11
Crushing (Lakh MT)	13.51	15.38	13.28	14.789	14.95	0.08
Production Per Acre /Tonne	25.94	28.94	24.15	29.48	25.77	-0.01
Production of Sugar (Lakh MT)	3.65	5.1	4.61	4.9	5.86	0.46
Rate of Sugarcane (Per MT)	2739	2533	2954	3200	3000	0.08
Sugar Cane Prices Paid to farmers (Rs in Crores)	437.12	308.15	391.54	455.75	392.06	-0.08
Sale of Sugar (Rs in Crores)	413.69	423.61	423.48	486.15	535.1	0.23
Members	33267	33434	33661	33837	34148	0.02
Employment Generation	80000					

(Source: Annual Reports of Sugar Factory 2009-10 to 2013-14)

The above table indicates than 80000 families are getting their livelihood from the two sugar factories in Navsari District. More than 34000 farmers and 80000 other people are getting direct and indirect employment from these sugar factories. The two sugar factories together produce 5.86 lakh tones of sugar and providing around Rs 400 crores to the farmers towards the prices of sugar cane. Thus the sugar factories are playing important role in the economic development of people of Navsari district. The progress and contribution of individual sugar factory is given in following table.

TABLE 4.14(II) CONTRIBUTION OF COOPERATIVE SUGAR FACTORY LTD. GANDEVI

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	CAGR
Crop Cultivation Acres	12555	14550	15675	14163	15705	0.196
Crushing (Lakh MT)	2.44	3.78	3.45	3.689	4.56	0.649
Productivity Sugar Cane (Per Acre/Ton)	20.00	26.00	22.00	26.00	25.00	0.195
Production of Sugar (Lakh MT)	2.39	3.82	3.46	3.6	4.58	0.683
Rate of Sugarcane	2450	2558	2720	2845	2775	0.105
Sugar Cane Prices Paid to farmers (Rs in Crores)	54.84	70.2	97.33	104.31	101.64	0.638
Sale of Sugar (Rs in Crores)	65.48	70.08	111.29	120.94	106.9	0.480
Members	20285	20291	20304	20325	20368	0.003
Employment Generation	45000					

(Source: Annual Reports of Sugar Factory 2009-10 to 2012-13)

TABLE 4.14 (III) CONTRIBUTION OF COOPERATIVE SUGAR FACTORY LTD. MAROLI

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	CAGR
Crop Cultivation Acres	35465	37628	38293	34005	38854	0.076
Crushing (Lakh MT)	11.07	11.6	9.83	11.1	10.39	-0.049
Production Per Acre /Tonne	31.88	31.87	26.3	32.96	26.53	-0.137
Production of Sugar (Lakh MT)	1.26	1.28	1.15	1.30	1.28	0.013
Rate of Sugarcane (Per MT)	3027	2507	3187	3555	3225	0.052
Sugar Cane Prices Paid to farmers (Rs in Crores)	382.28	237.95	294.21	351.44	290.42	-0.197
Sale of Sugar (Rs in Crores)	348.21	353.53	312.19	365.21	428.2	0.180
Members	12982	13143	13357	13512	13780	0.049
Employment Generation	35000					-

(Source: Annual Reports of Sugar Factory 2009-10 to 2012-13)

Critical Interventions required for development of ancillary industries to sugar industry:

- Training to farmers for improvement of seeds, fertilizers to increase productivity
- Government intervention and tax incentives and other policy support to cooperative sugar industries.

4.19 ROLE OF COOPERATIVE DAIRY IN LIVELIHOOD OF TRIBAL REGION OF NAVSARI DISTRICT

Valsad District's Milk Producers Union Ltd (Popularly known as Vasudhara Dairy) is a cooperative dairy located at Alipore, approx 3 km from Chikhli. It produces and markets milk and ghee (clarified butter) for the local market under the Amul brand name. Its current capacity is 400,000 liters per day.

India's White Revolution has made the country the largest milk producer in the world, but this has bypassed the Adivasi heartland of the central Indian plateau. Presently, the Dairy is collecting 3.00 lakh liters of milk per day from 750 village dairy cooperatives. Among them, 80% of the cooperatives are located in tribal areas and 75% societies are managed by women. This Dairy has installed a capacity of 3 lakh liters. The Vasudhara dairy, which has organised 1,20,000 mostly Adivasi women from Valsad, Navsari, Dang districts into a Rs 1500 crore dairy business, provides a model for India's second White Revolution designed to empower Adivasi women. Vasudhara Dairy has its branches (ice cream manufacturing plants) in Nagpur and Boisar. Amul Ice Cream and other milk products produced here are marketed to Mumbai and Maharashtra markets.

From the year 1996, for involvement of tribal's of Navsari District, BAIF Development Research Foundation, an NGO entered into an agreement with Vasudhara Cooperative Dairy for helping the tribal for entering into milk business for their livelihood. The BAIF is continuously trying to enhance the milk collection as well as the milk productivity of cows and buffalos and profitability of tribal villages of Navsari District. The BAIF is trying to help the tribal dairy farmers by educating them to reduce the age of calving to less than 30 months and reducing the calving interval while enhancing the yield of the crossbred cows.

The Dairy had already established over 200 Veterinary Clinical centers in the district by supporting self-employed paravets and appointing Veterinary doctors to support breeding and health care services. The BAIF has taken responsibility of close monitoring and a holistic development approach to improve the management of dairy husbandry in tribal areas of Navsari district. Thus, a joint programme between Vasudhara Dairy, BAIF and local Dairy Cooperatives was established.

BAIF established a disease investigation laboratory and linked this laboratory with the farmers through Al technicians and veterinary doctors already working in the milk shed. The activities in the new programme included examination of blood, milk, uterine discharge and urine and fecal samples and sending reports to the farmers with an appropriate prescription for health problems and vaccination against FMD, HSBQ and Theileriasis. Special awareness campaigns on clean milk production, fodder development and special feeding of pregnant cows and heifers were also carried out by BAIF and because of this the farmers were educated to feed the heifers better and AI technicians were given special incentives based on the coverage of heifers and if their age at first calving was less than 30 months. Similarly, an incentive was also given for reducing the interval between two carvings by Vasudhara Dairy.

As a result of this programme, the milk collection of the dairy which was 1.75 lakh liters in 2001 increased to 3.00 lakh liters in 2013. The programme benefited most of the tribal families who did not have any opportunity to sell the surplus milk earlier. The programme increased the milk yield and reduced the cost of milk production. The Dairy did not have to make any huge investment except for setting up the Disease Investigation Laboratory. The cost of providing services to the participating families was recovered from the payment due from supply of milk. The programme supported over 250 self-employed paravets who had assured source of income. As their work was monitored, they could upgrade their skills and the farmers got a good deal. This model can be widely replicated by Dairy Federations in the country.

Interventions needed for dairy development and Livelihood of Tribal are;

1. Easy and concessional loans to tribal for purchase of livestock.
2. Facilities for milk collection from each village, where the cooperative milk society does not exist.
3. Increase the reach for Livestock breeding services,
4. Facilities for disease diagnostic and referral services,
5. Availability of preventive vaccination subsidy,
6. Awareness for Deworming, Calf / heifer rearing subsidy, Mastitis control, Promotion of forage production, Popularization of biogas and vermin-compost production
7. Facilities for Training, motivation and extension.

4.20 BANKING PROFILE IN NAVSARI DISTRICT

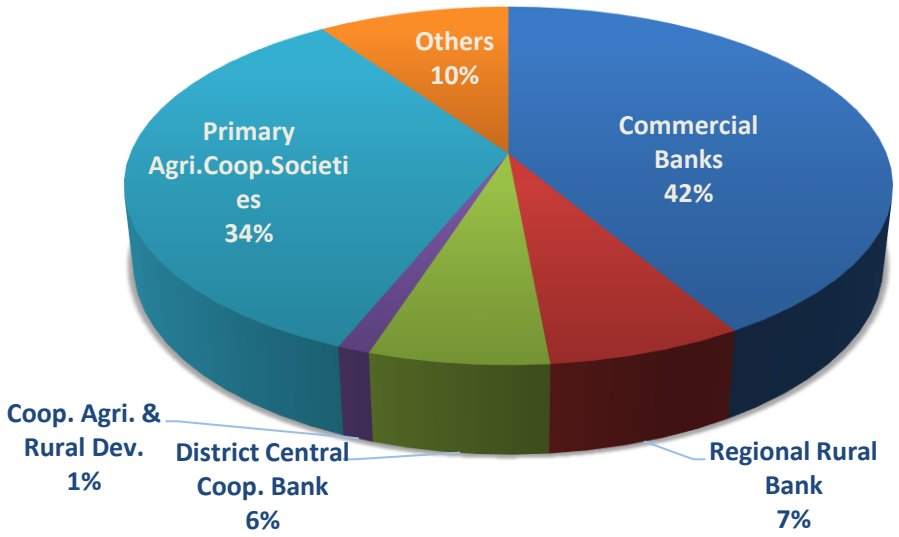
Navsari District has a wide network of banks with 344 branches including 167 branches of 20 commercial banks and 142 Branches of 120 cooperative banks and credit societies. The share of cooperative banks is almost 58% in terms of outreach to the people of Navsari. The total households of 191763 of 143 villages of Navsari District are being served by 259 branches.

TABLE 4.15 (I) NETWORK AND OUTREACH (AS ON 31/03/2013)

Agency	No. of Banks/Soc	No. of Branches				Per Branch Outreach	
		Total	Rural	Semi	Urban	Villages	Househol
Commercial Banks	19	143	80	21	42	3	3502
Regional Rural Bank	1	24	22		2	16	20868
District Central Coop. Bank	1	22	20		2	17	22765
Coop. Agri. & Rural Dev.	1	4	4			94	125207
Primary Agr. Coop. Society	118	118	118			3	4244
Others	12	33	15	4	14	11	15177
All Agencies	152	344	259	25	60	143	191763

(Source : Potential Linked Plan Report 2012-13, NABARD)

FIGURE 4.24 BANKING NETWORK (NO .OF BRANCHES, %)

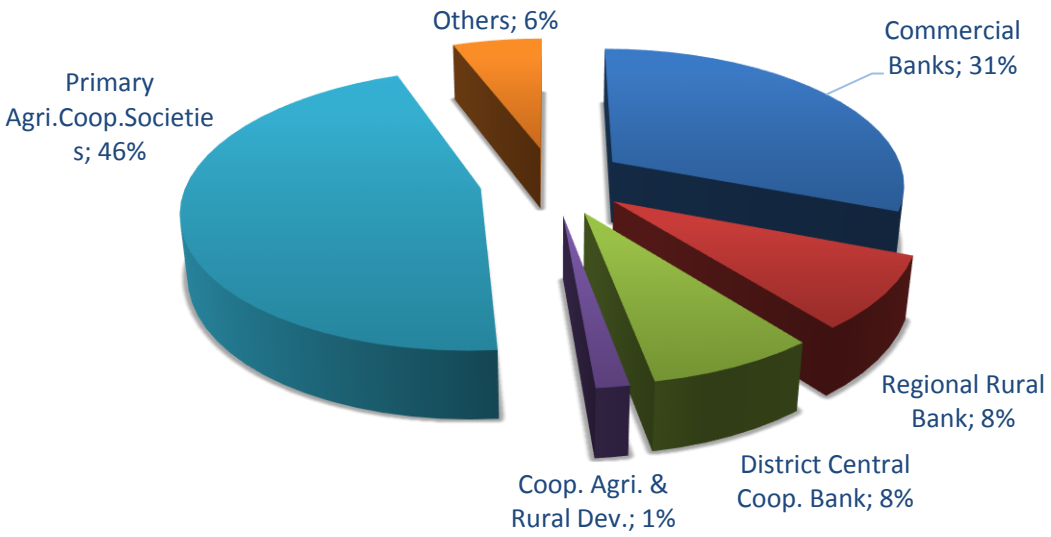


(Source : Potential Linked Plan Report 2012-13, NABARD)

4.20.1 BANK NETWORK IN NAVSARI DISTRICT

There is 55% share of cooperative banks and cooperative credit societies in term of outreach in the rural area of Navsari District. The Commercial banks and RRB and other non-cooperative banks have share of 31%, 6% respectively. It shows the strength of cooperative structure in Navsari District.

FIGURE 4.25 RURAL NETWORK OF BANKS (NO OF BRANCHES and % OF SHARE OF VARIOUS BANKS) IN NAVSARI DISTRICT



(Source : Potential Linked Plan Report 2012-13, NABARD)

TABLE 4.15(II) DEPOSITS MOBILISATION BY BANKS IN NAVSARI DISTRICT

Agency	No. of accounts				
	31-Mar-11	31-Mar-12	31-Mar-13	Growth (%)	Share(%)
Commercial Banks	1188577	1423711	1541790	8	86.49
Regional Rural Bank	95563	104858	113835	9	6.39
Cooperative Banks	70280	70411	71878	2	4.03
Others	28695	45980	55125	20	3.09
All Agencies	1383115	1644960	1782628	8	100

(Source: DLP Report of NABARD 2013)

TABLE 4.15(II) DEPOSITS MOBILISATION BY BANKS IN NAVSARI DISTRICT

Agency	Amount of deposit ("Rs. Lakh)				
	31-Mar-11	31-Mar-12	31-Mar-13	Growth (%)	Share (%)
Commercial Banks	716264	861675	1004945	16.63	86.93
Regional Rural Bank	21531	25417	29785	17.19	2.58
Cooperative Banks	21095	23712	27955	17.89	2.42
Others	43098	64693	93320	44.25	8.07
All Agencies	801988	975497	1156005	18.50	100

(Source: DLP Report of NABARD 2013)

The table shows that the people of Navsari have good savings and thrifts habits and they try to save their earnings in banks. It is found that the total 98060 depositors have saved their Rs. 11560 Crores in various banks at the end of 2013. The growth rate increase in the depositors was around 7 to 8% per annum and it is noteworthy to mention that the average annual growth rate of deposit amount was 16% to 18% per annum, which is a good sign of development and indicates the increase in surplus income. It is found that more than 650% depositors prefers commercial banks to save their deposits.

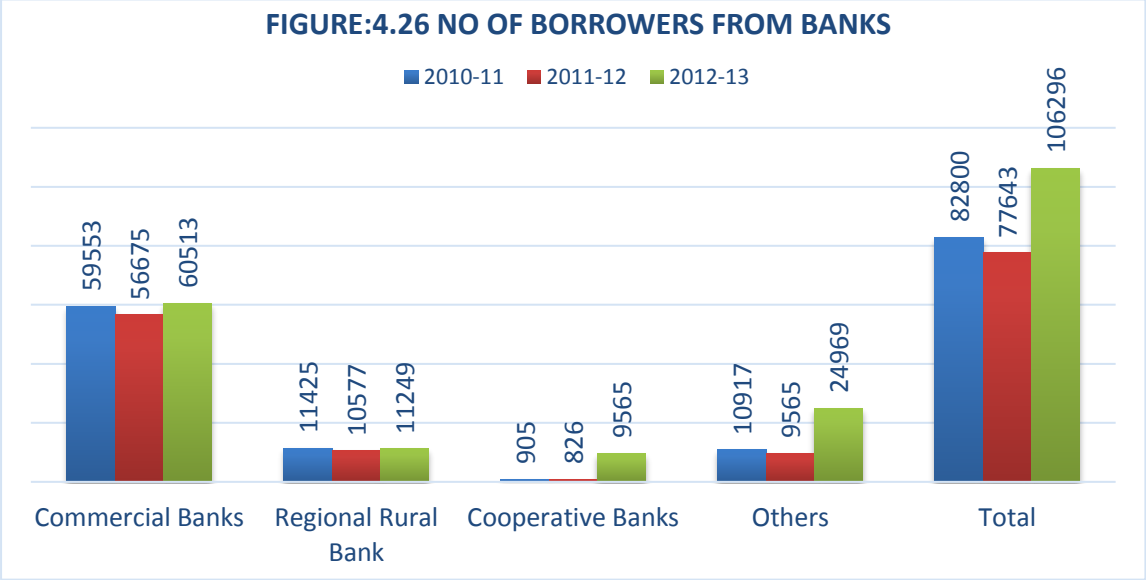
Whereas, despite of huge network of 44% of cooperative bank in the district and 55% share in rural reach, their share was found less than 10%. The reason behind

less deposit in cooperative banks and credit societies was that the cooperative banks were not allowed to open deposit accounts of government organizations, corporations as well as Panchayati Raj Institutes and hence they keep their deposits in the commercial banks. Secondly the cooperative banks have less branch network in urban area in compare to commercial banks, where the quantum of deposits is always many times more than the rural areas.

4.15(III)LOANS & ADVANCES OUTSTANDING IN NAVSARI DISTRICT

Agency	No. of accounts								
	31-Mar-11	31-Mar-12	31-Mar-13	Growth (%)	Share (%)	31-Mar-11	31-Mar-12	31-Mar-13	Growth (%)
Commercial Banks	59553	56675	60513	6.77	61.71	120838	137387	157789	14.85
Regional Rural Bank	11425	10577	11249	6.35	11.47	6761	7836	10170	29.79
Cooperative Banks	905	826	1329	60.90	1.36	7636	7323	9616	31.31
Others	10917	9565	24969	161.05	25.46	15854	17287	31211	80.55
All Agencies	82800	77643	98060	235.07	100	151089	169833	208786	22.94

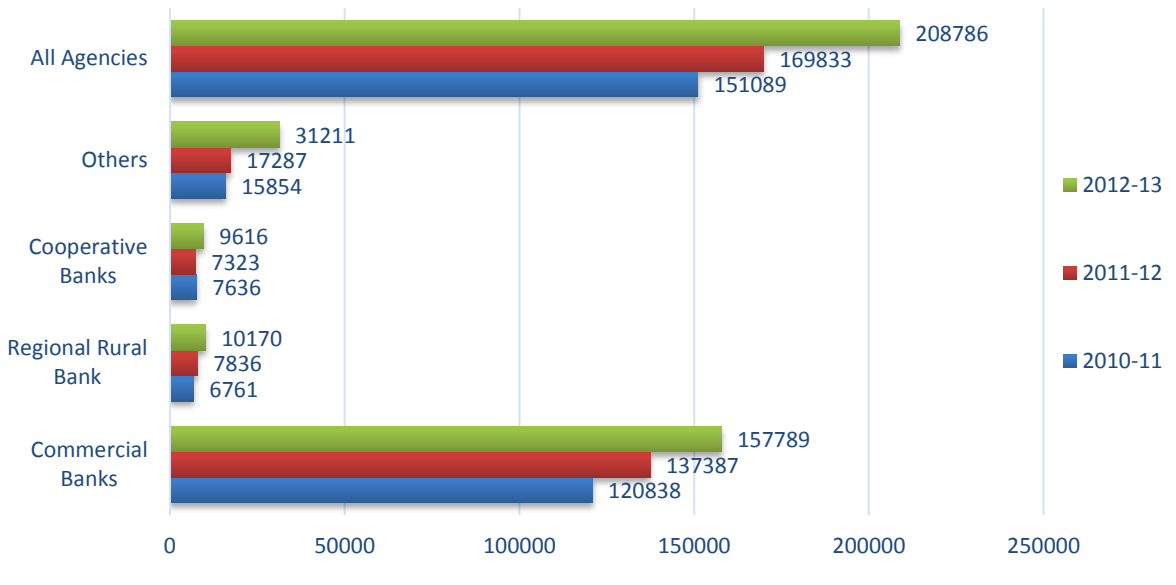
(Source : Potential Linked Plan Report 2012-13, NABARD)



(Source : Potential Linked Plan Report 2012-13, NABARD)

Total numbers of borrowers in Navsari District were 80800 in 2010-11 which have been increased up to 106296 at the end of year 2013. More than 60% borrowers borrow from the commercial banks followed by Cooperative Banks. Below graph show total loans provided by all banks.

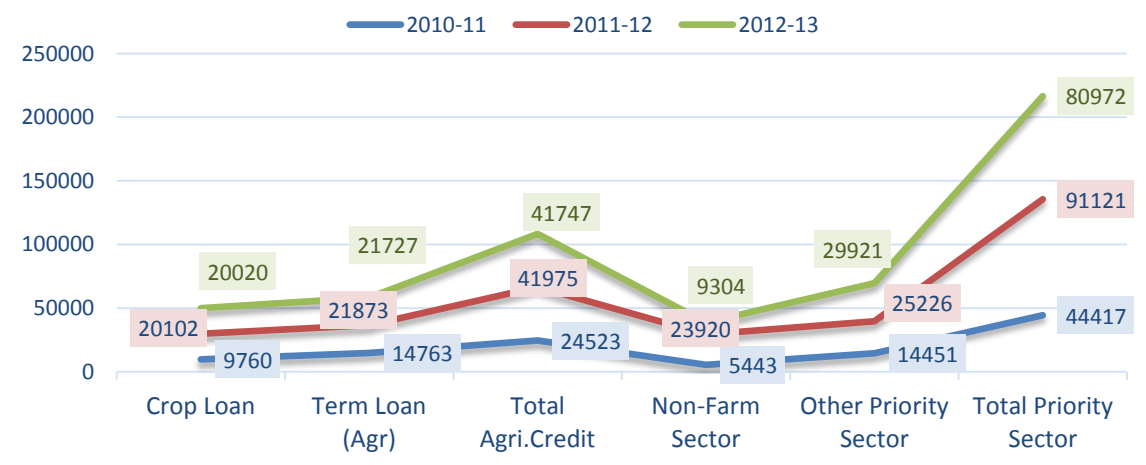
FIGURE:4.27 LOANS AND ADVANCES BY BANKS (RS IN LAKH)



(Source : Potential Linked Plan Report 2012-13, NABARD)

The above graph indicates that the banks have given a loans to the people of Navsari district for various income generating activities of tune of Rs 151089 lakhs in 2010-11 which has been increased up to Rs 208786 in 2012-13.

FIGURE:4.28 LOANS GIVEN TO PRIORITY SECTOR BY BANKS



(Source : Potential Linked Plan Report 2012-13, NABARD)

The above graph indicates that around 40% of the total loans were given for agriculture and small trade, agro base industries and other priority sector. The Growth of the priority sector loans in Navasari District has been increased from Rs. 44417 lakhs in 2010-11 to Rs 80972 lakhs in 2012-13. It shows that the banks are contributing for the development of agriculture and small trades and business in significant way.

Bank	No of Banks	No of Branches	SHGs/JLG	BCs/BFs
Commercial Banks	19	143	3784	51
Regional Rural Bank	1	24	2127	-
District Central Coop. Bank	1	22	90	-
Coop. Agri. & Rural Dev.	1	4	-	-
Primary Agr. Coop. Society	118	118	-	-
Others	12	33	-	-
All Agencies	152	344	6001	51

(Source : Potential Linked Plan Report 2012-13, NABARD)

4.21 BPL FAMILIES

The people with a per capita monthly income of less than Rs 324 in the rural areas and Rs 501 in the urban areas per month should be treated as "below poverty line" or BPL. Anyone wanting to be included in BPL should be a landless labourer and should own less than one acre of land. The BPL survey, carried out by the state rural development department, finds that those in the 0-16 group, with those scoring 0 (zero) being the most poor and not owning any asset, primarily immovable poverty. There were 75512 families in the year 2000, which jumped drastically to 323168 in 2009, indicating a rise of 328%. The highest numbers of poor families were in the Chikhli taluka and the lowest numbers of poor families were in the Jalalpore taluka in 2009 as shown in Table 4.16.

TABLE 4.16 BPL FAMILIES

Taluka	2001 (Old List)	2007 (Add On)	2009 (Add On)	Total
Vasada	18592	2902	46986	68480
Chikhli	22254	6004	65281	93539
Gandevi	14780	5496	46346	66622
Jalalpore	9311	2470	30711	42492
Navsari	10575	1836	39624	52035
District Total	75512			323168

(Source: Rural Development Department, Gandhinagar)

Elimination of poverty continues to be a major concern of a district. Expansion of employment opportunities, augmentation of productivity and income levels of both the underemployed and employed poor would be the main instrument for achieving this objective. However, even an employment oriented growth strategy will achieve this goal only in the medium and long-term. In the meantime, short-term employment will have to be provided to the unemployed and underemployed, particularly among the poor and vulnerable sections.

In Vasada the BPL families are increased by 268.33%, in Chikhli the BPL families are increased by 320.32%, in Gandevi the BPL families are increased by 350.76% , in Jalalporee the BPL families are increased by 356.36% and in Navsari BPL families are increased by 392.05% as compared to 2001 as shown in figure 29.

4.22 MICRO FINANCE IN NAVSARI DISTRICT

No of SHGs under Mission Mangalam	8756
Members	97364
Farm Sector Activities	34955
Non-Farm Sector Activities	4578
Financial Assistance to SHG	7815
Amount of RF	599.03 Lakh
Disbursement to SHGs	3267.39 Lakh

(Source: Records of DLM, GLPC, Govt of Gujarat, Navsari, Oct. 2015)

There are 8756 Self-help groups with total 97364 members from BPL category people of Navsari District who are doing several activities for their livelihood. All these groups are linked and associated with Gujarat Livelihood Promotion Company, promoted by the Government of Gujarat. Out of the total, more than 34955 SHG members in Navsari district are engaged in various agriculture and allied agriculture activities farming of paddy and other crops and also doing small trading activities like selling of fruits and vegetable, milk procurement and selling of milk etc. Out of the total, 4578 members of SHGs are engaged in activities like embroidery, sewing, stitching, cleaning of agro products etc.

Till the end of year 2013, the Government of Gujarat has given financial assistance of Rs. 3267.39 lakh to 7815 SHGs under Revolving Funds Schemes to do economic activities and create source of income for their livelihood.

Critical Interventions required for creating definitive impact in the sector:

Presently it is found that around 50% SHG groups are doing only savings and thrift activities and they encourage internal lending for consumption purpose like hospital, child education, purchase of household items, social and religious function etc. Hence it is suggested to motivate them to borrow for income generating activities.

It is also found that around 30 to 40% SHG members are doing some small business as an individual / sole trade, and hence it is suggested that there is a need of promoting economic activities under the group activities, so as to increase the economies of scales and it will help them to build close relationships and also the business acumen.

Critical Interventions required for creating definitive impact in Micro Finance sector:

- Training and Awareness about management of SHGs
- Training about various income generating activities for sustainable livelihood and development
- Government Intervention for motivation for group economic activities and MSMEs

4.23 FLAGSHIP PROGRAMMES IN NAVSARI- AGRICULTURE AND LIVELIHOOD

In this era of modernization, only economic growth is not an only indicator of development. Development is much broader concept which includes economic, social, political and cultural advancement in planned direction. The government in last decade has launched many Flagship Programmes and Mission Mode Programmes for addressing specific areas of challenge and social-economic concerns of the state as whole.

Krushi Mahotsav is an intensive convergence and mass contact strategy held every year for one full month during May-June in Navsari. Its critical components include Krushi Mela, Exhibition and Seminars/Talks. Experts from agricultural universities directly interact with farmers at the village level and area specific and crop specific issues and concerns of farmers are attended to.

As a result of this programme, Krushi Mahotsav has led to heightened awareness amongst farmers about the advantages of scientific farming and animal husbandry, benefits of drip irrigation and built a bridge between agri-scientists and the farming community. Following are the details of various programmes or schemes of Navsari krushi mahostav.

1.Distribution of Agriculture and Horticulture kits

Poor farmers in each village are also provided input kits on agriculture, horticulture and animal husbandry, containing seeds, fertilizers, pesticides, and such like. Documentary films and VCDs on extension education prepared by the state agricultural universities are distributed to the farmers or the gram panchayats.

Agriculture Kit	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	475	435	540	650	714	581
Jalalpore	380	435	386	375	391	333
Gandevi	630	437	419	410	499	293
Chikhli	1201	1108	1095	1116	1218	1143
Vansda	1064	1016	1030	975	1029	1057
Total	3750	3431	3464	3551	3851	3785

(Source: Department of Agriculture, Navsari)

horticulture Kit	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	553	560	570	570	0	570
Jalalpore	405	410	410	409	0	409
Gandevi	395	390	390	390	0	257
Chikhli	760	760	660	760	0	746
Vansda	550	555	550	550	0	510
Total	2663	2665	2580	2680	0	2452

(Source: Department of Agriculture, Navsari)

2. Soil health Card

Soil tests are undertaken and soil health cards are given to the farmers detailing the soil composition of their respective farms and suggesting the best possible crops for that soil type. Due to the results of soil Health card scheme which explants the manner of cropping based on nature of soil, the farmers have sown crops which more previously unknown to them. This unique scheme is a sure way to increase income of the farmers. Following data shows year wise beneficiary of soil health card in the district.

Soil Health card	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	542	1167	3310	9179	0	5362
Jalalpore	478	1912	5655	8406	0	5487
Gandevi	802	1875	7872	3376	0	6409
Chikhli	1405	2972	8149	8319	0	5362
Vansda	1986	2461	9610	5597	0	3059
Total	5213	11087	29802	32788	0	25679

(Source: Department of Agriculture, Navsari)

In 2009, total 5213 soil health card issued in the district which increased by 93% in 2010 and afterwards there is a constant increase in number of soil health card issued as per the data.

3. Drip Irrigation

Management of aquifer and water resource is very vital. The state has undertaken massive water conservation drives by constructing check dams, bori bandhs, farm ponds and terrace ponds. It has immensely improved the yield. Gujarat Green Revolution Company (GGRC) is implementing agency for implementation of micro irrigation scheme on behalf of government of India and government of Gujarat with the aim to save water and electricity and enhancing agriculture productivity.

Drip Irrigation	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	83	65	81	72	84	104
Jalalpore	116	109	111	96	91	133
Gandevi	29	38	61	73	57	189
Chikhli	380	642	754	735	732	746
Vansda	284	821	569	493	623	419
Total	892	1675	1576	1469	1582	1591

(Source: Department of Agriculture, Navsari)

4. check dams

Check dams are low cost dams which are built across streams to prevent rain water flowing away in to the sea. Check dam serves mainly two purpose: The first is to provide direct irrigation when rain fails and second facilitate the recharging of surrounding wells through percolation of water.

Check dam	Year wise No. of works					
	2009	2010	2011	2012	2013	2014
Navsari	6	4	3	3	3	16
Jalalpore	1	2	2	1	0	1
Gandevi	4	3	2	6	10	8
Chikhli	6	20	25	23	26	22
Vansda	6	12	35	10	29	34
Total	23	41	67	43	68	81

(Source: Department of Agriculture, Navsari)

Box No.4.8

FISHERY IN SWEET WATER

Under the RKVY Scheme, Holistic Development of 20 adapted villages of south Gujarat project was sanctioned for auricular science center working under Navsari Krishi University, Navsari. Along with farming, the farmers also do fishery in the sweet water with scientific way with this intent a fisherman group was formed at pathri village of gandevi taluka. In the village on about 3.50 Hectors of land, a fishery pound was given on lease for 3 years in the area under the consultation of fishery experts from university; they were trained for fishery, in a scientific way. In august 2010, the center seeded the water pound with 50000 fish fry 3500 figure ling and in September, about 10000 year ling fish seeding along with 18 kg of thing was thrown. The sale market stage for user ling fish arrives when the fish is brought up with the weighing 1 to 1.5 kg. Zinga fish is also set for sale at that time. About 7 to 8 lakhs rupees are earned as income and the farmers are mostly benefited under RKVY.

Box No.4.9

PEARLS FARMING

Name Of Farmer: Bhargavbhai Desai

District: Chikhli

Village: Talavchora

Course & Practical Knowledge of aquaculture: Bhubaneswar

Bhargavbhai employs 15 people on permanent basis on this farm pond of pearl but the marketing work is still to start however there is greater demand for such pearl in foreign. In south Gujarat this is entirely a new activity.

5. Sakhi Mandal

The main aim of the scheme is economic upliftment of rural women by providing them employment opportunities by rural women empowerment. The project is being implemented with this aim, at formation and nurturing of Self Help Group, providing them training, infrastructure facility and credit support. The SH groups formed under this project are popularly known as "Sakhi Mandal" in rural areas. The details of year wise sakhi mandal formed in the district are as under.

Sakhi Mandal	Year wise No. of works					
	2009	2010	2011	2012	2013	2014
Navsari	2	3	5	7	10	18
Jalalpore	3	8	8	12	11	18
Gandevi	8	8	15	12	17	15
Chikhli	8	8	15	12	20	27
Vansda	5	15	21	32	35	34
Total	26	42	64	75	93	112

Box No:4.10 SAKHI MANDAL VANSDA

Ramila Gaman Patel and 14 other women like her from Hambhla village of Vansda taluka in Navsari district are happy that their skill to make Nagli biscuits will now help them earn Rs 5,000 per month from August onwards. At least 15,000 primary students of Vansda will be given Nagli biscuits as supplement in the mid-day meal. Nagli biscuits, which are made by Deep Sakhi Mandal of these women, would be sold at the Haat in Bhinar. The women expect to sell a large quantity of

Nagli biscuits at the Haat, which is likely to be visited by thousands.

The Haat at Bhinar in Vansda has been developed by Gujarat Forestry Development Project and is funded by Japan International Corporation Agency. It has been set up on 15 acre of land in the newly developed Sanskrutic Van at a cost of Rs 4 crore. Tourists travelling to Saputara — Wagai would have an opportunity to buy tribal products ranging from bamboo items to honey and Ayurvedic medicines at this Haat. Self-Help Groups like Deep Sakhi Mandal from the tribal areas of Dang and Navsari districts are pinning hopes on this Haat.

Navsari district collector Remya Mohan said, "This Haat has been developed by social forestry department. We are looking to set up similar Haats at other places in the district for the benefit of the tribal population."[23]

Box No:4.11 OM PARMATMA SAKHI MANDAL

The village named Khergam is one of the famous market areas of the Chikhli Block of Navsari District. Majority of the population of this village consists of "Dhodiya"- scheduled caste. Saraswatiben, a resident of Khergam village motivated other local women residing near her house and formed a group which was collectively named as "Om Parmatma Sakhi Mandal". The group opened a saving account in Bank of Baroda in the same village and started their internal saving of Rs. 50 from each member. They also qualified for the Revolving fund of Rs. 5000/- and by this amount along with the savings, they started internal lending. After looking into the progress and financial situation of the group, Saraswatiben thought of starting an economic activity which resulted into formation of "Om Parmatama Dairy center". The group started with the collection of 60 liters milk. Gradually the collection of milk rose to 350-400 liters per day which was sent to a local cooperative dairy. The dairy used to provide cattle fodder to the group on monthly credit basis which was then deducted from the monthly income through milk delivered to the dairy. The profit amount is equally divided among the

[23]bhatt, h. (2015, july 31). *times of india*. Retrieved from times of india: http://timesofindia.indiatimes.com/city/surat/Tribals-hope-to-earn-well-at-Navsari-Haat-in-Surat/articleshow/48294556.cms

members of the group providing them a decent livelihood platform. These women have now become economically empowered because of sustainable income and they support their families too.[24]

6. Garib Kalyan Mela

The State Government has decided to organize a Garib Kalyan Mela at all taluka of districts and given loan/ subsidy to needed people under various departments beneficiaries of individual schemes.

The government has restructured the distribution of aid to those living below the poverty line through the Garib Kalyan Melas started in 2009. Ministers and senior bureaucrats hand over the benefits directly to the poor, thus cutting out the middleman.

Total 1098 Garib Kalyan Mela has been organized during the last four year and 81.02 lakhs poor people given Rs.12005.55 crore loan/subsidy under the schemes of various department in Gujarat.

GaribKalyanMela	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	2	2	3	5	8	10
Jalalpore	3	4	7	8	10	15
Gandevi	2	2	8	2	9	10
Chikhli	14	26	129	25	22	55
Vansda	25	24	20	30	29	40
Total	46	58	167	70	78	130

(Source: Department of Agriculture, Navsari)

[24]Kapadia, D. D. (2015, august 6). *A study on fruitfulness of "Mission Mangalam" scheme in the selected*. Retrieved from grcgujarat: http://www.grcgujarat.org/pdf/Research%20Papers-1-International_Conf_Vadodara_2014.pdf

7. Krishi Rath

It is a travelling exhibition mounted on a decorated tractor trolley equipped with video projector, posters and extension materials, and manned by agricultural university, scientists and students visit each of Gujarat's 18000 villages on a pre-announced schedule. They provide information and guidance to farmers on topics such as soil health management, crop rotation, organic farming, use of fertilizers and pesticides, irrigation practices, crop and milk marketing strategies, agro-processing and value addition techniques as well as other new opportunities to improve their farming and incomes.

Villages covered under Kisan Rath visits	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	71	70	70	19	17	18
Jalalpore	73	75	75	19	18	19
Gandevi	59	61	61	21	18	19
Chikhli	87	89	89	31	30	31
Vansda	95	95	95	24	24	24
Total	385	390	390	114	107	111

(Source: Department of Agriculture, Navsari)

8. Animal husbandry kit

Animal Husbandry Kit	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	45	350	350	350	329	681
Jalalpore	5	355	355	355	355	705
Gandevi	92	305	305	305	305	610
Chikhli	11	449	450	450	445	900
Vansda	25	475	475	475	475	950
Total	178	1934	1935	1935	1909	3846

9. Artificial insemination

Artificial Insemination (AI) is one of the most effective tools available to cattle producers to improve productivity and profitability of their cattle operation. For the commercial cattleman, this could mean increased weaning weights, improved post-weaning performance, enhanced carcass value and more productive replacement

heifers.[25] The conception rate of animal will increase due to quality improvement of artificial insemination. Presently, 635 private Artificial Insemination centers (Gopalmitra centers) are active in the Gujarat state. The candidates have been trained by training centers under GLDB.

Artificial Insemination	Year wise No. of beneficiaries					
	2009	2010	2011	2012	2013	2014
Navsari	101	38	582	52	6	264
Jalalpore	37	54	766	27	41	488
Gandevi	116	86	670	151	62	254
Chikhli	41	118	970	200	471	364
Vansda	20	68	867	85	490	605
Total	315	364	3855	515	1070	1975

(Source: Department of Agriculture, Navsari)

4.24 VANBANDHU KALYAN YOJANA

4.24.1 VANBANDHU KALYAN YOJANA – GUJARAT & NAVSARI

Vanbandhu Kalyan Yojana was launched in 2007 with an Eleventh Plan allocation of Rs. 15,000 crore for speedy development of tribal areas of the state. The new package envisages re-engineering the processes of existing interventions which focus on livelihood development, provision of quality education and development of infrastructure in these areas.

Government of Gujarat launched the Chief Minister's Ten Point Programme for the development of tribal areas in 2007. This programme seeks to enable the Schedule Tribe regions to merge with mainstream development by bridging the gaps between ITDP blocks and other parts of Gujarat.

[25]cothren, j. (2012, december 5). *wilkes extenion centre*. Retrieved from http://wilkes.ces.ncsu.edu/2012/12/what-are-the-advantages-of-using-artificial-insemination-ai-in-your-livestock-breeding-program/

The ten focus areas of intervention under VKY during the XI Five Year Plan period were as follows:

POINT 1: EMPLOYMENT OPPORTUNITIES FOR 5 LAKH FAMILIES

Navsari District Factsheet:[26]

Tribal Group Dairy Scheme:

- At Gangpur village there are 73 beneficiaries belonging to PVTG Group. Out of these, nine beneficiaries are given 13 cows to start their dairy activities.
- This assistance was provided during the year 2008. The total loan given was Rs. 163100/- and the recovery against which realized to Rs. 109720/-.
- As of now each beneficiary can on an average earn Rs. 4000/- every month.

In Manpur village, **Rekhaben Ashokbhai Waghera** is a landless lady. She is given two cows and facilities for varmi compost. She earns Rs. 10000 to 12000, per month by milching about 22 litres milk on daily basis. She had now her Pukka House with all primary amenities like pure drinking water, toilet and electricity.

Similarly, **Sangitaben Sonubhai Waghera** was given 2 cows are given to her. At present the cows are pregnant, still the Daily milk production is 6 litres. She earns Rs. 3000 to 4000 on monthly basis. As she does not have her own land, is the leisure days she engages herself in labour work on the farms. She has been given the benefit of varmi compost scheme.

Halpati Dairy Scheme-Sonwadi

- Numbers of Halpati families in the village 239
- Families, covered under the project 12
- Total expenditure Rs. 719400
- Total amount of loan Rs. 240000
- Recovery of the loan Rs. 121000
- Monthly average earning for each beneficiary Rs. 4038

[26] Data under the 'Navsari District Factsheet' heading throughout the Vanbandhu Kalyan Yojana section of the report are as collected from the Project Administrative Officer, Vansda, in person, during field visit. It includes examples and numerical data about various initiatives implemented under the Vanbandhu Kalyan Yojana. The figures are as on April 2015.

Geetaben Ramanbhai Halpati: She is a beneficiary of Halpati Dairy Development project. Previously she was doing housework and labour at the residence of local families. She started her activities by sharing method of milching animals. Now she is doing it on her own by taking the advantage of the scheme. She was given one HF cow in the beginning, now she owns 5 cows in all. She is having some 2 Bighas of land, however Geetaben has educated her children in very respectable way. During the year 2012-13, she sold the milk up to Rs. 2,72000/. Now she sells 45 to 50 liters of milk, daily and earning at least Rs 22 to 24 thousand per month.

Agricultural Diversification plan

- Under the scheme, 3650 beneficiaries have been given the advantage so far. The beneficiaries were assisted by giving them the seeds for Bitter gourd, brinjals and tomatoes along with a bag of urea and DAP each, for their use.
- Rs. 500/ were collected from each beneficiary as registration fees.

Beads Faceting and Polishing Centre

At Tankal town on the center, about 30 trainees on 22 Machines were given on job training. All 22 trainees were present at the time of visit. Their daily earning ranges from Rs. 120 to Rs. 150/. The beeds are about 4000 to 6000 per day and the wages are paid at the rate of Rs. 34/- per 1000 beads produced.

POINT 2: QUALITY OF EDUCATION AND HIGHER EDUCATION

Navsari District Factsheet:

E M R S –Bartad

About 402 students are taking qualitative, value based education, and the result for last 2 year consecutively has remained 100% in SSC & HSC classes.

Model Residential School

At Chikhli girls' school, there are 202 female students in standard 8 to 12. The last year's result was 82.25% for 10th and 36.36% for std 12th science.

- There are 22 rooms in the hostel for girls.

POINT 3: ECONOMIC DEVELOPMENT

Navsari District Factsheet:

At Bartad, khanpur, a cold storage facility is available the capacity of which is 100 MT (metric tonne). Society registration process is completed. Construction cost of cold storage was around Rs. 110 lakh borne by the government. Now the cold storage is run by Vasundhara Co-operative Society, Lachhakadi, Navsari.

Fruits and Flower Sale Purchase Co-operative Society, Limzar is functioning with approval of revolving fund of Rs. 7.00 lakh. During the year 2009-10, the society started functioning and up till now it has achieved a total of Rs. 15.55 crore turnover of sale and purchased up to 14.50 lakhs kilo grams of vegetables, benefitting 12,774 farmers through its various activities.

Jasmine Food Processing Unit (Tribal Women's Group-Umarkooi)

The centre is functioning by forming a group of 12 women. In the group, there are 7 BPL female members. The group is being financed to construct a shed for food processing. Rs. 3 lakhs have been allocated as assistance and Rs. 2 lakhs are granted as revolving fund.

- In the current year, the group processed 180 tonnes of pickles from mango and the sale was done up to 50 tonnes in raw form.

Collection Centre:

In the year, 2010-11, under the central scheme, Jivika Project was implemented. Collection centers were constructed for collection and sale of vegetables.

In Vansda taluka cluster wise such 7 collection centres were constructed at the cost of Rs. 2.70 lakh each. The society collects the vegetables in bulk through the various groups of farmers.

The society centres make advance payments to the farmers for their vegetable and on the next day the difference gets adjusted as per the actual rates fetched in the market. A hall at the collection centre that provides direct market to the farmers and removes the middle link.

POINT 4: HEALTH

Navsari District Factsheet:

Vaatsalya Dhaam: There are 6 Vaatsalya Dhaam run in Navsari District for the removal of malnutrition problem in ST children and mothers. 20 children and mothers, 10 pregnant women in the village Tankal are getting the benefit of this project. In the year 2013-14, Rs. 17.52 lakh for Vansda Taluka (Mahuwa & Mankunia) and Rs. 17.52 lakh for Chikhli Taluka (Tankal & Toranvera) were allocated as the fund for the said purpose.

De-addiction Centre: During the visit at Khadsupa 1 beneficiary was admitted who was liquor addicted. Five days treatment was given to him. In addition, expert doctor gives counselling (OPD) at the centre. Rs. 37.00 Lakh were granted for 5 such centres of Navsari district.

POINT 5: HOUSE FOR EVERYONE

Navsari District Factsheet:

- Total of 173 ST beneficiaries have been given the benefit under this scheme so far.
- Additionally another 50 Halpati beneficiaries have been given the benefit under this scheme so far.

POINT 6: PURE DRINKING WATER

Navsari District Factsheet:

- 40 houses of Adivasi groups of Gangpur village are supplied pure drinking water through tap.
- 30 houses of Manpur Vadli Falia of Adivasi group are given pure drinking water of mini water supply scheme by solar light under this project.
- 15 houses are covered with Mini Water supply scheme for drinking water in Manpur village, Vachala Falia.
- 125 water supply schemes implemented with an expenditure of Rs. 281.14 lakhs in the year 2014-15.
- Around 90% village population of ITDP taluka get tap water in Navsari district.

POINT 7: IRRIGATION

Navsari District Factsheet:

- 35 check dams (at an expenditure of Rs. 251.17 lakhs) & 44 lift irrigation schemes (expenditure of Rs. 230.83 lakhs) have been implemented in Navsari.
- 17 beneficiaries of lift irrigation on river of chukhade, village Falia Hanumanbari and around **25 Acre Piyat Area** is covered with rice, lady finger, green grass, Katrgaan Papadi. Groundnut, Parval & barley being produced.
- 12 beneficiaries of lift irrigation on well of Gamit Falia of Charanwada.
- 570 Hectare land covered in irrigation by proving lift irrigation & check dams in the year 2014-15.

Navsari District Factsheet:

- Rs. 37.43 lakh spent for repairing of roads in Vansda taluka for Frontier village, Ambapani.
- Rs. 16.00 lakh spent for repairing of coltar roads and drainage pipe of village Piplagbhaan (from near Petrol pump to Vad Falia, Bombay Falia, Gandhi Falia Halpativas.)
- Rs. 39.00 lakh spent for coltar roads and drainage pipe at Godhabari (from main road to Dungari Falia)
- Rs. 100.00 lakh spent for full length drain slab at lower cause way from Sara to Godhabari Road.
- Total of 53 km road facility provided with expenditure of Rs. 909.95 lakhs in Navsari.

POINT 8: SEASONAL ROADS

The objective here is to promote wealth creation in tribal areas and improve the quality of life of all tribal families. Certain strategies and activities undertaken under this head are:

a) Improvements in the quality of roads in tribal areas.

b) All hamlets with population of less than 250 to be connected by roads.

c) Special drive for repairing existing roads in tribal areas.

Navsari District Factsheet:

- Rs. 37.43 lakh spent for repairing of roads in Vaansda taluka for Frontier village, Ambapani.
- Rs. 16.00 lakh spent for repairing of coltar roads and drainage pipe of village Piplagbhaan (From near Petrol pump to Vad Falik, Bombay Falia, Gandhi Falia Halpativas.)
- Rs. 39.00 lakh spent for coltar roads and drainage pipe at Godhabari (from main road to Dungari Falia)
- Rs. 100.00 lakh spent for full length drain slab at lower cause way from Sara to Godhabari Road.
- Total of 53 km road facility provided with expenditure of Rs. 909.95 lakhs in Navsari.

POINT 9: OVERALL ELECTRIFICATION

Navsari District Factsheet:

- Three phase electrification is carried out under Jyotigram project in all villages of Dist. Navsari. All houses of Vansda and Chikhali Talukas are given electricity connections under Rajeev Gandhi Electrification Project.
- 100% electrification of Manpur Gangpur Aachawani village Adivasi group Falia.

POINT 10: URBAN DEVELOPMENT

Grant is sanctioned for street light main road of Vansda and the work of drainage in progress.

Below give are a few success stories with regards to the various initiatives implemented under the Vanbandhu Kalyan Yojana in Navsari District.

4.24.3 SUCCESS STORIES

SUCCESS STORY – 1 (EMPLOYMENT OPPORTUNITIES)

Name of the Scheme – Vanbandhu Kalyan Yojana

Type of Training –Training in garment making.

Name of the Village – Billimora, Ta. Gandevi, Dist. Navsari

Year- 2014-2015

Amount for the Scheme- Rs. 493240/-

Amount of Subsidy Rs. 443916/-

Public Contribution Rs. 49324/-

Numbers of Beneficiaries – 25

Details of Benefits availed under the scheme

Under the scheme, 30 tribal women beneficiaries were imparted training in tailoring work. The programme was organized in the co-ordination with Integrated Tribal Development Agency Vansda- Dist. Navsari. The trained ladies are now earning at their home. The daily wages are up to Rs. 200 to Rs. 250/-, in accordance to their work. Prior to availing benefits from the scheme, the trainee women were engaged in doing housekeeping and miscellaneous house work daily at various households on daily basis. They hardly could earn Rs. 50 to Rs. 100/- as their daily earning.

Situation, after availing the benefits from the Scheme

The Women beneficiaries, after getting the training in tailoring work, now started earning Rs. 200 to Rs. 250/- on daily basis, while working at the place of training and production centre, on the tailoring Machine.

SUCCESS STORY – 2[27] (EMPLOYMENT OPPORTUNITIES)

Following story is that of Enuben Subirbhai Pawar residing at the border Village Bilimora. She is one of the beneficiaries availing training under the Tribal Development scheme. Under aegis of the Tribal Sub Plan Vansda, she was enrolled as trainee for Beads Polishing and imitation jewellery making. The participants were taught to prepare imitation jewellery by dicing the beads and polishing them vertically and horizontally on Machine. During this training, they were also trained for making various designs and decorative cuts like. C. Cut, Flat Cut, S.Cut, etc. Moreover they were also, trained to weave Mangalsutra, Ganthan Mala, Payal, Lariya for fitting design.

After Completion of training for 3 months, the beneficieries got full advantage from the training, as the production centre was started in her own village. Umavanshi Beads at Rajkot and their production centre at Bilmora have entered in MOU. At present they are paid Rs. 35/- for making 1000 beads. In the initial stage they used toproduce some 4000 to 7000 beads daily which increased upto 12000 to 15000 beads giving these women an opportunity to earn Rs. 4500 to Rs.5500/- per month.

The village is situated in Vansda taluka border and Maharashtra border and so these women earlier had to travel for job by crossing the border of Maharashtra and had to face many hurdles. Their children were kept unattended and remained uneducated. Now the

[27] As told to the Inspection/Survey Officer, Vansda during field visit.

situation is changed as there is a rise in the standard of living after the training as the production centre is started near to their residence. Due to this they are able to pay proper attention to their family and children.

SUCCESS STORY - 3 (FOOD PROCESSING CENTRE)

Vanbandhu Kalyan Yojana

Integrated Tribal Development Plan, Vansda.

At a small scale, the tribal women, to get self-employment, started a Food Processing Unit at village Umarkui, Ta. Vansda, Dist, Navsari, under Vanbandhu Kalyan Yojana. 12 Tribal women prepare pickle, do packing and sell at this unit.

- Name of the plan: Building of shades for Food Processing Center at Umarkai.
- Total grant: Rs. 2, 76,000/-
- Year of grant: 2011-12
- Date of completion: May, 2012

After completion of building shades 5 Adivasi Mahila Gruh Udyog of tribal group started making mango pickle. The group has a total of 12 ladies of which 7 belong to BPL families.

- Name of the secretary: Shardaben Ashokbhai Bheesar
- The above Mandal is registered by District Industries Centre. The license is also obtained for Food Processing. 1800 kg of Mango pickle was produced in the year 2013-14 by the Mandal. 5000 kg of raw mango was sold due to shortage of finance.
- The mandal sells the pickle in the packing of 100 gram, 200 gram and 350 gram.

The cost of 350 gram packet is Rs. 17/- and sale price is Rs. 25/- per packet of 350 gram. The shopkeeper sells it at Rs. 30/-.

SUCCESS STORY - 4

Development of Dairy Project under Vanbandhu Kalyan Yojana

- Grant of project-C.C. D. Project for Adivasi Group Development.
- Name of the beneficiary-Rekhaben Ashokbhai Pawar.
- Name of the village-Manpur, Falia's name: Kotwalia Vansda.
- Project's name: P. G. T. Dairy Project-Vansda.
- Grant given Rs.-(cow-2) 20,000/- loan-23,000/-
- Date of giving cow-first 11/08/2010, second 06/09/2011
- Loan recovery-26,040. Percentage of loan-113%
- Total income of milk sold-Rs. 3,36,202/-
- Present monthly income-Rs. 5340/-
- Source of beneficiary's income-cattle raising farm labour and bamboo work
- Use of income source-House repairing, purchase of motorcycle, T. V. and Dish T.V, Fridge and savings in self help group.

ITEM	INFORMATION
A. Name of the sponsor's Agency	Tribal sub plan office Vansda
B. Name of the implementing Agency	Griserv-BAIF-Vansda
C. Name of the project	P. T. G. Dairy Project-Vansda
D. Period of the project	2008-2014
E. Total No. of Adivasi Group's family	114
F. Total No. of families	41
G. Given Milching animals	65
H. First	41
I. Second	24
J. Total	65
K. Total Loan Rs.	902800
L. Total amount of recovery loan	481847
M. % of loan recovery	53.37%
N. Milk produced total liters.	2,04,136
O. Income from milk	20.62,012
P. Average monthly income per beneficiary	Rs. 5030/-

Halpati Dairy Project Village-Sonwadi, Ta. Gandevi

Name of the beneficiary-Geetaben Rameshbhai Halpati

Name of the project:	Halpati Dairy Project:Navsari	First Asset	One
Period of the project	Year 2012-15	Expenditure of the project	59950/-
Name of the sponsor Agency	Tribal Sub plan Kachari Vansda	Total loan	20,000/-
Name of the implementing agency	Griserv (BAIF) Vadodara	Amount of loan returned	11,000/-
No. of families	Female-1, Male - 1, Children-2	Total milk produced	Ltrs. 1890(270 days)
Status of cow	3 months pregnant	Total income from milk	45360/-

Details of Income and utilization from Animal Husbandry

This beneficiary used to purchase calf in partnership and after crossing, he would keep one calf with him and another cow is given to its owner. Doing this he could have 2-3 cows. After implementation of Tribal sub plan Kachari, Vansda and Griserv (Baif) Vadodara run Dairy Project he got good breaded cow and his income was increased. With this source of income, he runs his family nicely and with his one daughter is studding in B.Sc. Agri, at Sardar Krushi University, Dantivada and elder son is doing his

B.E. Engineering. at Baroda. All this he could do due to animal husbandry and trying to make his children's future bright. He sets a good example for others. He had taken the fullest benefit of the Govt, Project.

SUCCESS STORY – 5 (EDUCATION)

Eklavya Model Boarding School Baartad:

Gujarat state Tribal Development Boarding Educational campus Gandhinagar is an Independent Institute of Development of Tribal Development. Its main aim is to provide higher education to tribal children. For this purpose the department has started Eklavya Model Boarding School, which provides education from 6th to 12th class.

Eklavya Model Boarding School of District Navsari is running at Baartad (Kha.) It is run by Gujarat State Tribal Development Boarding, Educational Campus Gandhinagar. The school has been getting 100% result for last three years.

Adarsh Boarding School:

Gujarat State Tribal Development Boarding, Educational Campus, Gandhinagar is an independent body of Department of Tribal Development, Gandhinagar. Its main goal is to provide higher education to the children of Tribal which provide education from std. 10th -12th.

Adarsh Boarding School Chikhali (Girls)

		No. of students appeared in Exam.	No of passed students.	Percentage
1.	Year 2012-13			
	Class-10	62	51	82.25%
	Class-12	33	13	39.39%
2.	Year 2013-14			
	Class-10	65	52	80.00%
	Class-12	28	19	67.85%
3.	Year 2014-15			
	Class-10	74	70	94.59%
	Class-12	31	25	80.64%

Adarsh Boarding School (Girls) has the facility of 24 rooms with 200 beds (Paatipalang). This school is given a R. O. plant of 300 litres capacity. Adarsh Boarding school has a shortage of 3 teachers (chemistry, physics and Biology) for class 12th science.

4.25 SWOC ANALYSIS FOR AGRICULTURE, ANIMAL HUSBANDRY AND LIVELIHOOD IN NAVSARI

Strength

- More than 57% of the area is net cropped area out of the reported area
- More than 47% of the area is under cultivation
- About 64% of the cultivable land is irrigated.
- Out of net sown area 164.1, the area sown more than ones is 115.2
- About 70% of the rural population depends on agriculture
- More than 90% of agriculture farming is that of cash crops depending on high technology agriculture pattern.
- Out of the total workers more than 53% workers are engaged in agriculture and allied activities
- Increasing area under cultivation of fruit crops and vegetable shows the upbeat growth of agriculture
- Farmers are ready to adopt the new technologies in the sector and they are very progressive.
- Cooperative dairies have played a significant role for socio-economic development of tribal.

Weakness

- Almost 55% of people are non-workers, which are dependent on 45% of working population and as most of the working population is engaged in agriculture sector, the non-workers are indirectly depended on agriculture sector for livelihood.
- Needy people are not much aware about various schemes and programs by Government and therefore the priority section of people cannot get intended benefit.
- Climatic aberrations like uneven distribution of rainfall during monsoon followed by variations in relative humidity affect crop physiology that results in flowering in certain varieties of sugarcane. It was also found that rainfall is negatively correlated with sugar recovery, which indicates nutrients are leached during rain.
- Very less usage of food quality testing laboratory in Navsari[1]
- Nutritional deficiency in animals
- Traditional management of animals

Opportunities

- More area cover under micro irrigation system
- Regular awareness campaigns of Govt. schemes and programs to facilitate people in agriculture and animal husbandry.
- Navsari Agriculture University can assist in addressing the issues pertaining to crop productivity, cropping intensity and agribusiness management.
- Livestock waste can be recycled by many modern ways in order to combat rising energy prices, sustainable agricultural and reduce the environmental threats from traditional livestock waste management practices.
- Biotechnological achievements of recent years have emerged as powerful tool to improve quality attributes of livestock products including milk and meat products. Biotechnological approaches can be employed for improving productivity, economy, physicochemical and nutritional attributes of a wide range of livestock products.
- Best Roses has pioneered 6 hectare greenhouse project in the district which is the largest export-oriented floriculture project in the State. The Company exports to countries such as, Japan, Germany and UK, etc.
- The Poultry Industry has emerged as the fastest growing segment for revenue generation.
- Surat- Navsari is proposed to be developed as an industrial area along the Delhi Mumbai Industrial Corridor (DMIC). This will augment development of textiles, chemicals, pharmaceuticals and food processing industries which are prominent sectors.

Challenge

- Uncertain rains hampering the sustainable expansion of agriculture.
- Increase cropping intensity
- Alleviation of rural poverty
- Volatile cultivation
- Pattern impose risk of returns to farmers
- Unstable and wide fluctuating market price
- Injudicious use of fertilizer &pesticides

CHAPTER – V

WAY AHEAD: CHALLENGES AND OPPORTUNITIES

5.1 EDUCATION & LIVELIHOOD

Navsari is one the progressive districts of the Gujarat State. It has been showing a lot of progress in the areas of education and improving livelihood opportunities for its population. Two of the talukas of the district, Chikhli and Vansada, have the highest incidence of Schedule Tribe population. The government is putting a lot of efforts in terms of providing better education and livelihood opportunities under the Vanbandhu Kalyan Yojana programme. This programme focuses on a holistic development of tribal people in the state. The main objectives are on ensuring all round economic development of tribal population through better living opportunities, education, housing, qualitative and sustainable employment and providing safe drinking water and other basic amenities.

Training programs for carpentry training, garment making & imitation jewelry making are enabling people to increase their daily incomes by about 100-150% there by adding a lot to the standard of living to their lives. Apart from adding income such programs also help people gain confidence in them in terms of their income generating capacity and this further motivates people to work harder for a better future. The government should continue these efforts while ensuring that the funds allocated for the various initiatives are routed well and reach to the beneficiaries in time. Regular inspection via field visits and necessary feedback from the beneficiaries should be continued to ensure the same.

Efforts in terms of encouraging parents to educate their girl child are bearing fruits and that is visible in falling gender gap in terms of literacy. These initiatives like Vidhyalaxmi Bond should be continued along with ensuring that a good number of schools at secondary and higher secondary level are made functional in the district. Also initiatives like Eklavya Model Residential School (Bartad) are helping tribal children to gain education with the safety and security of a residential facility, where they can exclusively focus on learning without worrying about anything else. This also helps improve the results and education level which is very much visible from the results of the students studying in such schools. More number of such schools should be built. Reducing the drop-out at the primary/upper primary level will ensure that the

child goes a long way ahead in terms of education. Growth in terms of numbers of schools in the district is marginal. This needs to be improvised by allowing number of private schools to come into the system but at the same time it needs to be ensured that the fees and the other cost of education is regulated so as to ensure maximum number of children go to school without their parents worrying about the financial burden that high cost of education brings along.

5.2 HEATHCARE

As far as Human Development of Navsari district is concerned one cannot neglect the importance of healthcare facilities. Health and socio-economic development of the district is so closely intertwined that is impossible to achieve one without the other. While the economic development of Gujarat state is gaining momentum over the last decade, our health system is at crossroads. Undoubtedly. Public health has recorded some noteworthy successes over time in Navsari district but a few points are worth discussing here:

Public Health Infrastructure: Sustainable public healthcare requires sufficient staffing and adequate clinical infrastructure. With the increase in district population and fast-growing patient loads, the primary healthcare system in Navsari should provide adequate healthcare coverage. Most importantly, they should fill up the shortfall Sub Centres and PHCs as per the population of the area.

Since the population of Navsari had hitherto been more of BPL families, the rural population will also need to be conditioned towards wider acceptance of modern healthcare. A comprehensive Information, Education & Communication [IEC] strategy thus needs to be formulated for the district as a whole, involving civil society partnerships for health outreach.

Maternal Health in the District:

There are some prominent deterrents in way of reducing maternal mortality, which required more attention.

a. Lack of knowledge of one's rights is also a deterrent in reducing maternal mortality.

b. Adolescents need more focus and need to be incorporated in policy decisions

c. Post natal care is another area which requires a lot of work on.

d. Involving the community was perceived as necessary for effective collaborative efforts towards reduction of maternal mortality.

e. Anemia, high workload, gender discrimination and malnutrition lead to poor maternal health and most of these factors are cultural factors.

Curbing the Menace of Malnutrition:

Case study of Mahuva PHC is established and functioning with strength of adequate, trained and motivated staff and infrastructure and opportunities from government and private pediatricians. But schemes like Mission Balam Sukham face a lot of challenges due to following:

- Referred undernourished children not reaching to facilities due to socio-cultural and other reasons.
- Resistance by beneficiaries for Night stay at Centres due to familial and social customs and beliefs.
- Refusal to be enrolled and drop out after enrolment.
- Child without companions or friends do not feel comfortable.
- Some of them have specific food preferences which is difficulty to meet.
- Under this situation, authorities should take appropriate steps like health promotion and education to combat the challenge of refusal of night stay at the Centres. In case of complication when pediatrician is needed, child can be referred with transport facility to nearby cities where pediatricians are available. Along with this, variety of foods can be served to resolve the issue of food preferences. Social and community leaders can be provided with information of functions of CMTC and involved in health promotion activities.

5.2.1 Other Recommendations:

- To strengthen Rogi Kalyan Samitis and for analysis and understanding of samiti, regular training inputs for upgradation of skills to ensure regular reporting and monitoring, creating a mechanism wherein efficient samitis are awarded should be implemented.
- A village level plan can be presented in Gram Sabha for participatory healthcare practices in each area of Navsari.
- In spite of introduction of so many schemes there are procedural difficulties in accessing the benefits due to too many documents, problem of too many cards for each scheme which leads to confusion, issues of corruption and bribing within these schemes in order to procure cheques and largely the issue of lack of awareness about the various schemes. This should be strictly considered by the authorities.
- The government has to substantially improve the management information system and accountability mechanism so that the health professionals perform their functions adequately. This will require improving management capacities in the health systems at various levels and through training and creating new posts of management positions.
- Ensure quality improvement through standards and accreditations: It was found that only few PHCs were accredited with NABL/NABH in Navsari. The government should set up standards for hospitals and health centres at various levels. It should catalyze the development of a system of accreditation of health facilities in the public as well as in private sector. The accreditation status of the hospitals should be widely disseminated. Quality improvement efforts should also include non-clinical and support services
- Public Private Partnership (Multi-stakeholder partnership): Chiranjeevi Yojana has so far received a momentum. But in past few years, private practitioners are not showing much interest in offering their services. Given the complex nature of health systems and the diversity of needs and expectations from a large heterogeneous population belonging to various socio-economic and cultural groups, no single agency can satisfactorily address the health needs. Hence government, corporate sectors, NGOs and other sectors of societies have to enter

into mutually beneficial partnership to serve the health needs of the poor and the lower income groups. These partnerships have to be well thought out, structured and open to independent assessment to ensure transparency and results. Such partnerships should also be explored in the areas of preventive and promotive healthcare as well as support.

Services such as blood transfusion, ambulance, communication services, medical-social work etc. Other areas of concern are discussed below:

AREAS OF CONCERN FOR REFORMS IN NAVSARI'S HEALTHCARE

Area of Concern	Relevant reforms Needed in Navsari
Non-availability of staff/ Inadequate Staff at Government Healthcare Facilities	➢ Organizational change and policy reforms in recruiting new staff related to Healthcare ➢ Empowerment of nurses and paramedical staff through training and development
Weak referral system	➢ Strengthen communication and transport infrastructure ➢ Behavioral change by adequate training ➢ More awareness regarding health schemes like Janani Suraksha Yojana, Chiranjeevi Yojana etc should be emphasized by more advertisement via mass media and other sources
Poor service delivery	➢ Data based management planning, monitoring, and control ➢ Granting autonomy
Lack of accountability for quality of care	➢ Overall Performance of the health system in which the department tries to makeover the image in general public and stakeholders e-Governance

5.3 RECENT DEVELOPMENT IN AGRICULTURE, ANIMAL HUSBANDRY AND LIVELIHOOD

- Navsari Agriculture University had developed an Android application 'Kisan Mitra' that provides agriculture, horticulture and animal husbandry information to farmers in Gujarati language. This application can be run without internet connectivity.

- In a new trend of vertical farming in green houses, the Navsari Agriculture University (NAU) in Gujarat has successfully proven that cultivation of musk and water melon during monsoons happens to be an off season for the horticulture crop. Total 925 plants can be accommodated in 500 square meter area of a greenhouse which can produce around six tonnes of fruits.
- A concrete plan has been visualized for providing homes to urban poor under the Garib Samriddhi yojana. Gujarat is the only state in the country that has provided housing plots to all the BPL families which come within the 0-16 parameter. A sum of Rs 13,000 crore funds has been established for the welfare of urban poor. Under Ummed programme about two lakh youths have registered themselves and one lakh youth will be given skill development training for generating employment opportunities within one year.
- The staff of forest department in Navsari district adopted 156 malnourished children and 145 out of those kids have now become healthy.
- A new variety of turmeric which is resistant to diseases and high in yield with better curcumin content has been developed by Navsari Agriculture University. The new variety has a yield of 35-40 tonnes per hectare while the traditional Sugandham variety has yield of 15—20 tonnes per hectare. Also the curcumin, content which determines the quality of turmeric, is also better in NAU Turmeric [1.1]
- Bamboo based livelihood and business enterprise project is oriented towards employment and economic development by Centre for Indian Bamboo Resource and Technology (CIBART) in three districts of Gujarat i.e. Tapi, Navsari and Dang. The project is designed to create and develop backward and forward linkages to integrate in the entire value chain of bamboo which includes nursery development, plantations at various levels, product designing and developing, awareness building, branding and marketing. It addresses the entire value chain

[1](2010, may 30). Retrieved october 30, 2015, from The hindu times: http://www.thehindu.com/sci-tech/agriculture/navsari-agriculture-university-develops-new-variety-of-turmeric/article442051.ece

in bamboo, from resource development, management, and treatment, production, marketing and enhancing the livelihoods of Kotwalia community. [2]

- Krishi Vigyan Kendra Navsari celebrated "Technology week programs" and in which various seminars were arranged like Entrepreneurship Development in Inland fisheries, Fruits and vegetables preservation, integrated weed management in agriculture crops, scientific management of cross bred cows, high density plantation of horticulture crops, Use of bio insecticides and fungicide in agriculture crops. About 100 farmers including 26 women have actively participated in the seminar and rectified their doubts by asking certain questions to scientists.
- Women Empowerment fortnight is being celebrated under the leadership of Anandiben Patel the Hon. Chief Minister of Gujarat. As a part of it, Rakhi Mela was organized during 3 to 8 August 2014 at Navsari. There were about 23 different stalls were arranged to exhibit and sale of Rakhis puja materials, coconut and Agarbatis etc.
- The Women empowerment fortnight was celebrated in Navsari District. About 1200 and more women patients were given treatment at about 5 places, in Navsari District, during the women's empowerment fortnight.
- Female patients' treatment camps were organized at various five places. The treatment and medicine to about 1246 women was provided at the places. During the celebration of women's health day in the district, the health checkup drive was arranged for providing health awareness among the Mothers and Female residents in slum and poor areas of the city.

5.3.1 Auxiliary Steps mandatory for the developments in the area are mentioned below:

- Implementation of micro irrigation projects
- Rotation of crops
- Multi cropping
- Preservation and storage of agri-products

[2](n.d.). Retrieved october 30, 2015, from http://dsag.gujarat.gov.in/bamboo-livelihood-business-enterprise-project?lang=Gujarati

- Implementation of top-Tier rural electrification
- Diversification in to high value and non-food crops
- Adoption of new technology and best practices in agriculture
- Alternate methods of farming like contract farming and marketing
- Moving towards a "whole farm approach " in which productivity, environmental and social concerns are addressed in a holistic and integrated manner
- Strengthening and focusing on agriculture research, extension and education
- Special programs for small and marginal farmers like enabling greater access to institutional credit, training and capacity building, support for strengthening and non-farm activities.
- Government's attention to maintaining and building rural infrastructure
- Subsidy programs for credit, fertilizers and irrigation are aimed at smallholder farmers.
- Efforts to improve smallholders' access to institutional finance.
- Training to farmers for improvement of seeds, fertilizers to increase productivity
- Improvement in dairy husbandry practices through increasing the existing level of knowledge of dairy farmers particularly in the areas of feeding, general management and healthcare practices which can be improved through organizing training programs, demonstrations, Kisan Melas, Kisan Ghosthies, exposure visits etc. organized by various government organizations or NGOs.

- Easy and concessional loans to tribal for purchase of livestock.
- Facilities for milk collection from each village, where the cooperative milk society does not exist.
- Increase the reach for Livestock breeding services,
- Facilities for disease diagnostic and referral services,
- Availability of preventive vaccination subsidy,
- Eco-Friendly and modern methods of livestock Waste recycling for enhancing farm productivity
- Training and Awareness about management of SHGs
- Training about various income generating activities for sustainable livelihood and development

5.3.2 Furthermore there is tremendous scope if Navsari district focusses on the following:

- Agriculture processing units especially those based on fruits especially bananas.
- Upgradation and modernization of village level cooperative dairies
- Pearl's Farming
- Agriculture export
- Opening up Cold storages

- Value added agriculture including medical plantation
- Fishery Industry

DEFINITIONS

GPI (Gender Parity Index): Gender parity index (GPI) is ratio of the female-to-male values of a given indicator. A GPI of 1 indicates parity between sexes.

Literate: A person who can read and write with understanding in any language and a person who can merely read but cannot write is taken to be as literate.

Retention Rate: Enrolment in Grade V (minus repeaters) in a year as a proportion to enrolment in Grade I four years back is termed as retention rate at the primary level.

Transition Rate: Number of pupils admitted (new entrants) to the first grade of a higher level of education in a given year, expressed as a percentage of number of pupils enrolled in the final grade of the lower level of education (i.e. Grade V) in the previous year.

Repetition Rate (Grade-specific): Proportion of pupils from a cohort enrolled in a given grade, at a given school year, who study in the same grade in the following school year.

Drop-out Rate: Proportion of pupils from a cohort enrolled in a given grade at a given school year who are no longer enrolled in the following school year. This is calculated by using grade-wise enrolment in 2012-13 and 2013-14 and grade-specific number of repeaters in 2013-14.

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Annexure 1

District wise Registered Births, CBR, Registered Deaths, CDR, Infant Death and Infant Mortality Rate as per CRS,2013

Sr. no.	District	Registered Births	CBR	Registered Deaths	CDR	Infant Death	IMR
1	Ahmadabad	146719	20.2	57897	8.0	5633	38
2	Amreli	29743	19.5	8352	5.5	68	2
3	Anand	39018	18.5	12348	5.9	198	5
4	BanasKantha	87236	27.8	11691	3.7	255	3
5	Bharuch	30488	19.5	11350	7.3	217	7
6	Bhavnagar	65980	22.8	14631	5.0	335	5
7	Dohad	55251	25.8	4616	2.2	139	3
8	Gandhinagar	27332	19.5	8383	6.0	235	9
9	Jamnagar	36502	16.8	12101	5.6	289	8
10	Junagadh	53671	19.4	15173	5.5	58	1
11	Kachchh	50162	23.8	8905	4.2	280	6
12	Kheda	53295	23.0	15395	6.7	174	3
13	Mahesana	43219	21.1	11758	5.7	288	7
14	Narmada	11725	19.7	4267	7.2	70	6
15	Navsari	21411	16.0	10216	7.6	136	6
16	PanchMahals	60522	25.2	8116	3.4	291	5
17	Patan	34130	25.2	6695	5.0	179	5
18	Porbandar	11307	19.2	3801	6.5	34	3
19	Rajkot	85063	22.2	26290	6.9	621	7
20	SabarKantha	63227	25.9	9774	4.0	176	3
21	Surat	99051	16.2	28373	4.6	1564	16
22	Surendranagar	38223	21.6	9229	5.2	190	5
23	The Dangs	7224	15.2	1280	5.6	111	9
24	Vadodara	73202	31.4	28804	6.9	68	8
25	Valsad	29980	17.5	8221	4.8	592	9
26	Tapi	12366	17.5	4946	6.1	263	9
	Gujarat	1266047	20.8	342612	5.6	12464	10

Source: Health Statistics,Gujarat State 2013-2014