

District Human Development Report

TAPI



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

District Human Development Report

TAPI



**GUJARAT SOCIAL INFRASTRUCTURE DEVELOPMENT SOCIETY
GENERAL ADMINISTRATION DEPARTMENT (PLANNING)
GOVERNMENT OF GUJARAT**

District Human Development Report: Tapi

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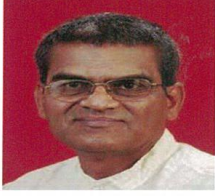
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**The report is prepared by Veer Narmad South Gujarat University
as part of tripartite MoU among
Member Secretary, Gujarat Social Infrastructure Development
Society (GSIDS), District Collector, Tapi and
Vice Chancellor, Veer Narmad South Gujarat University, Surat**





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Date: **13 OCT 2015**

MESSAGE

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

I compliment the United Nations Development Programme under Planning Commission for collaborating with the State Government in preparation of the District Human Development Report of Tapi 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)

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MESSAGE

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

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

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

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



B.C. Patani, IAS



PREFACE

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District Human Development Report of Tapi is prepared to get deeper understanding of the issues at the district level and thus help in formulation of developmental policies through human development prism. District Human Development Report is expected to be input for deliberations of the District Planning Committee which is constitutionally responsible to undertake the preparation of district plans.

Human Development approach focuses on the ability of people to enjoy long and healthy life, ability to acquire knowledge and to be able to have a decent standard of living. The report comprehensively discusses all these aspects of human development at the sub-district level of Tapi.

In the chapter of Introduction it provides an overview of Tapi district. The chapter discusses climatic conditions and seasons in Tapi, demographic characteristics of the district, infrastructure facilities in the district and on tourism avenues. The pattern of demographic characteristics like population, population growth rate, sex ratio, percentage of ST population etc. is examined at taluka level.

The report discussed the status, issues and challenges of education of Tapi district in second chapter. Analysis of literacy rate across gender, region (rural-urban) and social group, along with enrolment and dropouts from schools is presented. Chapter also discussed on education infrastructure like number of schools, access to drinking water and sanitation facilities in school, providing of Mid-Day Meal etc. Alternate schooling system like ashramshala and schools for children of sugarcane cutters details are also presented.

The access to healthcare organizations like CHC, PHC and sub-centres; access to drinking water, sanitation and drainage facilities is discussed in third chapter. The details various water-borne diseases are also discussed in this chapter. Discussion on cases and death due to specific diseases like sickle cell anaemia, leptospirosis, swine flu etc. is also presented in this chapter.

The report has also shown the overview of livelihood opportunities and challenges in Tapi district. Livelihood generated through agriculture, animal husbandry, poultry, fishing, mining, quarrying and small scale industries is discussed in this report. Initiative are taken by the Government to take care of livelihood of old-age people, disabled and widows in the form of various Social Security Schemes are also discussed.

Finally the report has presented the major outcomes, concern areas and suggestions to the Government initiatives to manage those issues.

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

October 2015
Tapi


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R.S. Ninama, IAS



FOREWORD

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Date:

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

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

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

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

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

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


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ACKNOWLEDGEMENT

The District Human Development Report of Tapi is facilitated by the Government of Gujarat and UNDP as a part of their approach to emphasize the importance of Human Development in district planning. The main objective of the preparation of district human development report is to transform the process of development planning with full participation of all stakeholders.

The District Human Development Report is written with warm support and guidance received from the high level government officials, especially Kum S Aparna, Principal Secretary -Planning and Shri B.C Patni, the District Collector, Tapi. Shri Kalpesh Shah, Joint Secretary (Planning),GAD-Planning also gave his incisive comments which significantly improved the quality of work. Their active role helped us to get necessary information from different organs of the government on human development indicators.

We thank Shri K D Vashi, Director & Member Secretary, GSIDS for his encouragement and support. We also acknowledge the support of Shri. S.S.Leuva, Deputy Director, GSIDS and other officers from GSIDS. They were always accessible for the work related to human development report. Shri Ketanbhai Patel, District Planning Officer, has also been proactive throughout the preparation of the report, especially for ensuring that latest data is made available. We also thank Ms Pinki Neogi Mishra SPAC, GSIDS and Mr Kalpesh Patel SPAC, Tapi, for their continuous support and co-ordination throughout the preparation of this report. Assistance provided by the officers of Bureau of Economics and Statistics is also acknowledged with gratitude.

In preparation of the report many institutions, departments, officials and individuals extended their support in various ways. We express our sincere thanks to Commissioner of Police, DDO, District Planning officer, District Statistical Officer, DRDA, Pollution Control Board, BSNL office, District Industrial Centre, District Education Officer, District Health Officer, Officers from Fisheries, Animal Husbandry and Agriculture; and all others who have helped us in preparation of the report by providing necessary information and support despite their busy schedule.

We thank all those who have helped us directly or indirectly in completing our task. We acknowledge responsibility for errors of commission and omission.

We hope that the report is useful to policy makers, administrators, academicians, research scholars and all those who are interested in issues of human development.

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EXECUTIVE SUMMARY

The report is prepared in order to create documentation of the issues in human development at disaggregated level. The main objective of the preparation of district human development report is to transform the process of development planning with full participation of all stakeholders. District Human Development Report aims at getting deeper understanding of the issues at the district level and thus help in formulation of developmental policies through human development prism. District Human Development Report is expected to be input for deliberations of the District Planning Committee for the preparation of district plans.

BACKGROUND

Tapi is located in South Gujarat region. Tapi is located in the Southern part of Gujarat state between 73.5° to 74.23° East(Longitude) and 21.0° to 21.23° North(Latitude). The area of the Tapi district is 3434.64 sq km. The district headquarter of Tapi is Vyara. Tapi comprises 5 talukas – Nizar, Uchchhal, Songadh, Vyara and Valod. Tapi has a moderate climate, ranging from 40° C in the months of March to May to 11° C in the months of December to February. The average rainfall of Tapi district is 813.40 mm.

The population of Tapi district has increased from 7,19,634 in 2001 to 8,07,022 in 2011, a decadal growth rate of 12.10 per cent. This population growth rate has decreased from 14.78 in 1991-2001. This is much lower than the population growth rate of Gujarat (19.30 per cent). The sex ratio of Tapi is 1007, highest among the all districts; more than the state average of 919. The sex ratio of Tapi has increased from 996 in 2001 to 1007 in 2011. Nizar and Uchchhal talukas have a highly favourable sex ratio of 1017 and 1025 respectively. Proportion of ST population of Tapi is 84.18 per cent.

Tapi has good infrastructure facilities. All villages of Tapi are connected to all weather roads and all villages have access to electricity. Despite good road connectivity, the frequency of State Transport buses are less and roads are narrow. This is perhaps one of the reasons of satisfactory growth rate.

The report is organized into five chapters: Introduction to Tapi, Education, Health, Livelihood and The Way Ahead. A brief outline of chapters is as follows:

CHAPTER OUTLINE

Chapter – 1 provides an overview of Tapi district. The chapter discusses climatic conditions and seasons in Tapi, demographic characteristics of the district, infrastructure facilities in the district and on tourism avenues. The pattern of demographic characteristics like population, population growth rate, sex ratio, percentage of ST population etc. is examined at taluka level. Assessment of infrastructure facilities include road length, road type, access to railways, electricity connection and; access to post offices and telephone connections.

Important Points need to be highlighted:

- The climate of Tapi is moderate, which is good for growing sugarcane and cotton. Sex ratio is of Tapi is favourable and that of SR population is highly favorable.
- Villages of Tapi are connected through all-weather roads and all villages have access to electricity

Chapter – 2 discusses the status of education in Tapi district. The chapter discusses literacy rate across gender, region (rural-urban) and for schedule tribes Analysis of enrolment and dropouts from schools is also presented. Discussion on education infrastructure like number of schools, access to drinking water and sanitation facilities in school, providing of Mid-Day Meal etc. Alternate schooling system like ashramshala and schools for children of sugarcane cutters details are also discussed. Success story of school set up by the government under Tribal Sub-Plan is also presented.

Important Points need to be highlighted:

- The rural-urban gap as well as gender gap in literacy in Tapi is less than that in the state.
- There is close to 100 per cent enrolment and close to zero per cent out-of-school children.
- Gender Parity Index is close to 1 and is stable and better than that of the state.
- Number of schools have increased manifold in past 2 years.
- Student-teacher ratio is very favorable between 24-31 students per teacher.
- Most school are equipped with basic physical amenities.
- Alternative schooling system and nivasi camps help increasing literacy as they are specially set up for children on migrant parents.
- Quality of education is good. A large number of students of upper primary could answer the surprise test given to them by the DHDR team.
- Retention rate is increasing, repetition and drop-out rate is reducing and promotion rate shows an increasing trend.

Chapter – 3 presents the status of health. Access to healthcare organizations like CHC, PHC and sub-centres; access to drinking water, sanitation and drainage facilities is discussed in this chapter. The details various water-borne diseases are also discussed in this chapter. Discussion on cases and death due to sickle cell anaemia, leptospirosis, swine flu etc. is also presented in this chapter. These diseases are very specific to Tapi. Various schemes for awareness among people about these diseases, their prevention and cure are discussed in this chapter.

Important Points need to be highlighted:

- CBR is less than state average and so is NRG.P.
- Large proportion of children registered under ICDS are normal (not malnourished).
- Percentage of ANC registration is higher than the state average.
- Institutional deliveries are showing an increasing trend.
- Immunization is for BGC, DPT-3, measles and Vitamin A is more than the state average.
- School health programmes are organized every year.
- BPL families are availing the benefit of RSBY.

- There are very few specialists and private practitioners in Vyara; there is a shortage of medical and para-medical staff in government health care centres.

Chapter – 4 provides overview about livelihood opportunities and issues in Tapi. Livelihood generated through agriculture, animal husbandry, poultry, fishing, mining, quarrying and small scale industries is discussed in this chapter. Initiative are taken by the Government to take care of livelihood of old-age people, disabled and widows in the form of various Social Security Schemes are discussed. Employment generation schemes like MGNREGA, SGSY, etc. are also discussed. The chapter presents various success stories that has helped improving the livelihood of people in rural and interior areas.

Important Points need to be highlighted:

- Quarries could be a major source of employment, next to agriculture.
- Veterinary services in the district to cater to the healthcare needs of cattle and other animals is good.
- Social security schemes are working well in Tapi.
- A lot of work of road building, digging of wells and other infrastructure development work is done under MGNREGA.
- Tapi is a tribal district and large proportion of STs are taking benefits from various housing schemes.
- Sakhi Mandals are very active in Tapi.
- Lijjat papad has generated employment opportunity for women and it has also empowered women by giving them employment.

Chapter – 5 presents major outcomes, concern areas and suggestions to the Government initiatives to manage those issues.

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Abbreviations Used In the Report

<i>ABER</i>	Annual Blood Examination Rate
<i>AIDS</i>	Acquired Immune Deficiency Syndrome
<i>ANC</i>	Anti Natal Care
<i>ANM</i>	Auxiliary Nurse Midwife
<i>AP</i>	Andhra Pradesh
<i>API</i>	Annual Parasite Incidence
<i>APL</i>	Above Poverty Line
<i>ASHA</i>	Accredited Social Health Associate / Activists
<i>ATM</i>	Automatic Teller Machine
<i>ATMA</i>	Agriculture Technology Management Agency
<i>AWs</i>	Angan Wadis
<i>AWW</i>	Angan Wadi Worker
<i>BLS</i>	BaseLine Survey
<i>BMW</i>	Bio-Medical Waste
<i>BOLT</i>	Build, Operate, Lease and Transfer
<i>BOOT</i>	Build, Own, Operate and Transfer
<i>BPL</i>	Below Poverty Line
<i>BSC</i>	Blood Smear Collection
<i>BSNL</i>	Bharat Sanchar Nigam Limited
<i>CAGR</i>	Compounded Annual Growth Rate
<i>CBR</i>	Crude birth Rate
<i>CDPO</i>	Community Development Programme Officer
<i>CDR</i>	Crude Death Rate
<i>CEW</i>	Community Extensive Worker
<i>CHC</i>	Community Health Centre
<i>CIG</i>	Community Interest Groups
<i>CNG</i>	Compressed Natural Gas
<i>COD</i>	Chemical Oxygen Demand
<i>CPCB</i>	Central Pollution Control Board
<i>CRP</i>	Community Resource Person
<i>CSC</i>	Community Sanitary Complexes
<i>DDC</i>	Drug Distribution Center
<i>DDGC</i>	Door-to-door Garbage Collection
<i>DDO</i>	District Development Officer
<i>DF</i>	Dengue Fever
<i>DIC</i>	District Industrial Centre
<i>DLHS</i>	District Level Health survey
<i>DMO</i>	District Medical Officer
<i>DNA</i>	Deoxyribonucleic Acid
<i>DRDA</i>	District Rural Development Agency
<i>DSA</i>	District Statistical Abstract

Abbreviations Used In the Report

<i>DSO</i>	District Statistical Officer
<i>EDPT</i>	Early Detection and Prompt Treatment
<i>EMCP</i>	Enhanced Malaria Control project
<i>EMRI</i>	Emergency management and Research Institute
<i>ESIS</i>	Employee State Insurance Service
<i>EWS</i>	Economically Weaker Section
<i>FA</i>	Folic Acid
<i>FHW</i>	Female health Worker
<i>FIG</i>	Farmer Interest Groups
<i>FSL</i>	Forensic Science Laboratory
<i>FTD</i>	Fever Treatment Depot
<i>FYPs</i>	Five Year Plans
<i>GAD</i>	General Administrative Department
<i>GAIL</i>	Gas Authority of India Limited
<i>GDP</i>	Gross Domestic Product
<i>GIDC</i>	Gujarat Industrial Development Corporation
<i>GMB</i>	Gujarat Maritime Board
<i>GOI</i>	Government of India
<i>GPA</i>	General Practitioners' Association
<i>GPCB</i>	Gujarat Pollution Control Board
<i>GPYVB</i>	Gujarat Pavitra Yatraddham Vikas Board
<i>GSDMA</i>	Gujarat State Disaster Management Agency
<i>GSDP</i>	Gross State Domestic Product
<i>GUDM</i>	Gujarat Urban Development Mission
<i>GWSSB</i>	Gujarat Water Supply & Sewerage Board
<i>HDI</i>	Human Development Index
<i>HDR</i>	Human Development Report
<i>HMIS</i>	NRHM Health Management and Information System
<i>HIV</i>	Human Immunodeficiency Virus
<i>HRD</i>	Human Resource Development
<i>ICDS</i>	Intensive Child Development Scheme
<i>IEC</i>	Information Education Communication
<i>IHHL</i>	Individual Household Latrines
<i>IMA</i>	Indian Medical Association
<i>IMR</i>	Infant Mortality Rate
<i>IOC</i>	Indian Oil Corporation
<i>IPC</i>	Indian Penal Code
<i>IRS</i>	Indoor Residual Spray
<i>IT</i>	Information Technology
<i>LIG</i>	Low Income Group

Abbreviations Used In the Report

<i>LNG</i>	Liquefied Natural Gas
<i>LPG</i>	Liquefied Petroleum Gas
<i>LSIs</i>	Large Scale Industries
<i>MANTRA</i>	Man-made Textile Research Association
<i>MAP</i>	Malaria Action Plan
<i>MDM</i>	Mid-Day Meal
<i>MIS</i>	Management Information System
<i>MLV</i>	Malaria Link Volunteers
<i>MM</i>	Mission Mangalam
<i>MOs</i>	Medical Officers
<i>MOU</i>	Memorandum of Understanding
<i>MP</i>	Madhya Pradesh
<i>MPHS</i>	Male Primary Health Supervisor
<i>MPHW</i>	Male Primary Health Worker
<i>MPO</i>	Modified Plan of operation
<i>MSK</i>	Medvedev-Sponheuer-Karnik
<i>MSMED</i>	Medium, Small and Micro Enterprise Development
<i>MSW</i>	Management of Solid Waste
<i>MW</i>	Mega Watt
<i>NAAQS</i>	National Ambient Air Quality Standards
<i>NACO</i>	National Aids Control Organization
<i>NAMP</i>	National Anti- Malarial Programme
<i>NATP</i>	National Agricultural Technology Project
<i>NCCL</i>	Narmada Cement Co. Limited
<i>NGO</i>	Non-Governmental Organisation
<i>NIV</i>	National Institute of Virology
<i>NMEP</i>	National Malaria Eradicate Programme
<i>NRHM</i>	National Rural Health Mission
<i>NRI</i>	Non Resident Indian
<i>NRLM</i>	National Rural Livelihood Mission
<i>NRLP</i>	National Rural Livelihood Project
<i>NTPC</i>	National Thermal Power Corporation
<i>NUEPA</i>	National University of Educational Planning and Administration
<i>NVBDCP</i>	National Vector Borne Disease
<i>OBC</i>	Other Backward Class
<i>ONGC</i>	Oil and Natural Gas Corporation
<i>Pf.</i>	Plasmodium Falciparum Case
<i>PHC</i>	Primary Health Centre
<i>POY</i>	Partially Oriented Yarn

Abbreviations Used In the Report

<i>PPs</i>	Private Practitioners
<i>PSM</i>	Preventive and Social Medicine
<i>PUC</i>	Pollution Under Control
<i>RCC</i>	Reinforced Cement Concrete
<i>RCH</i>	Reproductive Child Health
<i>RIL</i>	Reliance Industries Limited
<i>RNTCP</i>	Revised National Tuberculosis Control Programme
<i>RTI</i>	Right to Information
<i>RTO</i>	Regional Traffic Office
<i>RWH</i>	Rain Water Harvesting
<i>SARS</i>	Severe Acute Respiratory Syndrome
<i>SC</i>	Scheduled Caste
<i>SEWS</i>	Socially and Economically Backward
<i>SEZ</i>	Special Economic Zone
<i>SFR</i>	Slide Facliparum Rate
<i>SHG</i>	Self-Help Group
<i>SJSRY</i>	Swarna Jayanti Shaheri Rojgar Yojana
<i>SPR</i>	Slide Positivity Rate
<i>SSAM</i>	Sarva Shiksha Abhiyan Mission
<i>SSIs</i>	Small Scale Industries
<i>ST</i>	Scheduled Tribe
<i>STD</i>	Sexual Transmitted Disease
<i>SWM</i>	Solid Waste Management
<i>TB</i>	Tuberculosis
<i>TCGL</i>	Tourism Corporation of Gujarat Limited
<i>TFR</i>	Total Fertility Rate
<i>TT</i>	Tetanus Toxoid
<i>UCD</i>	Urban Community Development
<i>UHC</i>	Urban Health Centre
<i>UN</i>	United Nations
<i>UNDP</i>	United Nation Development Program
<i>UP</i>	Uttar Pradesh
<i>USA</i>	United states of America
<i>VO</i>	Village Organization
<i>VTMS</i>	Vessel Traffic Management System
<i>WASMO</i>	Water and Sanitation Management Organization
<i>WC</i>	Water Closet
<i>WDR</i>	World Development Report
<i>WHO</i>	World Health Organization

CHAPTERS

CHAPTER 1

INTRODUCTION

TO

T_{API}

1. INTRODUCTION



The formation of a new district is a historic event. It is also an opportunity. Tapi is a newly formed district, which bifurcated from Surat district on 27 September 2007, with its headquarters at at Vyara. Tapi district largely comprises tribal population, living in rural areas. The social customs, traditions, beliefs and even the dialect of Gujarati language of people living in rural areas of the Tapi district, differ to a large extent from the mainstream population living in nearby urban centres. Three talukas¹ – Nizar, Uchchhal and Songadh – out of total five talukas of Tapi district were identified as backward by the Cowlagi Committee. This is in stark contrast with Surat, one of the flourishing and affluent urban centres in the vicinity.

The bifurcation of Surat district and formation of Tapi district took place not only for administrative convenience but for other reasons as well. Surat was known for its affluence since the prehistoric times. Surat has the geographical advantage of being near to the sea, making it a hub of exports of valuable items. Surat flourished during the Moughal and the British regime but the nearby areas with tribal population remained detached and therefore, these areas are still underdeveloped. Thus, it became necessary to plan separately for development of this region.

The government of Gujarat, under the decentralized planning, has started focusing on district-level and taluka-level planning and policy formulation. It would be more appropriate to have a different and a separate plan for development of the tribal district. The geographical features and the demographic profile of the district would provide insight for development. The present infrastructure facilities in the district would give an idea about the areas in which infrastructure facilities are required to be developed and strengthened. This chapter gives an overview of the physical features, administrative set-up, demographic profile and existing infrastructure facilities in the Tapi district.

Historically, Vyara (the present district headquarters of Tapi) was known as the eastern corridor of Guajrat. Vyara was one of the flourishing villages of historical Antaahpur Paragana (state). However, that ancient Vyara, which was then known as Vijaynagar got completely destroyed by

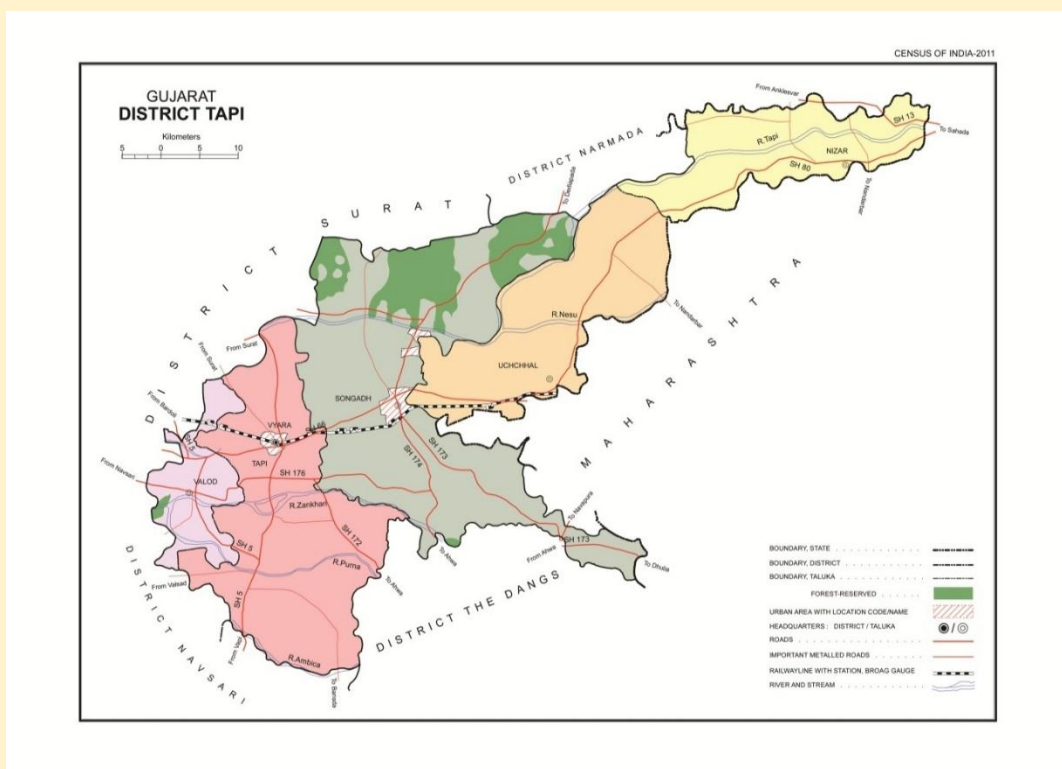
¹ Blocks are called Talukas in Gujarat.

devastating fire. The people, who survived, migrated to the banks of river Mindhola and the area that developed over a period of time is the Vyara of present times.

1.1 PHYSICAL FEATURES

Tapi district is one of the 26 districts of Gujarat state in western India. Tapi is located in South Gujarat, between 73.5° to 74.23° East (Longitude) and 21.0° to 21.23° North (Latitude). The area of the Tapi district is 3434.64 sq km. The map of Tapi district is shown in Figure 1.1:

FIGURE 1.1: MAP OF TAPI DISTRICT



Source: Census of India - 2011, Registrar General of India

The Tapi district comprises five Talukas: Vyara, Songadh, Uchchhal, Nizar and Valod. These five talukas comprise 523 villages out of which 450 villages are inhabited.

Satpuda mountain range is situated on the northern frontier and Sahyadri mountain range is located on the southern frontier of Tapi district. Tapi river flows from northern parts of Tapi district. Rivers Zhankhri Midhola and Purna flow from the central parts of the district. River Ambika flows from southern regions of Tapi district. These rivers are major source of irrigation. Tapi is one of the perennial rivers of India. A dam is constructed on river Tapi in Ukai village of Songadh district. The water stored in the reservoir is also a major source of irrigation.

The economy of Tapi district is largely agrarian. The chief crops of Tapi district are Paddy (Dangar), Sugarcane, Jowar, Groundnut and Bananas (Kel). There are dense bamboo forests in the district. Tapi is the home to the natural habitats of many wild animals including tigers, lions, snakes, sloth bear etc.

1.2. ADMINISTRATIVE SET-UP

The district headquarter of Tapi is Vyara. Tapi comprises 5 talukas and the district collector looks after the general administration, collection of land revenue, settlement of land disputes, civil supplies, mid-day meal scheme etc. at district level. Mamlatdar takes care of land development, revenue collection, and law and order. Administration of law and order is taken care of by the Superintendent of Police. An officer is designated for the developmental activities in each sector of the economy. The details of Tapi district are given in table no 1.1:

TABLE 1.1: ADMINISTRATIVE SET-UP OF TAPI

Sr. No.	Heads	Nos.
1	Area (Sq. Kms.)	3434.64
2	No. of Talukas	5
3	Prants	2
4	Municipal Corporations	0
5	Municipal Towns	2
6	Panchayats	284
6.1	<i>Taluka Panchayats</i>	5
6.2	<i>Gram Panchayats</i>	284
7	Villages	523

Source: Census of India - 2011, Registrar General of India

One integral and important component of administration is the Panchayati Raj. In Gujarat, the system of Panchayati Raj was introduced in 1963. This is a three tier pyramid structure with the District Panchayat at the top most tier, The Taluka Panchayat at middle level and The Gram (Village) Panchayat at the base of the pyramid. The role of The Gram Panchayat is to provide facilities for primary education, drinking water, electricity, construction and maintenance of roads, bridges and similar developmental activities. The Gram Panchayat has to see that the benefits of the important development programmes planned and implemented by the higher authorities percolate down to the neediest people.

In Tapi district, it has 284 Gram Panchayat and 2 *nagarpalikas* (Municipal Towns). Gram Panchayat is constituted for the local area having population less than 10000.

1.3 CLIMATE

The climate of Tapi district is characterized by hot summers and cold winters. The months of summer and winter in Tapi district are March to May and December to February respectively. The humidity in atmosphere is less. The months of monsoon in Tapi district are June to September.

The maximum temperature reaches around 40° C in the months of March to May and the lowest temperature is around 11° C in the months of December to February. Winds are light and moderate in the months of March to May and become stronger in the months of monsoon. These winds are predominantly from west to east. During winter, the winds change their direction and blow from north-east direction. The average rainfall of the Tapi district is 813.40 mm².

1.4 DEMOGRAPHIC CHARACTERISTICS

1.4.1 Population & Sex Ratio:

The population of Tapi district has increased from 7,19,634 in 2001 to 8,07,022 in 2011, a decadal growth rate of 12.10 per cent. This population growth rate has decreased from 14.78 in 1991-2001. This is much lower than the population growth rate of Gujarat (19.30 per cent). There are wide variations in population growth rate across talukas. Valod has the lowest population growth rate of 3.90 and Nizar has maximum growth rate of 23.30 per cent.

TABLE 1.2: POPULATION AND DECADAL CHANGE BY RESIDENCE AND GENDER

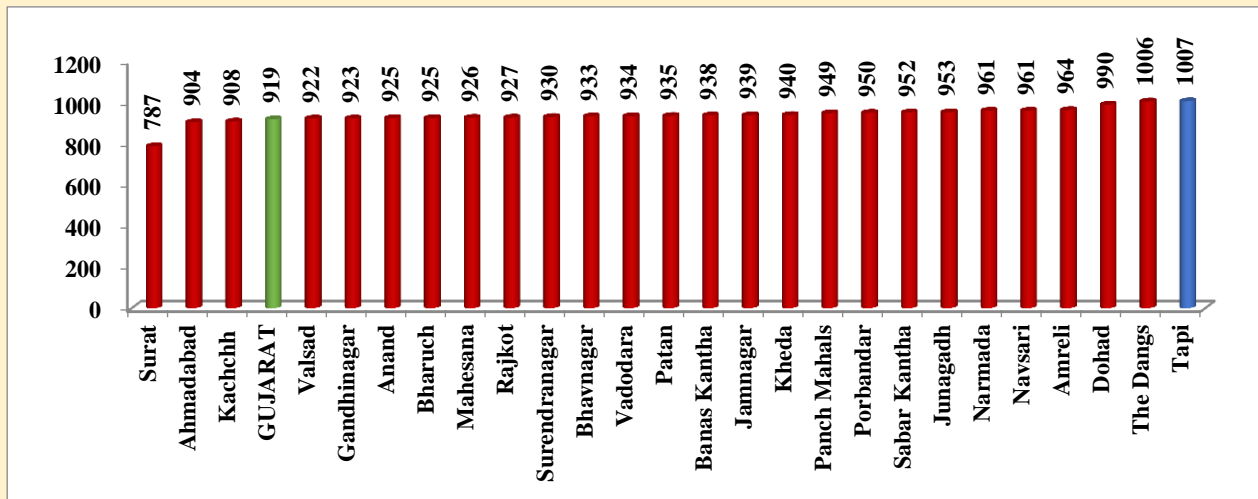
District/Talukas	Total Population		% of Decadal Change	Sex Ratio	
	Total		Total		
	2001	2011	2001-2011	2001	2011
Gujarat	50671017	60439692	19.30	920	919
Tapi	719634	807022	12.10	996	1007
Nizar	105385	129969	23.30	1023	1017
Uchchhal	73042	88416	21.00	1017	1025
Songadh	204270	229782	12.50	984	995
Vyara	249810	268289	7.40	997	1012
Valod	87127	90566	3.90	974	988

Source: Census of India – 2001 & 2011, Registrar General of India

² As per data given by the Collector Office to the Director of Relief, Government of Gujarat as on October 31, 2014.

The sex ratio of Tapi is 1007, highest among the all districts (Figure 1.2); far ahead of the state average of 919. The sex ratio of Tapi has increased from 996 in 2001 to 1007 in 2011. Nizar and Uchchhal talukas have a highly favourable sex ratio of 1017 and 1025 respectively. The details of population and decadal change in population is shown in below table (Table No. 1.2).

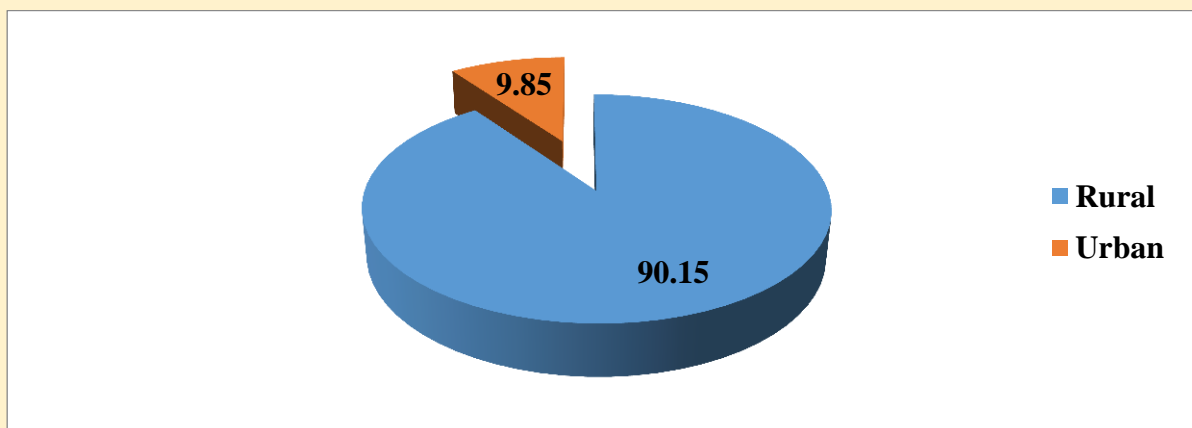
FIGURE 1.2: DISTRICT WISE SEX RATIO



Source: Census of India - 2011, Registrar General of India

As per census 2011, the rural population of the district is 7,27,535 while urban population is only 79,487. The percentage of rural-urban population is summarized in Figure 1.3, which shows that the district is dominated by rural population. If we consider the rural-urban scenario of a decade ago, it shows the scenario was almost same (as per Census-2001 Rural Population was 90.34 per cent while urban population was 9.66 percent). Which implies, the rapid urbanization of the State is rarely affected the district called Tapi.

FIGURE 1.3: PERCENTAGE OF RURAL URBAN POPULATION OF TAPI DISTRICT



Source: Census of India - 2011, Registrar General of India

1.4.2 Child Population:

The child population in the district has reduced by 10 per cent during the 2001-2011 decade. This is in contrast to the state growth rate, which is positive (3.30 per cent). This means that the growth rate in overall population could be because of in-migration from other districts or because of increase in life expectancy. Highest reduction (-17.34 per cent) in child population growth is observed in Valod. On the other hand, Nizar is the only taluka to have a positive growth rate of 6.1 per cent of child population, which is more than the state's average. Talukas with urban centres show a very high reduction in child population growth rate where the rural areas show either a low reduction or an increase in child population growth rate.

As per Census-2011, Child sex ratio of Tapi is 953, which is the second highest among all districts of Gujarat. This has marginally improved over the last decade (in 2001, it was 951). Child Sex ratio is minimum in Valod (905) and maximum in Uchchhal (975). The details of child population, its growth rate and sex ratio are given in table 1.3.

TABLE 1.3: CHILD POPULATION (0-6 YEARS) AND DECADAL CHANGE AND SEX RATIO

State / District / Taluka	Child Population (0-6 years)		% of Decadal Change	Sex Ratio (0-6)	
	Total		Total	2001	2011
	2001	2011	2001-2011		
Gujarat	7532404	7777262	3.25	883	890
Tapi	99008	89075	-10.03	951	953
Nizar	15522	16464	6.07	937	933
Uchchhal	11073	10783	-2.62	997	975
Songadh	29524	26304	-10.91	947	962
Vyara	32036	26553	-17.12	947	963
Valod	10853	8971	-17.34	944	905

Source: Census of India – 2001 & 2011, Registrar General of India

1.4.3 Demography of Various Social Groups:

A large proportion of the population of Tapi district are adivasis. *Adivasi* literally means aborigines. Today they are known as tribal population or people belonging to schedule tribes. These tribals are actually aborigines and are found to live in these areas since prehistoric times. Tribals are categorized further according to their communities. The tribal of Tapi district belong largely to seven such communities: Choudhari, Gamit, Vasava, Kotwalia, Bhil, Valvi and Padvi.

Choudharis are found in all the five talukas of Tapi district. They are said to be the descendants of Rajputs and Bhils. Gamits are found largely in Uchchhal, Nizar and Valod talukas of Tapi. They are said to be the sub-caste of Bhils. Vasavas are found in Uchchhal, Nizar and Songadh

talukas of Tapi district. Dhodias are found largely in Songadh taluka. Kotwalias are found to live in the hilly regions of Tapi district. Their main occupation is to make articles out of bamboo and other forest produce. They are also into agriculture labour and sugarcane cutting. Halpatis are found in almost all talukas of Tapi. Their main occupation is to till the lands of *Zamindars* (landowners).

It can be said that despite being categorized as tribals or aborigins, these tribes are heterogeneous in terms of culture and tradition. Thus, it would be appropriate to have different policy for upliftment of each of these tribes. The caste wise bifurcation of population, its growth rate and sex ratio for each taluka of Tapi district are given in table 1.4 and table 1.5.

TABLE 1.4: SCHEDULE CASTE POPULATION IN THE DISTRICT

State/ District/ Taluka	Scheduled Caste Population		% of Decadal Change (SC)	% of SC Pop. to Total Pop.	Sex Ratio (SC)		
	Total		T	T	T	R	U
	2001	2011	2001-2011	2011	2011		
Gujarat	3592715	4074447	13.41	6.74	931	940	919
Tapi	8385	8168	-2.59	1.01	973	974	973
Nizar	1878	2261	20.39	1.74	989	989	0
Uchchhal	193	114	-40.93	0.13	900	900	0
Songadh	2732	2286	-16.33	0.99	972	1033	961
Vyara	2629	2519	-4.18	0.94	985	979	999
Valod	953	988	3.67	1.09	922	922	0

Source: Census of India – 2001 & 2011, Registrar General of India

TABLE 1.5: SCHEDULE TRIBE POPULATION IN THE DISTRICT

State/ District/ Taluka	Scheduled Tribe Population		% of Decadal Change (ST)	% of ST Pop. to Total Pop.	Sex Ratio (ST)		
	Total		T	T	T	R	U
	2001	2011	2001-2011	2011	2011		
Gujarat	7481160	8917174	19.2	14.75	981	984	952
Tapi	601114	679320	13.01	84.18	1022	1022	1020
Nizar	83843	105043	25.29	80.82	1033	1033	0
Uchchhal	71084	86693	21.96	98.05	1029	1029	0
Songadh	170464	195103	14.45	84.91	1012	1012	1016
Vyara	211611	227613	7.56	84.84	1025	1025	1024
Valod	64112	64868	1.18	71.63	1013	1013	0

Source: Census of India – 2001 & 2011, Registrar General of India

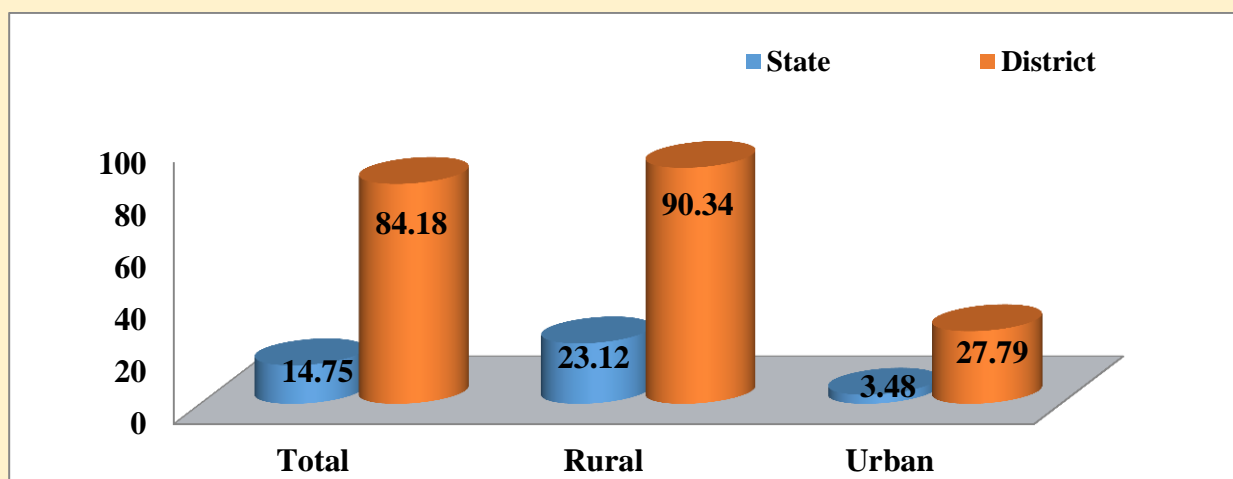
It can be seen from above tables that Gujarat state has 6.74 per cent Schedule Caste (SC) population where as in Tapi district it is 1.01 per cent only. Uchchhal has minimum (0.13) SC population among all talukas of Tapi and Nizar (1.74) has maximum. The sex ratio of SC population in Tapi is 973, which is greater than that of the state, which is 931. Sex ratio, albeit skewed, is maximum in Nizar (989) and minimum in Uchchhal (900).

As already stated before that Tapi is a Schedule Tribe (ST) population dominated district (Figure 1.3). In Gujarat, the percentage of ST population is 14.75 per cent where as in Tapi it is 84.18 per cent (figure 1.4). As discussed earlier, Tapi still comprises the population of its aborigins. Uchchhal, with 98.05 per cent of ST population having the highest ST population among the all talukas while Valod with 71.63 per cent of ST population having the minimum ST population of the district.

The growth rate of ST population is 13.01 per cent which is lower than that of the state (19.20 per cent). Maximum population growth rate for STs is in Nizar (25.29 per cent) and minimum is in Valod (1.18 per cent).

Sex ratio among ST population (1022) is more than the overall sex ratio as well as the sex ratio of SC population. Not only that, it is much higher than the sex ratio of STs of the state (981). Among talukas, highest sex ratio is observed in Nizar (1033) and lowest in Songadh (1012), but still above 1000.

FIGURE 1.4: PERCENTAGE OF ST POPULATION IN GUJARAT AND TAPI



Source: Census of India –2011, Registrar General of India

1.5 INFRASTRUCTURE

Infrastructure development, if not precondition, is necessary for economic growth. Poor infrastructure acts as a constraint for accelerating economic growth. This section discusses the state of infrastructure in Tapi district.

1.5.1 Transport: Roads and Railways

Well-developed Transport system, forms the backbone of a developing economy and it plays a crucial role in the development process. The increase in the economic activities, mobility and movement of goods and passengers registers manifold growth which demands a good transport infrastructure. A well-developed transport system can have many positive externalities. The access to villages having connectivity through bus or railway line can increase the importance of that village. It can attract many economic activities and even industries due to easy accessibility. People residing in that village may even commute easily to nearby villages and urban centres for the education and employment. It makes the commuting easier to get goods and services of regular use at competitive prices from nearby urban centres and can also create market for the products produced in the village at lower costs and sell them at competitive prices. Here, we have discussed progress made in road and railway in Tapi district. Some comparison will be made with other states or region, wherever possible.

Roads

Tapi is well connected with various locations within state and outside through a network of national and state highways. Vyara is connected to Surat at a distance of 62 km covered by National Highway number 6. It is also connected to Mumbai and Delhi via National Highway Number 8. The total road length of Tapi district is 2415.72 km .

TABLE 1.6: CLASS WISE ROAD LENGTH AS ON DECEMBER 31, 2014

Road Type	Road Length (km)	% to Total
Total	2415.72	
National Highway	15.16	0.63
State Highway	335.59	13.89
Major District Roads	381.24	15.78
Other District Roads	161.38	6.68
Village Roads	1522.35	63.02

Source: Executive Engineer, R & B Panchayat, Tapi (Vyara) and Executive Engineer, R & B (State), Tapi (Vyara)

Above table shows that out of total length of roads in Tapi district, National highways are 15.16 km (only 0.63 percent) & State highways are 335.59 km which occupied around 14 percent of the total road of the district. Major district roads are 381.24 km (15.78 per cent) and other district roads are 161.38 km (6.68 per cent). Total village roads are 1522.35 km. which occupied major portion (i.e 63.02 per cent) of the total road. All village approach roads are metaled roads and most of the village internal roads are also metaled roads.

A comparison of talukas of Tapi district on length of pukka and kachcha roads is shown in 1.7. It shows that the length of metaled roads is highest in Vyara with 850.38 km and that of Uchchhal is lowest with 190.44 km.

TABLE 1.7: TALUKA WISE ROAD LENGTH AS ON DECEMBER 31, 2014

Taluka	Road Length (in km) Pukka ³
Tapi	2415.72
Nizar	247.13
Uchchhal	190.44
Songadh	799.17
Vyara	850.38
Valod	328.61

Source: Executive Engineer, R & B Panchayat, Tapi (Vyara) and Executive Engineer, R & B (State), Tapi (Vyara)

Gujarat State Road Transport Corporation (GSRTC) provides bus facilities to all the villages of Tapi district. However, in most of the villages, the buses come only twice a day and therefore, auto rickshaw, six seater auto rickshaw (*Chhakado*) and private two wheelers are gaining popularity. Due to insufficient industrial development in Tapi district, employment opportunities in transportation sector are very less.

Creation of infrastructure does not guarantee its effective usage. Public transport in rural areas despite metaled roads is a challenge. In spite of that, the expansion of road network has played dominant role in development of rural area. The road network provides an important linkage between rural and urban centres. Road linkages play crucial role in the marketing of agricultural produce, purchase of agricultural produces, purchase of agricultural and consumable articles, access to school, college and hospitals. Indirectly it promotes non-farm activities also. Moreover,

³ Both Pukka (Metaled) and Kachcha roads are as per Census definitions.

it reduces burden on urban centres by preventing migration of population, since people prefer to commute instead of migration. Benefits accruing from expansion of road network are indisputable. Width of roads, traffic management, indicators / signals are areas of challenge in road infrastructure. Strict enforcement of traffic laws can enhance the benefits accruing from creation of road infrastructure considerably.

Railways

During British rule railways played a vital role in many ways. This mode of transport is quicker and cheaper compared to other modes of transport. Primarily, railways are suitable and useful for transportation of bulky and heavy commodities like coal and steel.

Railway has played a vital role in supporting economic development of area along Bombay - Ahmedabad railway line. Railway is the most suitable mode of long haul freight movement in bulk, long distance inter-city passenger traffic and for mass rapid transit suburban systems. Rail system has a crucial role to play to increase access to the ports. A number of existing ports are being modernized to meet increasing demand for port transport. It will be essential to provide broad gauge rail link to some of these ports.

Connectivity through railway line is also an important parameter of infrastructure development. A village connected with railway line is likely to have more economic activities than a village not connected with it. It provides access to nearby urban areas as well as other developed villages for the purpose of employment, business etc. Accessibility to better schools, colleges, education centres, health care facilities etc. becomes easy because of railways. Industrial development is possible in those villages which are connected through railways.

Almost all talukas of Tapi are well connected through rail network. Vyara is well connected with all the major cities through the Tapti valley line. In Vyara, at present there are two types of railway lines⁴ – broad gauge and narrow gauge. Most of the cities, towns and villages are connected through broad gauge line. Narrow gauge is gradually getting replaced by the broad gauge lines. So, if a village is connected through narrow gauge lines, its accessibility becomes difficult but still it is likely to be economically more active than a village without a railway line. Vyara and Navapur are railway stations. The length of railway line is 95 kms from the nearest junction Udhana till Navapur.

⁴ There are no meter gauge lines in Tapi district.

1.5.2 Energy Sector

Energy is demanded by all the sectors of the economy like industry, agriculture, transport and even household. Here, we intend to concentrate on access to electricity in Tapi district. It is well recognized that electricity is one of the most important elements of infrastructure for the development of agriculture, and industries in the state and its contribution to the economic growth is obvious. Per capita income indicates the degree of affluence of the state; similarly, per capita consumption of energy reflects development and prosperity of the state. We endeavour to make an inquiry into various aspects of electricity sector of the state.

In Gujarat, the situation of power sector is relatively good. Even in Tapi district all villages are electrified after 1990-91, hence all villages are Jyotirgram villages. Tapi has well developed network of sub-stations and power stations in the district to cater to the requirement of electricity for industrial and residential purpose. There are four power stations in the district – one Thermal Power, two Hydro-Power and one Atomic Power stations. The details of power station wise capacity installed is given in table 1.8 and percentage contribution of each power station for generating power is given in figure 1.5 respectively:

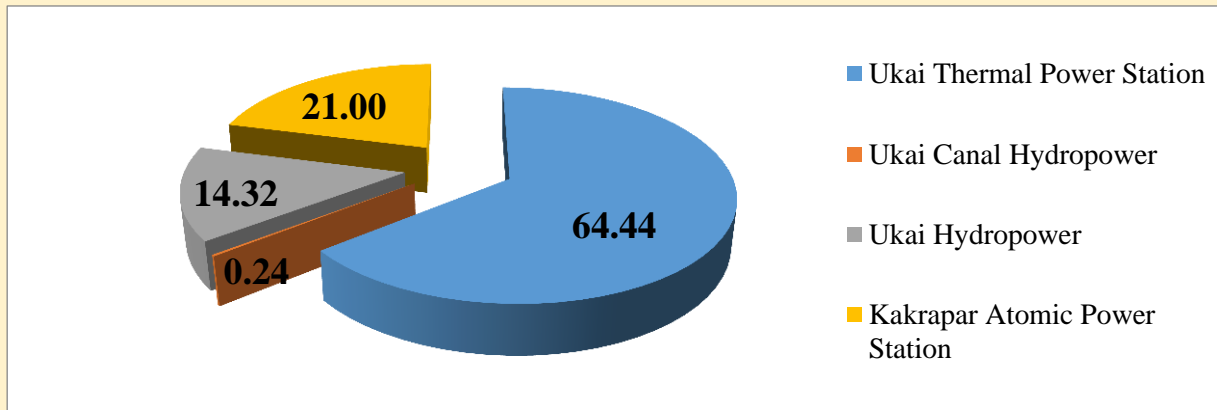
TABLE 1.8: POWER STATION WISE INSTALLED CAPACITY AS ON DECEMBER 31, 2014

Power Station	Installed Capacity (In Mega Watt)
Ukai Thermal Power Station	1350
Ukai Canal Hydropower	5
Ukai Hydropower	300
Kakrapar Atomic Power Station	440
Total Energy Generation	2095

Source: Executive Engineer, DGVCL, Tapi

Thus, the district generates a total of 2095 MW of electricity among which Thermal Power Station is contributed with around 65 per cent of Installed capacity, followed by atomic power which is having around 21 per cent of Installed capacity to the total installed capacity. Hydro power has very minimum capacity (0.24 %) to the total capacity (figure 1.5).

FIGURE 1.5: POWER STATION WISE INSTALLED CAPACITY IN PERCENTAGE



Distribution of Electricity:

It is also important to examine the distribution of electricity with the capacity of generates of electricity. Table 1.9 gives the details of households having access to electricity and if not, what are the other sources of lighting used by them.

TABLE 1.9: PERCENTAGE OF HOUSEHOLDS BY MAIN SOURCE OF LIGHTING

State/ Dist.	T/R/U	Electricity	Kerosene	Solar Energy	Other Oil	Any Other	No Lighting
Gujarat	T	90.41	8.08	0.13	0.21	0.21	0.96
	R	84.98	12.85	0.21	0.31	0.29	1.36
	U	97.19	2.12	0.04	0.10	0.11	0.45
Tapi	T	81.02	17.58	0.09	0.20	0.21	0.90
	R	79.70	18.90	0.10	0.20	0.20	0.90
	U	93.69	4.95	0.04	0.16	0.29	0.87

Source: Census of India –2011, Registrar General of India

As per Census-2011 in Gujarat state, 90.41 per cent Household (HH) have access to electricity whereas in Tapi district, 81.02 per cent of households have access to electricity. It can also be seen that percentage of urban households having access to electricity are higher than percentage of rural households having access to electricity in Tapi district as well as in Gujarat state. People in rural area are dependent on kerosene as the 2nd source of lighting, who do not have access to electricity. Other sources like solar energy or other types of oils are rarely used. Government is taking steps to install solar street lights to actively tap the solar energy and reduce the

dependence on electricity. Moreover, use of wind for power generation is also actively considered by the Government.

1.5.3 Communications

Communication is intricately woven with everyone’s life. The need for communication could have been primarily to express ones’ basic needs. Communication is crucial for security purposes. The primitive communication methods were used to indicate any probable danger or threat to oneself or to the concerned community. Two major modes of communication are posts and telecommunications.

Posts

The invention of papyrus, the modern day paper and using of homing pigeons gave the concept of postal system. There are 148 post offices – including main office, sub-offices and branch offices in Tapi district. Talukawise post offices per lac population are given in table 1.10.

TABLE 1.10: TALUKA WISE POST OFFICES AS ON DECEMBER 31, 2014

Dist/Taluka	Number of Post office	Post Offices per lac Population
Tapi	148	20.57
Nizar	15	14.23
Uchchhal	17	23.27
Songadh	28	13.71
Vyara	70	28.02
Valod	18	20.66

Source: Main Post Office, Maliwad, Vyara

It shows that maximum post-office branches are in Vyara (70 post offices). It is very natural since Vyara is the district headquarter and urban centre. Songadh, which is also an urban centre, is having the second highest number of post offices (28). Nizar, Uchchhal and Valod have more or less the same number – 15, 17 and 18 respectively. Effectiveness can be judged through post-offices per lac population.

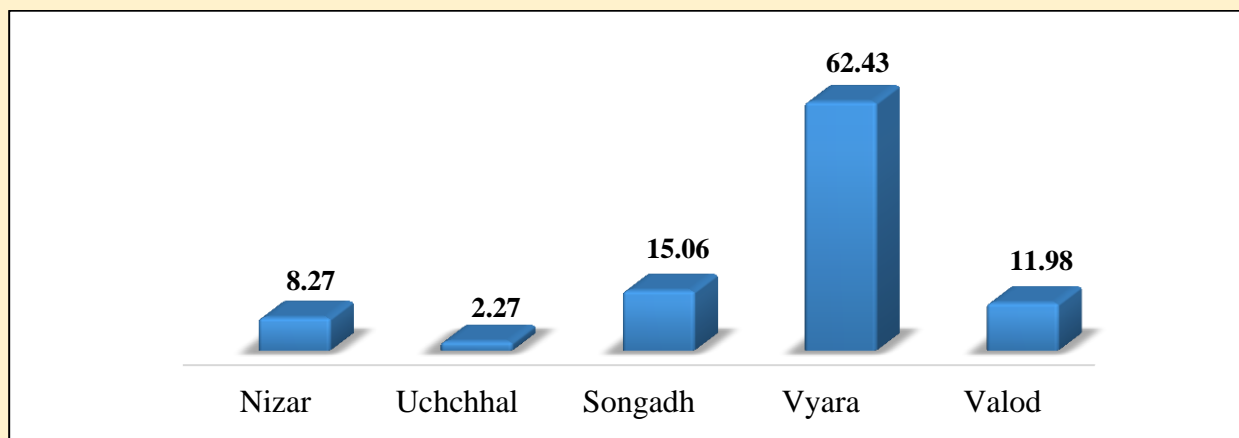
Post office per lakh population is a better development indicator which shows the accessibility of the post offices. Here also Vyara is in advantageous position being an urban district with around

28 post offices per lakh population while in Songadh & Nizar, Post offices per lac population are around 14.

Telecommunications

Telecommunication sector is important for several reasons. For households telecommunication services can be useful for social networking, domestic work for buying consumables, booking tickets, net banking etc., emergency calls such as to police, ambulance etc. Telecommunication services might be useful for marketing, Customer Relationship Management (CRM), interaction with suppliers, teleconferencing, administration, disaster management etc. Expansion of telecommunication infrastructure will have more than proportionate impact on economic development because telecommunication infrastructure is characterized by network externality and therefore, every additional user of telecommunication services benefits the existing users. The information on number of exchanges and Direct Exchange Lines (DEL) in Tapi district for is shown in figure 1.6:

FIGURE 1.6: PERCENTAGE OF LANDLINE CONNECTIONS IN TAPI (AS ON DECEMBER, 2014)



Source: Sub Divisional Engineer, BSNL, Tapi (Vyara)

As shown in above figure, Vyara has maximum share of landline connections (62.43 per cent) and Uchchhal has minimum share of landline connections (2.27 per cent) out of the total landline connections in the district. This is because Vyara is the districts headquarter. All government offices are connected with landline connections. Moreover, its proximity to Surat and connectivity to Maharashtra makes Vyara and important urban centre. Uchchhal is identified by Cowlagi committee as backward taluka. Thus, there is scope for some development in this sector.

1.6 TOURISM AVENUES

Songadh Fort:

Songadh is located at the foot of Solitary Mountain which can be seen from the miles around. Songadh has very good road links with Surat to its West and state of Maharashtra to its East. Songadh Fort was built by the founder of the Gaekwad dynasty, Pillaji Rao Gaekwad between 1729-1766.



Songadh Fort

It was built deliberately on top of the high hill as a vantage point to keep an eye on enemies, the fort is also a brilliant example of Ancient architecture where influence of both Mughals and Marathas are evident.

Vyara and Songadh are known for dense forests with major production of bamboos. Central Pulp Mills which is one of the integrated Pulp and Paper Mills of J. K. Paper Limited, is situated in Songadh Taluka of Tapi district. Central Pulp Mills produces branded papers. It is a leading player in the Fine Papers and Packaging Board segments.

Ukai Dam Reservoir:

Ukai dam is the prime sources of water across the state and is also of national importance. Ukai Thermal Power Plant is located near Ukai Dam on Tapi River in Tapi district. It has an installed capacity of 1350 MW. Ukai Canal Hydropower and Ukai Hydropower have a total installed capacity of 305 MW.



Ukai Dam

Padamdungri Ecotourism Campsite:

Padamdungari is a campsite located at about 30 km from Vyara town, and 8 km from Unai village. It is situated amongst the Sahyadri ranges, by the river Ambica. Treks, trails, winding up and down the hillocks, sunset activity, observation towers, relaxing woodlands, and medicinal groves are proposed attractions when you visit Padamdungari. The scenic site has deep, dense, multi-storied forests, genetic diversity, rocky, undulating and enriched landscapes. The fauna consists of big cats, lesser canines, herbivores, birds, reptiles, aquatic animals.



Padamdungari

The campsite consists of Tourist huts, a reception cum interpretation centre; other facilities include nature trails and good approach roads. A visit to nearby religious places like Chand-surya, Unai Hot Springs and Ghusmaai temples, Waghai botanical gardens, timber workshop, Vansda National Park and Shabri Dham is also possible. Activities like tubing, rafting, floating etc. on river Ambika can also be planned.

Ashwashala near Doswada Dam and Doswada Reservoir with Songadh Fort in Background:



Songarh Fort in Background

Other key tourist destinations include Gaumukh near Songadh fort, Doswada Dam and Hindustan Bridge. Religious tourism attractions are Rokadia Hanuman temple, Parshuramji and Suryatapeshwar temples, Kalyanraiji temple, Gyatrimata temple, saibaba temple, Firanji Mataji – Jalaram temple and Mari Mata temple. Tourism Corporation of Gujarat Limited (TCGL) has undertaken initiatives to develop Gaumukh. TCGL has constructed Gaumukh temple road, tourism gate and one main gate near the site. Facilities for drinking water, sanitation and illumination (by installing solar street lights) are made available at this tourism site. Tourism huts are developed for overnight stay and a garden is developed at the site.



Gaumukh

Similar facilities are created by Gujarat Pavitra Yatradham Vikas Board (GPYVB) at Devlimadi, Devalpada in Songadh.

A check dam is built at Doswada, which is more than 100 years old. Very close to the check dam is the ancient building of Gaikwads. Originally, the building was Ashwashala (stable) for Gaikwad’s horses and now under the Tribal Sub-Plan, a large amount is allocated for developing the Ashwashala as a tourist attraction. However, even today it lies in dilapidated condition. If

this Ashwashala is well-maintained and provision for boating is developed in the reservoir, the place has a very good potential to be developed as a tourist destination. The place is very close to Vyara and is easily approachable by private vehicle or locally available transport like autorikshaws. TCGL has taken initiatives to develop this place but proper maintenance and publicity of the site can attract tourists.

Government has done developmental works for encouraging tourism in Gunasada, Gavalan and Doswada. Over and above this, TCGL has undertaken developmental works in Dhareshwar Mahadev Temple in Uchchhal and Devmogra Mata nu Mandir in Bhadbhunja, Uchchhal.

Banyan Tree of Ghaata Village:

This village is situated at a distance of 15 km from Vyara. The banyan tree located on the outskirts of the villages is estimated to be around 350 to 400 years old. The size of this tree is so large that it becomes difficult to identify the original trunk. The human figure emerging out of the interconnected trunks and branches is believed by the local people to be the GOD (vad dada).

Ghodjatra Fair:

Every year, this fair is organized on the full-moon day of *Posh* month (December – January) in Vyara. In ancient times, people from different parts of the Tapi and nearby districts used to visit the place to perform the ritual for good health of the horses during war times. Even today, the devotees of the muslim saint "Khataalsha peer" come from different parts to attend this fair. Other fairs are organized in Dolvan village of Vyara taluka in the month of *Kartik* (October – November), Daasiwada and Devalpada villages of Songadh taluka in the month of *Margshirsh* (November – December). Developmental works are undertaken by the GPYVB in Govaaddev – Kanjan in Vyara.

Summer house of Gaikwads is located in the centre of Vyara town. It can also be developed as a tourist spot.

1.7 CHAPTER SCHEME

The District Human Development Report is organized in five chapters. A comparative position of the analysis at disaggregate level is undertaken for inter-taluka comparison on human development indicators. The details of the issues covered and human development indicators compared are discussed as under:

Chapter – 2 discusses the status of education in Tapi district. The chapter focuses on overall literacy rate and makes comparison of literacy rate across specific groups such as males and females, schedule tribes; as well as across rural and urban areas of Tapi district. Similar comparison is made for enrolment and dropouts from schools. The chapter discusses the education infrastructure and various pedagogical tools used by government schools, alternate schooling system like *Ashramshala* and schools for children of sugarcane cutters. Success stories of school set up by the government under Tribal Sub-Plan is also presented.

Chapter – 3 highlights the status of health. The development of social infrastructure for healthcare like developing healthcare organizations, providing drinking water, sanitation and drainage facilities is discussed in this chapter. The details on number of cases and deaths due to various water-borne diseases are also discussed in this chapter. The status of various diseases in the district is also discussed. Information on cases and death due to sickle cell anaemia, leptospirosis, swine flu etc. is also covered in this chapter. Various schemes for awareness among people about these diseases, their prevention and cure are discussed in this chapter.

Chapter – 4 provides overview about livelihood issues in Tapi district. The present status of agriculture, animal husbandry, poultry, fishing, mining, quarrying and small scale industries is discussed in this chapter. Government initiatives undertaken for upbringing of tribals like benefits of Social Security Schemes, employment generation under MGNREGA, SGSY, etc. are discussed. The chapter also presents various success stories that has helped improving the livelihood of people in rural and interior areas.

Chapter – 5 discusses major outcomes of human development indicators in the district. The major focus is the identification of concern area and suggestions to the Government initiatives to manage those issues.

SWOC ANALYSIS

Strengths

- Moderate climate: Good for growing sugarcane and cotton.
- Sex ratio is favourable.
- Sex ratio of ST population is highly favourable.
- Connectivity of all villages through metaled roads.

Weaknesses

- Low skill profile of the tribal; majority population of the district is engaged in low skilled based occupations which directly impact their livelihood.

Opportunities

- Skill development programmes can be introduced.
- Large proportion of ST population. These people are aborigins of Tapi and thus, understand the rural economy better. If given proper direction and guidance, it may help for sustainable development.
- There are ample avenues for developing tourism.
- To build the capacity of local institutions with Government functionaries, for enhanced service delivery.
- To develop policy framework that links the resources of the region with development; and development of the region with local people.

Challenges

- Public Transport: Specially, frequency of buses in remote villages.
- Narrow roads.
- The region is constrained by difficult geographical reach, isolated inhabitations and social norms.
- Uchchhal and Nizar are identified as relatively less developed talukas as per the Cowlagi Committee.

CHAPTER 2

EDUICATION

IN

TAPI

2. EDUCATION

HIGHLIGHTS

- The literacy rate of Tapi district is 68.2 per cent in 2011, which shows a good improvement from 57.1 per cent in the year 2001, although it is lower than the State level i.e 78.0 per cent (in 2011).
- The gender gap in literacy rate has reduced from 18.3 to 14.3 per cent. This is less than the gender gap in literacy for the state which is 16.10 per cent. Rural-urban gap in literacy rate has reduced from 25.6 to 18.2 per cent.
- Urban literacy rate of ST population (80.4) in Tapi is much higher than the State Urban literacy rate of ST population (72.7).
- Literacy rate of Valod (74.9 per cent) & Vyara (74.1 per cent) districts are more than the literacy rate of District average (2011).
- Access to physical amenities in schools are good.
- Retention rate, promotion rate is increasing whereas drop outs is decreasing.
- Performance of schools as graded in Gunotsavs is improving.
- There exists an alternative schooling system and nivasi camps for children of migrant workers.
- Performance of students in the surprise test taken by the DHDR team is good. This reflects the good quality of education in Tapi.

2.1 INTRODUCTION

The main objective of this chapter is to examine the achievements of the Tapi district in the field of education in recent past. Quality of education is essential to ensure the holistic development of students. The chapter discusses the quality of education by evaluating the learning standards of Tapi district by conducting standardized test through sample questionnaire. Before we discuss the progress literacy rate in the Tapi district, it would be pertinent to discuss the importance of education.

Article 45 of the Directive Principles of the constitution urges all state to provide ‘free and compulsory education for all children until they complete the age of fourteen years’ within a period of ten years from the commencement of the constitution. Right to education has been recognized as fundamental right in 83rd constitutional amendment. Education is thus, one of the most important social indicators that have direct bearing on economic development.

Level of literacy or education has direct influence on economic growth and it is indirectly associated with poverty, health, population growth, and crime rate. Education is recognized as a basic input for empowerment to individual and overall development of the society. In recent past both state and central government has number of measures to improve the enrolment ratio and level of literacy rate.

Growth of any region can be sustained or increased if corresponding improvement in infrastructure is also made. In the past, the role of social infrastructure was recognized but not given due importance in policy making. Development of social infrastructure, which includes education and health, is very crucial for economic development. Moreover, education and health are desirable in themselves.

2.1.1 Importance of Education:

The notion of investment in education is not new. Expansion of education results in both personal and social benefits. Formation of human capital is possible through education and human capital contributes to economic growth. Expenditure on education, therefore, is considered to be an investment as it leads to the formation of human capital.

Increase in female literacy rate is associated with reduction in fertility rate, child mortality rate that would result in reduction in desired family size. Education also helps in increasing health awareness and in turn it increases return on education. Mobility and adaptability of labour also

increases with increase in the level of education. Greater educational achievements enable discouraged groups to resist oppression and get fairer deal [Dreze and Sen 1996]. The benefits of education are numerous and therefore its importance in economic development is enhanced.

2.1.2 Status of Education in Tapi

Literacy rate is used to measure achievements in the field of education. This measure has many limitations. For example, quality of education, quality of school infrastructure, problems related to attendance, responsibilities of teachers, dropouts etc.; are the issues which are not captured by literacy rate. It will become obvious when we look at the definition given by the Census of a literate person. Census defines literate as ‘A person who can both read and write with understanding in any language, is taken literate. A person who can merely read but not write is not considered as literate’. It is not necessary that a person who is considered to be literate by the census should have obtained any formal education or passed any minimum educational standard.

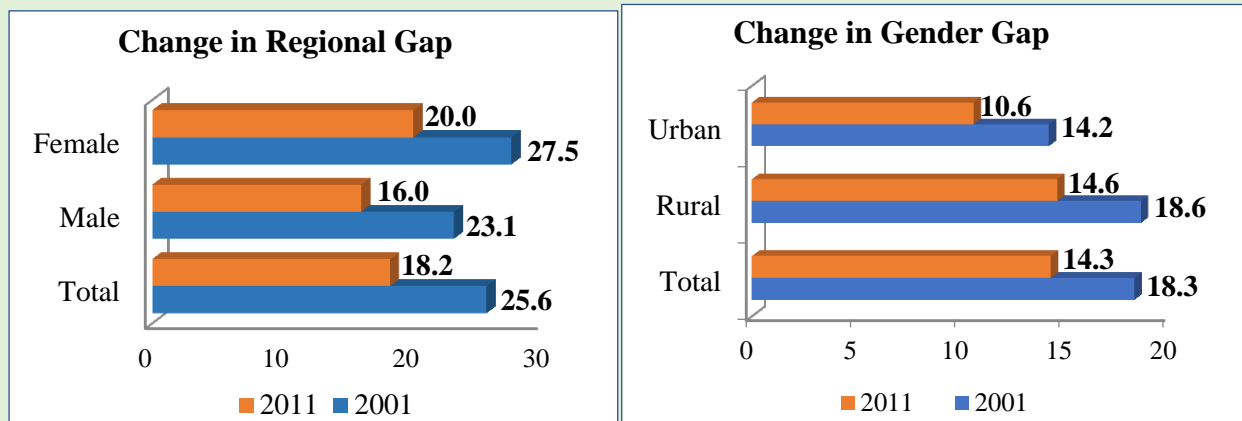
TABLE 2.1: STATUS OF LITERACY (%)

T / M / F	2001				2011			
	T	R	U	Regional Gap	T	R	U	Regional Gap
Person	57.1	54.5	80.1	25.6	68.2	66.4	84.6	18.2
Male	66.2	63.9	87	23.1	75.4	73.8	89.8	16.0
Female	47.9	45.3	72.8	27.5	61.1	59.2	79.2	20.0
Gender Gap	18.3	18.6	14.2	-	14.3	14.6	10.6	-

Source: Census of India – 2001 & 2011, Registrar General of India

Table 2.1 shows that there is an increase in literacy rate by 11.1 percentage points in past one decade. Female literacy rate has increased more than (13.2 points) the male literacy rate (9.2 points). The regional gap has reduced from 25.6 per cent in 2001 to 18.2 per cent in 2011. Here female and male performance almost similar; 7.5 points reduction in female regional gap while for male it is 7.0 points. It is also to mention here that gender has also reduced during the decade (from 18.3 in 2001 to 14.3 in 2011).

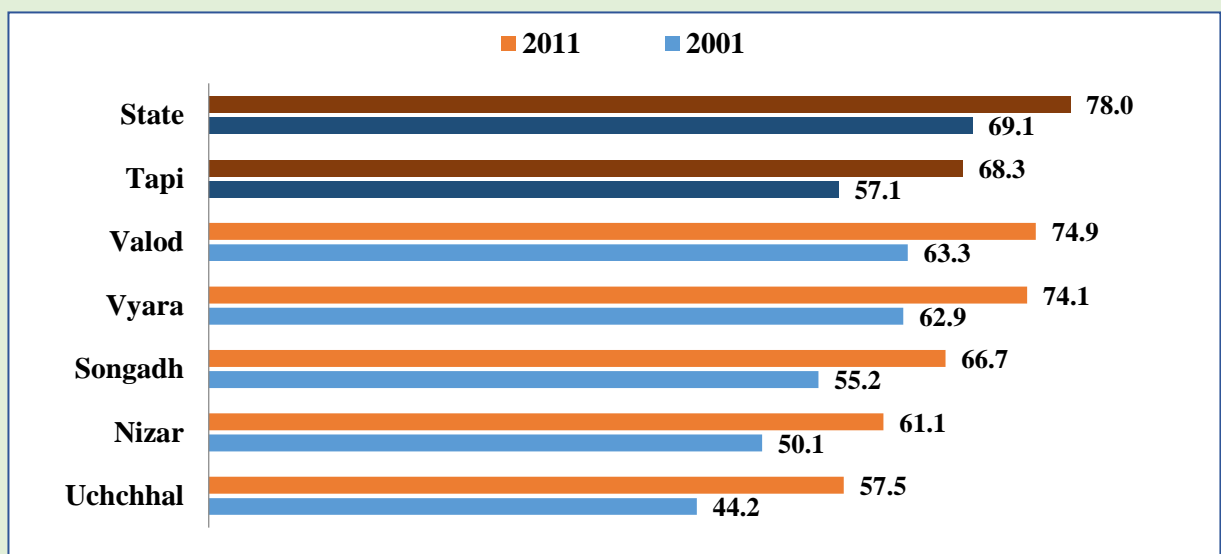
FIGURE 2.1: CHANGE IN REGIONAL GAP AND GENDER GAP



Source: Census of India – 2001 & 2011, Registrar General of India

Taluka wise literacy shows a huge variation across the talukas. A comparison of overall literacy rate at taluka-level for 2001 and 2011 are shown in figure 2.2.

FIGURE 2.2: TALUKAWISE LITERACY RATE



Source: Census of India – 2001 & 2011, Registrar General of India

The above figure depicts that Valod taluka is having the highest literacy rate which is followed by Vyara taluka during 2001 and 2011. Both the talukas literacy rate is more than the literacy rate of overall district (in 2001 and 2011). Uchchhal, which was identified as less developed taluka by Cowlagi committee, having the minimum literacy rate during 2001 & 2011, although literacy rate has increased by 13.3 over the decade.

2.1.3 Regional Dimension of Literacy Rate

A comparison of literacy rates for rural and urban area reveals presence of urban bias at district level, as shown in table 2.1. Similarly, Rural and Urban scenario at taluka levels for both the census years 2001 and 2011 are shown in Table 2.2

TABLE 2.2: TALUKAWISE STATUS OF LITERACY (%)

District / Taluka	2001				2011			
	Total	Rural	Urban	Gap	Total	Rural	Urban	Gap
Tapi	57.0	54.5	80.1	25.5	68.3	66.5	84.7	18.2
Nizar*	50.1	50.1	-	-	61.1	61.1	-	-
Uchchhal*	44.2	44.2	-	-	57.5	57.5	-	-
Songadh	55.2	50.7	77.9	27.2	66.7	63.4	82.9	19.5
Vyara	62.9	59.5	82.1	22.5	74.1	72.0	86.4	14.4
Valod	63.3	63.3	-	-	74.9	74.9	-	-

**No Urban Population*

Source: Census of India – 2001 & 2011, Registrar General of India

There is a clear urban bias in literacy rate at taluka level also. The literacy rates of Songadh (Urban) and Vyara (Urban) which are 86.9 per cent & 86.4 per cent respectively, are more than the overall literacy rates of both the talukas in 2011. The rural-urban gap in Songadh is 19.5 per cent and that in Vyara is 14.4 per cent.

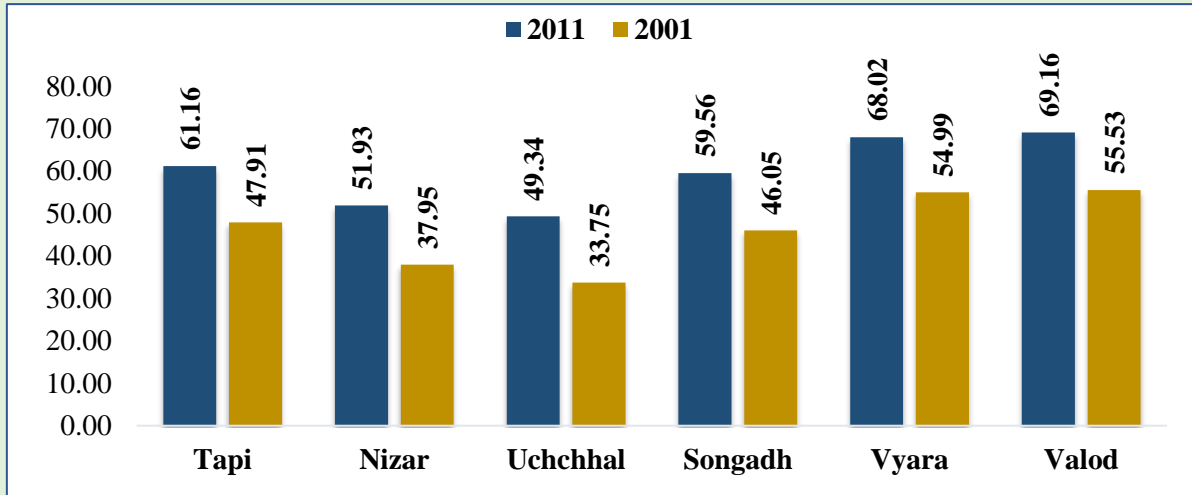
The gap in Songadh has reduced from 27.2 to 19.5 per cent. In Vyara, it has come down from 22.5 to 14.4 per cent. The government has launched number of schemes like Sarva Siksha Abhiyan, Mid-day meal scheme etc. seems to have worked well in these talukas.

2.1.4 Gender Dimension of Literacy Rate

Status of women is recognized as an important factor in influencing various aspects of social behaviour. Scholars have encountered difficulties in its measurement and a consensus is yet to emerge on a good indicator that can capture the status of women. Level of female literacy rate is commonly used as proxy for the status of women. Very often, the gap between male and female literacy rates is used as a measure to examine the status of women in comparison with men. Ratio of the female and male literacy rates is also a simple index which extensively used. We shall use here both male and female literacy gap and female/male ratio to study existence of

gender disparity in the level of literacy rate. We shall first examine the female literacy rate in each taluka and then examine the gender gap in literacy. Female to male ratio is termed as gender parity index.

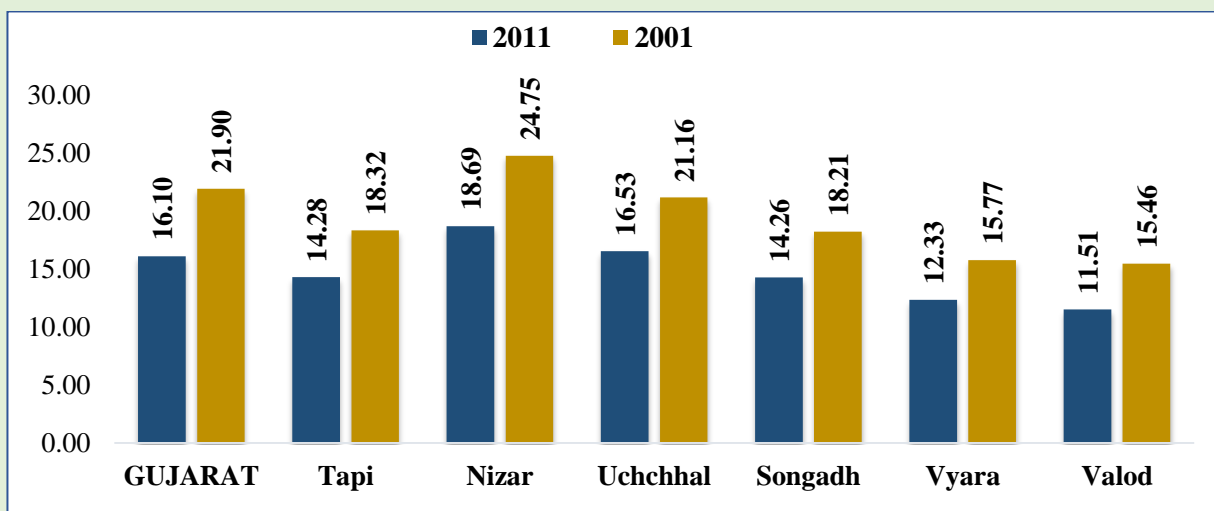
FIGURE 2.3: TALUKAWISE FEMALE LITERACY RATE



Source: Census of India – 2001 & 2011, Registrar General of India

Figure 2.3 shows that the scenario of female literacy rate in each taluka of Tapi. Valod has highest female literacy rate and Uchchhal has lowest during both the census years 2001 & 2011. However, there is a major increase in female literacy rate in 2011 in each of these talukas of Tapi district in comparison with 2001.

FIGURE 2.4: TALUKAWISE GENDER GAP IN LITERACY

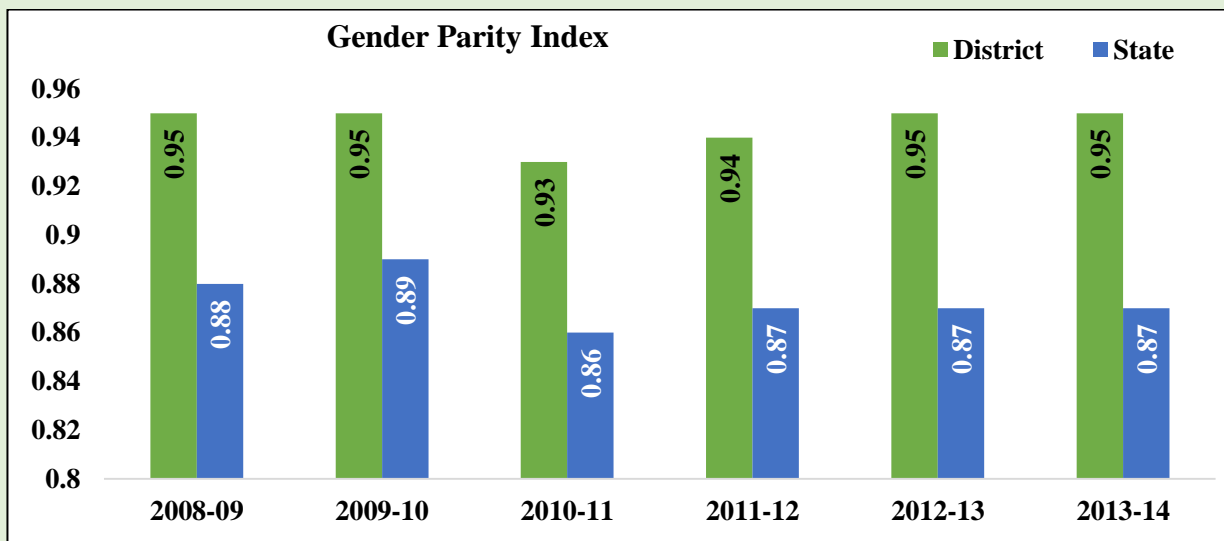


Source: Census of India – 2001 & 2011, Registrar General of India

Gender gap is the difference between male literacy rate and female literacy rate. Positive gender gap indicates that male literacy rate is higher than female literacy rate. Figure 2.4 shows the gender gap of the Tapi district across the talukas for both the census year i.e. 2001 and 2011. As per census 2011, highest gender gap is in Nizar (18.69 per cent) and lowest is in Valod (11.51 per cent). The gender gap in all the talukas have reduced in 2011 as compared to that in 2001. It is to mention here that the gender gap in Tapi has remained low in comparison with the gender gap in literacy of Gujarat for both the census years – 2001 and 2011.

Gender Parity Index (GPI): GPI denotes the number of Female enrolment to Male enrolment in a given stage of education. GPI measures the progress made towards gender parity in educational participation and/or learning opportunities available for women in relation to those available to men. A Gender Parity Index closer to one indicates gender parity (or equality) in imparting education to women. Figure 2.4 presents the trend of gender parity index over a period of last five years.

FIGURE 2.5: GENDER PARITY INDEX FOR TAPI AND GUJARAT [2008-09 TO 2013-14]



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

Gender Parity Index of Tapi is close to one and higher than the state average, indicating less inequality in imparting education to women. Our field based interviews on women empowerment in the district support the fact that girls are encouraged to study. Field experiences even reveal that more girls go for education higher than standard VIII in comparison with boys. Results of girls are better than that of boys and thus, parents have started encouraging girls to go for secondary and higher education.

2.1.5 Status of Literacy Rates in ST Population

The literacy rate of ST population of the District is 64.9 which is higher than the literacy rate of the ST population of the State (62.5). District Urban literacy rate of ST population (80.4) is much higher than the State Urban literacy rate of ST population (72.7). Gender gap in Rural-Urban ST literacy rate is lower than the State. Female literacy rate of the ST population of the district (57.7) is much higher than female literacy rate of ST population of the State (53.3), although Female literacy rate is not so good. Overall it can be said that in literacy rate ST population of Tapi district is better than ST population of the State in every way.

TABLE 2.3: LITERACY RATES OF ST POPULATION, 2011

	T/R/U	Persons	Male	Female	Gender Gap
Tapi	Total	64.9	72.4	57.7	14.7
	Rural	64.4	71.9	57.1	14.8
	Urban	80.4	86.1	74.9	11.2
Gujarat	Total	62.5	71.7	53.2	18.5
	Rural	61.3	70.7	51.8	18.9
	Urban	72.7	80	65.1	14.9

Source: Census of India –2011, Registrar General of India

2.2 STATUS OF EDUCATION

2.2.1. Infrastructure Availability:

Physical infrastructure is one of the important factors that determine quality of education. The details on number and type of schools in Tapi district over a period of past five years is given in below table (2.4).

TABLE 2.4: NUMBER OF SCHOOLS

School Category	2009-10		2010-11		2011-12		2012-13		2013-14	
	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private
OP	487	4	482	7	481	10	481	12	485	15
P+UP	369	11	372	12	382	19	312	22	313	25
P+UP+S/HS	4	3	7	6	0	0	19	93	20	93
OUP	0	2	0	2	3	1	0	0	0	0
UP+S+HS	0	0	0	0	0	0	8	35	8	42
SUB TOTAL	860	20	861	27	866	30	820	162	826	175
DISTRICT TOTAL	880		888		896		831		842	

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

- OP** : Only Primary
- P+UP** : Primary & Upper Primary
- P+UP+S/HS** : Primary, Upper Primary, Secondary/Higher Secondary
- OUP** : Only Upper Primary
- UP+S+HS** : Upper Primary, Secondary, Higher Secondary

The total number of primary schools in Tapi district is 842 in 2013-14 (Government and Private taken together). One may see the trend that the number of private schools is raising, especially from 2012-13 it shows a sudden increase while the number of government schools is declining from the same year. It implies that there is an increasing trend of parents preferring to send their children to private schools, even in rural areas, where they have one. Schools having only Upper Primary, Secondary and Higher Secondary (UP+S+HS) were not there till 2012-13. In 2012-13, 8 government schools and 35 private schools were started in different villages of Tapi district, which increased to 42 private schools in 2013-14. The number of government schools continued to remain the same.

Primary education is the right of every citizen. The number of Only Primary (OP) and Primary + Upper Primary (P+UP) has shown an increasing trend in past five years. It is equally important to examine the infrastructure facilities available in the school. Number of teachers and student-teacher ratio are important to study the quality of education infrastructure.

TABLE 2.5: ACCESS TO PHYSICAL AMENITIES IN SCHOOLS AS ON DECEMBER 31, 2014*

Taluka	Total Schools	Avg. Rooms per School	Electricity	Computer Lab	Compo-und Wall	Play-ground	Access to Drinking Water	Sanitation	MDM
Tapi	798	6	100	39.22	86	64	100	100	99
Nizar	112	7	100	42.86	87	72	100	100	100
Uchchhal	85	6	100	51.76	95	72	100	100	99
Songadh	257	5	99	33.85	77	53	100	100	99
Vyara	264	6	100	38.64	86	46	100	100	98
Valod	80	6	100	40.00	84	76	100	100	98

Source: District Primary Education Office, Tapi (Vyara)

*except figures are percentages.

Table 2.5 indicates that almost in all criteria of physical amenities; nearly 99 per cent of the schools are equipped with the basic facility of electricity and compound wall facilities. 100 percent primary schools are equipped with drinking water and sanitation. Shortfall in cases of playground and computer lab has also been noted. Actions are required to be taken to equip these schools with such facilities. Table 2.6 gives details of colleges in various talukas of Tapi. These colleges are affiliated to Veer Narmad South Gujarat University, Surat.

Each taluka has at least one college in Tapi (table 2.6). It might not be viable to set up self-financed institutions in the remote areas and therefore, government colleges help to foster balanced regional development.

TABLE 2.6: COLLEGES AFFILIATED TO VEER NARMAD SOUTH GUJARAT UNIVERSITY AS ON DECEMBER 31, 2014

Taluka	Colleges		
	Grant-in-aid / Government	Self-Financed	Total
Nizar	1	0	1
Uchchhal	1	0	0
Songadh	1	0	1
Vyara	1	2	3
Valod	4	1	5

Source: Veer Narmad South Gujarat University, Surat

2.2.2 Enrolment and Drop-Out:

In recent decades India has made significant progress on access to schooling and enrollment rates in primary education but dropout rates and low levels of learning remain challenges for the state and central government. The millennium development goals as drawn up by the UN direct nations to ensure that all boys and girls complete a primary education by the year 2015. Government is making good efforts in expanding the reach of education, but school dropouts hamper the progress of education.

Amount of schooling has direct bearing on labour productivity. Higher schooling is expected to increase understanding of surrounding and develop cognitive faculty. Dropouts increase the cost the state. School dropouts may create nuisance in the society by engaging themselves in antisocial activities. Hence, controlling dropout rate is one of the major agenda of State Education Department.

Enrolment in primary schools has significantly improved because of initiatives taken by the State as well as National Government. Trend on enrolment is presented in table 2.7:

TABLE 2.7: CHANGE IN ENROLMENT [2009-10 TO 2013-14]

Year	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Enrolled 1-7th	107860	107546	106649	111918	109695	106052
Change over previous year	----	-314	-897	5269	-2223	-3643
Enrolled 1-7th (Girl Students)	52480	52154	52105	54724*	53548*	51949*
Change over previous year (Girl Students)	----	-326	-49	2619	-1176	-1599

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

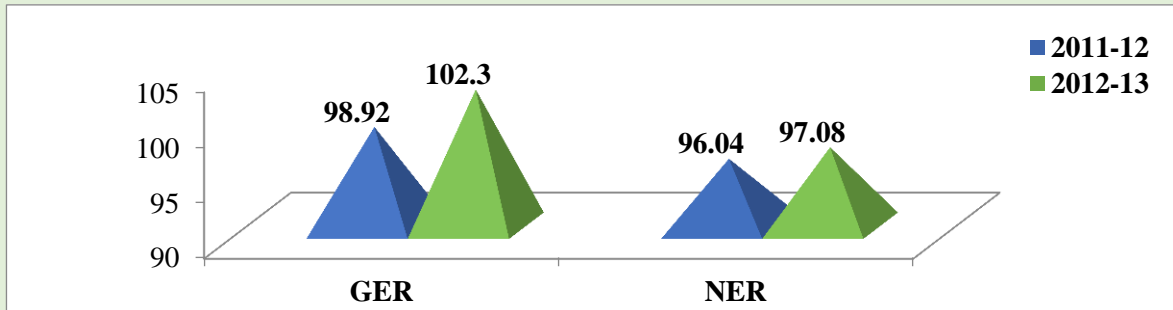
* Includes standard VIII

Gross Enrolment Ratio (GER) and Net Enrolment Ratio (NER): GER is the total enrolment in a specific level of Education, regardless of age, expressed as a percentage of the population in the official age group corresponding to this level of education.

NER is the proportion of pupils of official school age of 6-10 years who are enrolled in primary grades I-V. NER in primary education is the major indicator to assess whether the country/

state/ district is tending to achieve universal primary education for all children. For the year 2012-13, the GER and NER for the Tapi district is 102.3 percent and 97.08 percent respectively.

FIGURE 2.6: GER AND NER OF PRIMARY EDUCATION IN TAPI DISTRICT



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

A mere increase in number of children enrolled does not make much difference unless children continue their education. Hence, it is also important to know other indicators like retention rate, drop-out rate etc. which has been shown in below table:

TABLE 2.8: TREND IN FLOW RATES [2009-10 TO 2013-14]

Flow Rates	2009-10	2010-11	2011-12	2012-13	2013-14
Retention Rate (Primary Level)	97.32	96.92	93.77	94.83	97.86
Transition Rate (Primary to Upper Primary)	94.44	91.41	83.76	98.59	97.80
Repetition Rate (Class 1-5)	7.25	9.31	5.02	0.82	0.58
Drop-out Rate (Class 1-5)	2.78	4.76	3.24	1.27	1.34
Promotion Rate (Class 1-5)	89.97	85.28	90.97	97.91	98.02

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

Table 2.8 shows the flow rates in primary education of Tapi District. The retention is improving, repetition and drop-out is reducing and promotion rate is also increasing. This shows a healthy trend. However, transition rate is fluctuating, which is worrisome.

TABLE 2.9: DROPOUT RATE (CLASS 1-5 AND CLASS 1-7)

Year	Gender	Std. 1 to 5		Std. 1 to 7	
		Tapi	Gujarat	Tapi	Gujarat
2009-10	Boys	2.87	2.14	1.62	8.33
	Girls	2.68	2.17	2.58	8.97
	Total	2.78	2.20	2.68	8.65
2010-11	Boys	4.91	2.08	3.16	7.87
	Girls	4.59	2.11	3.00	8.12
	Total	4.76	2.09	3.08	7.95
2011-10	Boys	3.74	2.05	5.58	7.35
	Girls	2.14	2.08	6.87	7.82
	Total	3.24	2.07	6.23	7.56
2012-13	Boys	1.64	2.02	4.58	6.87
	Girls	0.87	2.06	5.77	7.37
	Total	1.27	2.04	5.18	7.08
2013-14	Boys	1.61	1.97	1.78	6.53
	Girls	1.06	2.02	1.84	7.28
	Total	1.34	2.00	2.14	6.91

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

Above table shows trend in drop-out rate in class 1-5 and class 1-7 in Tapi District as well for the State. During 2009-10 the drop-out rate of Std. 1-5 in Tapi District was marginally higher than the State. Again during 2010-11, the drop-out rate goes high for the district, after that, it started to reduced and during the latest year (2013-14) district drop-out rate is lesser that the State. For class 1-7, the drop-out rate of the district is always lesser than the State average (2009-2013).

Talukawise Total enrolment ratio (number of children in the age group of 6-11 admitted in the primary school divided by population of children in the age group of 6-11 years) is given in below table , which shows that there is 100 per cent enrolment in minority and Schedule Caste (SC) categories. In case of ST category and all communities, 100 per cent enrolment is observed in Uchchhal and Valod talukas. In other three talukas, the enrolment is above 99 per cent.

TABLE 2.10: PERCENTAGE ENROLMENT (6 - 11 AGE GROUP) FOR YEAR 2013-14

Taluka/ District	All communities			ST			Minority		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Tapi	99.88	99.91	99.89	99.88	99.89	99.88	100	100	100
Nizar	99.61	99.66	99.63	99.61	99.58	99.59	100	100	100
Songadh	100	100	100	100	100	100	100	100	100
Uchchal	99.89	99.94	99.91	99.88	99.93	99.90	100	100	100
Valod	100	100	100	100	100	100	100	100	100
Vyara	99.96	99.97	99.97	99.96	99.97	99.96	100	100	100

Source: District Primary Education Office, Tapi (Vyara)

2.2.3 Teachers in Primary Schools

The Right to Education Act mandates a pupil teacher ratio (PTR) of 30:1 in order to ensure that children learn better in the classroom. Below table indicates that the Student Teacher Ratio in the district is within the standard set as per the RTE whereas for Gujarat during 2009-12 it was marginally higher than the national Standard, there after it is 30:1

Female to male teacher ratio is also favourable for the district as well as for the State. Since last five years it is more than 1 for both.

TABLE 2.11: STUDENT-TO-TEACHER RATIO AND FEMALE-TO-MALE TEACHER RATIO

Year	Pupil Teacher Ratio		Female to Male Teacher Ratio	
	Tapi	Gujarat	Tapi	Gujarat
2009-10	26	32	1.20	1.84
2010-11	33	31	1.20	1.84
2011-12	26	31	1.22	1.83
2012-13	26	30	1.18	1.83
2013-14	25	30	1.21	1.81

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

It can be seen from Figure 2.7 that the number of male and female teachers are increasing over the years except 2011-12. The number of female teacher is continuously higher than the male teacher which is reflecting in the above table also. The below figure also shows that during the last five years the overall female teacher increased 138 while for male it is only 90.

Pupil-teacher ratio in all talukas of Tapi are good. Along with good pupil-teacher ratio, well-qualified teachers encourage the students to study and motivate them to progress further. Table 2.12 shows the number of teachers with different grades of qualifications in Tapi District.

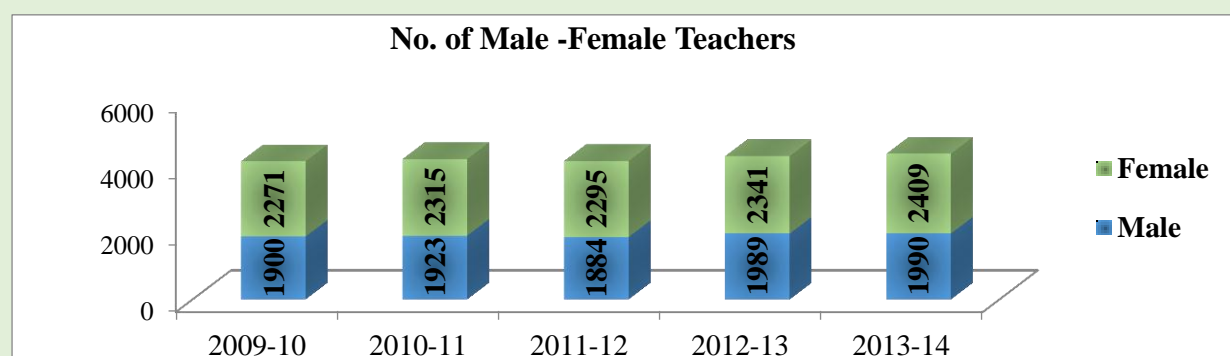
TABLE 2.12: TALUKAWISE TEACHERS' QUALIFICATIONS

Teachers Qualification	2011-12			2012-13			2013-14		
	OP	OP+UP	Total	OP	OP+UP	Total	OP	OP+UP	Total
Below Secondary	107	168	275	84	169	253	93	170	263
Graduate	59	380	439	56	513	569	57	554	611
Higher Secondary	306	691	997	317	652	969	328	628	956
M. Phil.	1	6	7	-	10	10	-	9	9
Ph. D.	1	17	18	1	12	13	1	11	12
Post Graduate	28	327	355	23	487	510	34	564	598
Secondary	606	1482	2088	618	1388	2006	632	1318	1950
Total	1108	3071	4179	1099	3231	4330	1145	3254	4399

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

Above table shows that number of teachers with Post-Graduate qualifications have increased from 355 in 2011-12 to 598 in 2012-13. In 2012-13, there are 611 teachers are graduates, 598 are post-graduates, 9 are MPhil and 12 are PhD. It is observed that in past three years, the number of teachers with higher educational qualifications have increased.

FIGURE 2.7: NUMBER OF MALE-FEMALE TEACHERS [2009-10 TO 2013-14]



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

2.3 GOVERNMENT INITIATIVES

The state government has initiated series of measures to improve enrolment ratio, and retention rate in the primary schools. Some steps were also taken to provide education to children of migrant population and to encourage female education.

‘Sarva Siksha Abhiyan Mission’ (SSAM) has been launched to achieve 100 percent literacy rate. Under the umbrella of SSAM, ‘National Programme for Education for Girls at Elementary Level’ is also being implemented. Besides, Kasturba Gandhi Balika Vidyalaya Yojna is being implemented. Under this scheme, residential elementary school with boarding facilities are set up for girls belonging to the disadvantaged group of SC/ST/OBC/Minority and BPL in difficult areas.

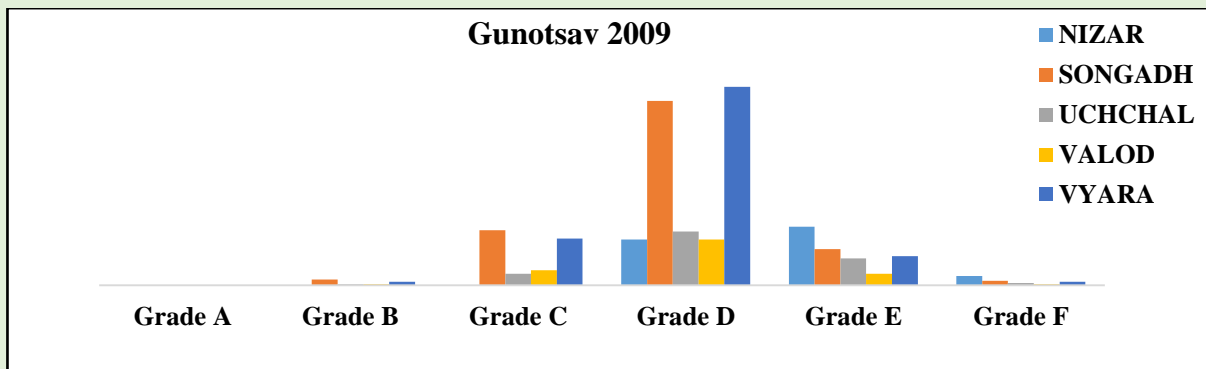
The Mid Day Meal Scheme is re-introduced since January 1992 and it is being implemented throughout the state. Under the scheme, children are provided hot cooked meal. Under Nutritional Support to Primary education, food grains at the rate of 100 gms. per child per day provided free of cost to the children of standard I to V.

Doodh-Sanjivini Yojna is introduced to increase physical standards of poor tribal students. Initially the scheme is introduced in Uchhal taluka to provide a flavoured-milk pouch daily to 13,272 tribal school children at free of cost. As per the scheme, the state government would provide 200 ml pouch of 'Sumul' brand's flavoured milk to children of 84 primary and five ashramshala of Uchchhal taluka. The milk pouch would be distributed apart from the mid-day meal scheme.

Gunotsav: Recruitment of the teachers, construction of class-rooms, computer labs, toilet blocks and other school facilities have helped to improve enrollment of students in schools or to reduce the drop-out rate. People do not prefer to go to public schools because they perceive that good quality education is not provided in public schools. The state Government has taken up the Gunotsav campaign involving large number of bureaucrats to have a quality check in primary education in government run primary schools. All the schools in the districts are covered during the Gunotsav campaign. The campaign will certainly help to sensitize the machinery to focus on quality of education.

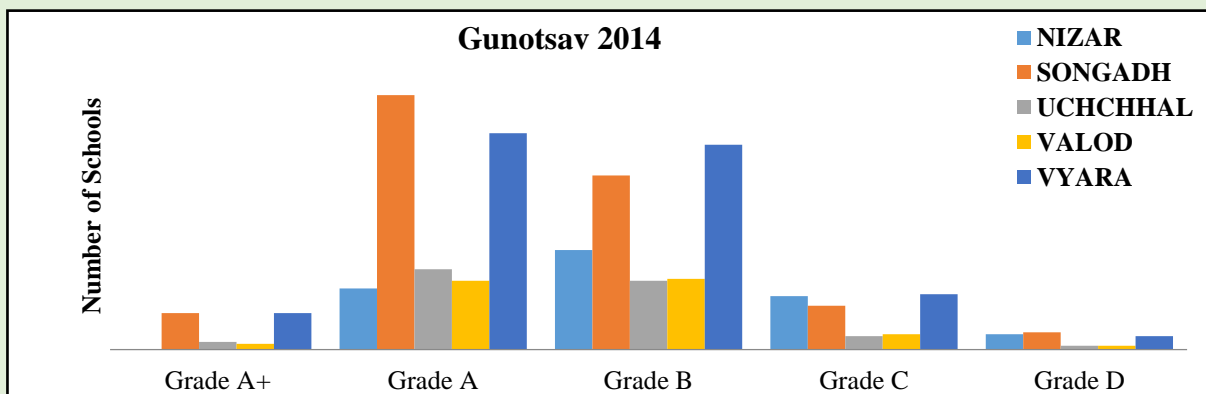
The performance of schools in terms of grades given in Gunotsav from 2009 to 2014 is given and in Figure 2.8 and 2.9: One can see that the performance of schools is consistently improving.

FIGURE 2.8: GRADING OF SCHOOLS IN GUNOTSAV 2009



Source: District Primary Education Office, Tapi (Vyara)

FIGURE 2.9: GRADING OF SCHOOLS IN GUNOTSAV 2014



Source: District Primary Education Office, Tapi (Vyara)

Alternative Schooling: Prevalence of child labour and poverty of parents foil the efforts by the government to improve the quality of education. Besides, modest remuneration offered to teachers hampers the quality of education. Proper human resource management system requires to be developed to recruit and retain good quality teachers.

Sugarcane Cutter Child Alternative Schooling Systems is introduced to provide primary education to the children of migrant population.

Sugarcane is one of the main crops of Tapi. People from nearby villages come and stay for 3-4 months for sugarcane cutting. Many families cannot keep their children in their native places because of there is no one to take care of them in the absence of their parents. This alternative schooling system provides an opportunity to their children to study when their parents are out of their native places to cut sugarcanes. Table shows the details of number of schools, number of

boys and girls taking education through alternative schooling system that is set up for sugarcane cutter's children:

TABLE 2.13: SUGARCANE CUTTER CHILDREN'S ALTERNATIVE SCHOOLING SYSTEM AS ON DECEMBER 31, 2014

Taluka	Schools	Number of Students		
		Boys	Girls	Total
Tapi	62	590	285	885
Nizar	12	96	79	175
Uchchhal	16	106	82	188
Songadh	0	0	0	0
Valod	34	388	124	522
Vyara	0	0	0	0

Source: District Primary Education Office (Sarva Siksha Abhiyan Mission), District Panchayat, Tapi (Vyara)

There are 590 and 285 boys and girls respectively studying in this alternative schooling system. There are 62 such schools in the whole of Tapi. Valod has maximum (34) schools providing education to migrant labourer's children. However, there are no such schools in Songadh.

Providing education to the children of migrating population is a challenging task. The government has introduced scheme of Nivasi Camp to provide education to the children of such population.

TABLE 2.14: NIVASI CAMP FOR MIGRANT PEOPLE'S CHILDREN AS ON DECEMBER 31, 2014

Taluka	Total Camp	Boys	Girls	Total
Tapi	128	2019	1506	3525
Nizar	36	546	368	914
Uchchhal	25	422	361	783
Songadh	28	408	307	715
Vyara	15	255	231	486
Valod	24	388	239	627

Source: District Primary Education Office (Sarva Siksha Abhiyan Mission), District Panchayat, Tapi (Vyara)

Table 1.23 shows that there are 128 Nivasi Camps in Tapi. Nizar has maximum and Vyara has minimum Nivasi camps. A total of 2019 boys and 1506 girls take education in Nivasi camps. In Nizar, 924 students are enrolled in Nivasi camps and in Vyara 486 students are enrolled.

Other Schemes: The scheme of ‘Vidya Laxmi Bond’ has been introduced to encourage the poor parents to send their girl child to school and provide education upto to primary level. Under the scheme, the villages and cities where women literacy rate is less than 35 percent, are provided bond of Rs. 1000 at the time of admission in standard I, receivable after completion of standard IV.

The state government has introduced the scheme of ‘Vidya deep’ insurance to provide insurance coverage for accidental death of students studying in primary / secondary schools. Insurance cover under the scheme provided for accidental death, except suicide or natural death, death by any other means viz. earthquake, floods, cyclone, fire, riots, accidental poisoning, dog bite or bite by any other beast or accidental death by any other means at any place during 24 hours of day.

2.4 Good Practices of the District Education:

EKLAVYA SCHOOL OF GIRLS, BABARGAT



The team of DHDR visited Eklavya School located in Babarghat village of Uchchhal taluka on January 08, 2012. This is a residential school complex for girls started in 2009 and shifted to its current location in 2011. Total 140 girl-students belonging to tribal community of Uchchhal taluka are studying in this residential school in 8th, 9th and 10th standard. This school has seven young teachers of an average age below 25 years and doing wonderful job. Infrastructure, cleanliness and academic atmosphere was very impressive. Our visit was unplanned so that observations were in natural setting. We interacted with the students and found that they are conversed with basic knowledge of their subjects like English, mathematics, general studies and science. They are also very enthusiastic to talk to us and demonstrate their skills. Teachers were also found to be committed. It should also be noted that all the teachers are from tribal community. We found everything in order except solar heater and RO water filter system. Solar panel was installed without water connection.

This is quite similar to what we observed in other schools.

Health check up is also done for the school and testing of sickle cell is also done. This can help students and parents to prevent the occurrence of further problem resulting in sickle cell anemia.

Overall ambience of study was good.



PRAGNYA VARG AT PRIMARY SCHOOL, JESINGPUR



Observation-based learning, application-orientated learning or learning through participation can further improve the quality of education. One school in Jesingpur village of Vyara taluka has already implemented application-oriented learning. This enhances interest and improves retention rate of that school.

2.5 Summary

Disaggregated data on the level of the literacy rate show regional and gender imbalances, though it is reducing over a period of time. In order to remove regional imbalances, more resources should be allocated in the regions which are lagging behind in educational infrastructure. In order to reduce gender inequality, special concessional measures for girls should be undertaken. The state government has exempted girl students from the payment of tuition fees. But it forms very insignificant component of total private expenditure in education. The factors behind poor literacy rate among female compared to male children should be identified and measures should be taken accordingly.

Tapi has good educational infrastructure in terms of number of schools and physical amenities available therein. Though, effective utilization of those physical amenities is subject to its proper maintenance. Special care requires to be taken for effective utilization of drinking water and sanitation facilities at schools. Absence of separate girl's toilets or inaccessibility of the same can adversely affect the enrolment of girls. Similarly, safe drinking water and availability of water during school timings are important to ensure good health of students. Good health reduces absenteeism. Compound walls is another issue in schools of Tapi district. Schools not having a proper compound wall face problems of land encroachment by nearby residents.

Different communities among the tribes have different dialects. Gamits have their own language and their own set of grammar. Educating these children in their own mother tongue can help in retaining their interest in studies and also enhance their understanding of the subject.

Survey on quality of education suggests that the students are comfortable with simple and direct questions. Special efforts are needed to train students to upgrade their skills. Results of Gunotsav show that gradually more and more schools are getting higher grades. Some improvement in school infrastructure and physical amenities like electricity, TV etc. might create conducive learning environment and facilitate learning.

The case study of Babarghat Ashram School shows that effective utilization of Tribal Sub-Plan Scheme has resulted in setting up of this school. The children of nearby villages, especially those whose parents are migrating seasonally in search of labour can avail the benefit of this school. Their education does not suffer and they can study without any hindrances associated with temporary migration of parents.

SWOC ANALYSIS

STRENGTHS

- The rural-urban gap as well as gender gap in literacy in Tapi is less than the state average.
- There is close to 100 per cent enrolment and close to zero per cent out-of-school children.
- Gender Parity Index is close to 1 and is stable. It is also more than the Gender Parity Index of the state.
- Number of schools have increased manifold in past 2 years.
- Student-teacher ratio is very favorable between 24-31 students per teacher.
- Most school are equipped with basic physical amenities.
- Alternative schooling system and nivasi camps help increasing literacy as they are specially set up for children on migrant parents.
- Quality of education is good. A large number of students of upper primary could answer the surprise test given to them by the DHDR team.
- Retention rate is increasing, repetition and drop-out rate is reducing and promotion rate shows an increasing trend.

WEAKNESSES

- NER of Girls in Upper Primary need to be improved.

OPPORTUNITIES

- University can introduce professional courses and involve colleges in the same.
- A separate Tribal University may be set up.

CHALLENGES

- Drinking water and sanitation issues are there despite creation of infrastructure for the same.
- The provision of primary education to all the children in remote and tribal areas is challenging task. Apart from lack of proper infrastructure, there are many other socio economic factors prevalent among tribal and rural population that influences provision of primary education.

CHAPTER 3

H_{HEALTH}

IN

T_{API}

3. Health

HIGHLIGHTS

- Health infrastructure has improved in recent past but there is scope of creating some more infrastructure.
- The District requires more specialist and private doctors.
- EMRI services of 108 are very good and a large number of people are making use of it.
- There are 161 Nirmal Grams in Tapi district.
- CBR and NRGP is lower than the state average.
- Burden of leptospirosis, sickle cell anaemia and leprosy requires to be tackled.
- Deaths due to leptospirosis are on a decline.
- More than 82 per cent children registered under ICDS are normal. Two per cent children are highly malnourished.
- Immunization and school health programmes are performing well
- Polio-3 immunization requires attention.

Good health is a prerequisite for well-being of human being. Health is therefore considered as an important component of HDI. Adequate health infrastructure, accessibility of health care and ability to spend on health care are main determinants of good health.

Improvement in health status is Human Development Index is denoted by improvement in life expectancy at birth. Life Expectancy needs to be improved by reducing child mortality, improving maternal health and reducing disease burden (life style diseases, communicable diseases, vector borne diseases).

Improvement in life expectancy and reduction in infant mortality rate significantly improve health component of HDI and thus improve HDI.

Crude Birth Rate (CBR) is a simple measure of fertility which is defined as the number of live births in a year per 1,000 of the midyear population. Similarly, Crude Death Rate (CDR) is defined as the number of Death in a year per 1,000 of the midyear population.

TABLE 3.1: CRUDE BRITH RATE AND CRUDE DEATH RATE FOR TAPI AND GUJARAT

District / State	CBR	CDR	NRGP
Tapi	15.2	6.1	9.1
Gujarat	20.8	5.6	15.2

Source: CRS-2013, Gujarat

The CBR of Tapi district is lower than the State average whereas the CDR is higher than the state average as per the CRS-2013. Accordingly, the natural rate of growth of population (NRGP) which varies inversely with economic development is also lower than the State average. This implies that the district is expected to experience relatively rapid demographic transition along with economic development as compare to the State average.

3.1 Health Infrastructure in Tapi District

Gujarat has a three-tier public health care system, following the guidelines of the National Health Policy of 1983. The first tier includes sub-centers which has an Auxiliary Nurse Midwife (ANM) and a male multipurpose worker (MPW) for each population group of 5000 persons (three to five villages). The Sub Centre (SC) is expected to provide services for a range of primary health care interventions, but is substantially focused on maternal and child health. Above SCs, there is the Primary Health Centre (PHC), which is the referral unit for 6 sub-centres. It has 4-6 beds and is manned by a medical officer in-charge and 14 subordinate

paramedical staff. Community Health Centre (CHC) is at the top of this 3-tier system. A CHC is a 30-bedded referral unit / hospital for 4 PHCs under its supervision.

The guidelines of the Ministry of Health and Family Welfare (MOHFW), Government of India prescribes the ideal number of SCs, PHCs and CHCs which are shown in table 3.2:

TABLE 3.2: HEALTH INFRASTRUCTURES AND POPULATION NORMS

Centre	Population Norms		
	Plain Area	Hilly / Tribal / Difficult Area	Urban
Sub-Centre	5000	3000	10000
Primary Health Centre	30000	20000	50000
Community Health Centre	120000	80000	NA

Source: Rural Health Statistics, MOHFW, Government of India, 2011

This means that for plain areas there has to be one SC for a population of 5000, one PHC for a population of 30000 and one CHC for a population of 120000. Similarly, for hilly / tribal / difficult area, there has to be one SC for a population of 3000, one PHC for a population of 20000 and one CHC for a population of 80000. Tapi is a tribal district. Thus, the norms for hilly / tribal / difficult area will be applicable to Tapi. This section tries to examine the adequacy of healthcare infrastructure in Tapi district.

TABLE 3.3: TALUKA WISE HEALTH INFRASTRUCTURES AND ALLIED FACILITIES AS ON DECEMBER 31, 2014

District / Talukas	Numbers			Per 3000 Population	Per 20000 Population	Per 80000 Population
	SCs	PHCs	CHCs	SCs	PHCs	CHCs
Tapi	235	30	5	0.87	0.74	0.50
Nizar	41	5	1	0.95	0.77	0.62
Uchchhal	28	4	1	0.95	0.90	0.90
Songadh	62	8	1	0.81	0.70	0.35
Vyara	74	9	1	0.83	0.67	0.30
Valod	30	4	1	0.99	0.88	0.88

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

It is clear from above table that efforts are required to set up more PHCs in all the talukas of Tapi. Number of sub-centres in Valod are close to the population norms prescribed by the MOHFW, Government of India. Number of PHCs and CHCs are highest as per norms of MOHFW in Uchchhal. Despite Uchchhal being identified by Cowlagi committee as less developed taluka compared to other talukas, it is close to the norms prescribed by MOHFW. Efforts are required to create more healthcare infrastructure in Vyara and Songadh. These two talukas are well-developed and people living in urban areas of these two talukas have access to private healthcare infrastructure. Focus should be on developing health care infrastructure in rural areas of these talukas.

CHCs are set up to give specialized healthcare services to the people. Thus, a CHC has to be equipped with all requisite infrastructure facilities and specialized doctors. Talukawise details of health personnel at CHC is given in Table 3.3.

TABLE 3.4: TALUKAWISE HEALTHCARE PERSONNEL AT CHCs AS ON MARCH 31, 2014

Talukas	General Surgon		Physician		Gynecologist		Pediatics		MO (MBBS)	
	S	F	S	F	S	F	S	F	S	F
Tapi	5	1	5	0	5	0	5	0	20	16
Nizar	1	0	1	0	1	0	1	0	4	3
Uchchhal	1	0	1	0	1	0	1	0	4	3
Songadh	1	1	1	0	1	0	1	0	4	4
Vyara	1	0	1	0	1	0	1	0	4	2
Valod	1	0	1	0	1	0	1	0	4	4

Source: CDHO, Tapi

S= Sanctioned Posts, F=Filled Posts

Above table shows that there are very few specialist doctors are available at CHCs. Our field visits to different CHCs revealed that they are well-equipped with equipment.

Moreover, there are 7 medical officers, 9 specialist doctors and 215 trained nurses in the District Hospital of Tapi¹. However, there are 9 posts sanctioned for medical officers, 24 for specialist doctors and 241 for trained nurses. This indicates that there is a requirement to fill in the sanctioned posts for efficient functioning of different healthcare units.

¹ Figures received from CDHO, Tapi as on March 31, 2014.

3.2 Rural Health Care: A Case Study

Songadh CHC

The project team visited two CHCs and one PHC. The performance of CHC is quite satisfactory. In past couple of years, health care through CHCs have improved significantly. Doctors, patients and relatives of the patients told this while interacting with the project team.



FIGURE 3.1: SONGADH CHC

The project team visited the CHC in Songadh taluka at 8:00 PM. Doctors were available and were giving treatment to patients. In an interview with the Resident Medical Officer of Songadh CHC, the project team was informed that on an average 200 patients from Uchchhal, Vyara and Songadh come to this CHC every day. The number of doctors and paramedical staff in this CHC was as per the sanctioned posts. There were one Resident Medical Officer (RMO), 1 superintendent and 3 assistant doctors. There were 6 sisters, 1 brother (nurses), 1 head clerk, 3 lab technicians and 1 pharmacist. The ophthalmologist visits the CHC twice a week.

There were two wards – one for males and one for females with a total of 30 beds in this CHC. Medicines were allocated in proportion with the number of beds. There was sufficient stock of medicine to cater to the patients of 30 beds and of OPD. But in case of short supply of medicines, which is a rarity, the CHC gets medicines under the Rogi Kalyan Yojana of the Government. Under this scheme, even minor surgery is done free of cost for families living Below Poverty Line (BPL) and Rs.1000 for people not belonging to BPL category. However, these surgery charges are not mandatory to be charged to patients.

The CHC had a mobile van, which even served as ambulance in case of need. This CHC did not have a sanction post for pediatric, gynecologist and a surgeon. These three posts are sanction only in those CHCs having 50 beds or more.

The CHC recorded more cases of Sickle Cell Anaemia. The doctor informed that 30-34 per cent of tribal population are affected with Sickle Cell Anaemia. The CHC did not record a single case of Swine Flu (N1H1) and there are relatively less cases of leptospirosis.

Uchchhal CHC

The project team visited another CHC in Uchchhal taluka on the next day morning. This CHC had only one superintendent and one assistant doctor. There were less number of doctors, as some positions were vacant. Ophthalmic assistant visited the CHC twice a week and even performed cataract operations, whenever required. There was sufficient paramedical staff and the CHC was equipped with latest equipments. The staff of this CHC knew how to operate the latest equipments.

FIGURE 3.2: UCHCHHAL CHC: ELEVATION OF BUILDING (LEFT) AND PATHOLOGY LAB (RIGHT)



There were on an average, 80-90 outdoor patients per day. This CHC also had 30 beds and medicines were supplied to CHCs in sufficient quantities.

FIGURE 3.3: 108 EMRI AMBULANCE IN CHC UCHCHHAL PREMISES



The discussion with one of the senior lab technicians revealed that on an average, 45 patients per month are suspected to be suffering from tuberculosis (TB), out of which 6-7 patients test positive for TB. He informed that the major causes of TB in these patients are malnutrition and bad habits. These investigations are done under the Revised National Tuberculosis Control Programme (RNTCP). The patients in whom TB is detected, are referred to PHCs along. Cases of malaria are recorded more in rainy season. People were aware about 108 ambulance services but were

found to be using these services even for trivial illness. The 108 EMRI ambulance shown in was found in the premises of Uchchhal CHC.

The discussion with patients in CHCs revealed that they were satisfied with the treatment, services, availability of medicines and timings of the CHC. They mentioned that they have to wait in long queues for getting examined by the doctor. However, they did not find it troublesome to wait in long queues despite illness.

Bhadbhunja PHC

The project team then visited a PHC in Bhadbhunja in the afternoon hours. This PHC required attention to improve infrastructure facilities and appointment of Female Health Workers (FHW) / Accredited Social Health Activists (ASHA) workers and Male Health Worker (MHW). The PHC did not have a separate building. The building of one of the sub-centres was allocated to this PHC. This PHC remained open from 8:00 AM to 6:00 PM. The PHC has one pharmacist. This PHC covers 17 villages and 10 sub-centres.

The major activities of PHC are:

- Prenatal and antenatal care (PNC and ANC).
- Immunization of infants.
- Family Planning.
- Treatment of children under the Integrated Child Development Scheme (ICDS).
- Testing for TB, leprosy etc. by taking samples on slides.
- Visit to sub-centres and Anganwadis under the purview of this PHC.

However, the doctor informed the team that in some villages *e.g.* Tuti some people were reluctant to give immunization vaccines to their infants, despite being explained by the FHWs about its importance. The number of patients availing the services of PHC range from 300 to 500 per day on Monday, Wednesday and Thursday. On remaining days, there are on an average 100 patients. The patients visit the PHC in event of fever, cold and cough, minor injuries etc. The infrastructure required to keep indoor patients in the PHC also requires immediate attention. The PHC does not have its own ambulance but uses its car to in case of emergencies. The cleanliness and hygiene in the PHC were satisfactory.

3.3 Access to Safe Drinking Water

A person requires around 20 to 50 liters of water per day for the purpose of drinking², cooking, cleaning and washing. The benefits of improved health are accrued in the form of lesser number of work days lost, enhanced productivity, greater opportunities and longer working lives. Therefore, apart from providing easy access to good health care infrastructure, it is necessary that hygienic conditions are provided to the citizens as a preventive measure. Safe drinking water and clean, hygienic surroundings of the home play a crucial role in prevention of certain diseases that are water-borne or air-borne.

Moreover, provision of clean drinking water has been given priority in the Constitution of India, with Article 47 conferring the duty of providing safe drinking water and improving public health standards to the state. This section describes the situation of water supply and sanitation in Tapi.

Inadequate supply of safe drinking water could be the reason of many diseases like diarrhea, dysentery, cholera, typhoid etc. These diseases are transmitted either by consuming contaminated water or through person-to-person contact.

As per census 2011, only around 26 per cent households have access to tap water. This is much lower than the percentage of households having access to tap water in Gujarat (69.03 per cent). Tapi is a tribal district and three out of five talukas are rural. There are no urban area in Nizar, Uchchhal and Valod. The characteristic of rural area is that houses are sparsely distributed. This makes it difficult to lay pipelines and give connections from the pipelines. Thus, a large proportion of rural population use hand pumps for their water needs. In Tapi, majority of households (55.48 per cent) are dependent on hand pumps for water needs. Among which, majority is rural households (60.54 per cent) who uses hand pumps for drinking water. In urban area, only 7 per cent households are using hand pumps. In rural areas, well/tube well/bore well are also a popular source for drinking water as per census-2011 data.

² Drinking water as defined in Census 2011.

TABLE 3.5: ACCESS TO DRINKING WATER BY MAIN SOURCE AND LOCATION

State / District	T/R/U	Tap Water	Well	Hand Pump	Tube / Bore well	Spring	River / Canal	Tank / Pond / Lake	Other Sources
Tapi	T	25.99	9.74	55.48	8.25	0.09	0.24	0.01	0.21
	R	19.63	10.58	60.54	8.67	0.10	0.26	0.01	0.21
	U	86.87	1.70	7.04	4.21	0.03	0.01	0.01	0.14
Gujarat	T	69.03	7.09	11.62	9.60	0.09	0.34	0.22	2.00
	R	55.77	12.11	18.23	10.88	0.14	0.54	0.36	1.97
	U	85.58	0.83	3.37	8.01	0.03	0.09	0.05	2.04

Source: Census 2011

Swajaldhara Scheme and its Impact

Government has implemented Swajaldhara and Sector Reform schemes. These schemes were implemented in December 2002. The Swajaldhara Scheme is a paradigm shift from supply driven to demand driven, centralized to decentralized implementation and Government's role from service provider to facilitator. It is based on empowerment of villagers to ensure their full participation in the project through a decision making role in the choice of the drinking water scheme, planning, design, implementation, control of finances, management arrangements including full ownership of drinking water assets. The community shares partial capital cost either in cash or kind or both and assumes full responsibility of operation and maintenance (O&M). An integrated service delivery mechanism is also promoted which includes taking up conservation measures through rainwater harvesting and ground water recharge systems for sustained drinking water supply.

Vanbandhu Kalyan Yojana

Vanbandhu Kalyan Yojana, also known as the Chief Minister's 10-point programme for the development of tribal areas, was launched by the Chief Minister in February 2007. The strategy for the 10-point programme is result oriented with time-bound interventions and has a component of people's participation. The programme is quarterly reviewed by the Chief Minister. Provision of safe drinking water is one of the 10-points of the scheme. Under this programme, several new projects have been initiated to improve the quality of drinking water

availability. These initiatives have made good impact in improving access to drinking water.

Assured and adequate supply of water to families reduces the drudgery faced by women in collecting water. In some cases, women are compelled to travel long distances, often in difficult circumstances, to meet the water requirements for their families.

Watershed Development for Conservation and Supply of Safe Drinking Water

The Department of Land Resources in the Ministry of Rural Development is administering three area- based watershed programmes for development of wastelands/degraded lands namely Drought Prone Areas Programmes (DPAP) since 1973-74, Desert Development Programme (DDP) since 1977-78 and Integrated Wastelands Development Programme (IWDP) since 1989-90 to check the diminishing productivity of wasteland and loss of natural resources.

The Department of Land Resources has brought out a new initiative called Hariyali with an objective of effective implementation of Watershed Development Programmes. The projects under this initiative are implemented in accordance with the guidelines for Hariyali from 1 April 2003. Projects sanctioned prior to this date shall continue to be implemented as per the Watershed Development Guidelines of 2001.

Government has initiated number of schemes to improve access to drinking water. During our field visits, we found that infrastructure is not properly maintained or utilized for various reasons. Hand pumps are not properly working. Hand pumps are installed under various schemes. In some schemes, the provision for maintenance is not made, so in even of technical or other fault, it is abandoned. Water storage overhead tanks are found unused in some villages. Necessary electrical work was not done to draw the water for overhead tanks. Carelessness or indifferent attitude of those who are responsible for such important task can frustrate the efforts of the government.

In coastal villages, where piped water was supplied to households, water was not regularly available. The people informed us that water was diverted to fish ponds. The government may think of developing some mechanism for the surveillance of water distribution system.

Impact of above schemes: all the above mentioned schemes has well impact on the improvement overall drinking water facility of the district as well as state. As per DWSU data (as on year ended March 31, 2015), the number of households have access to tap water

connection has increased to 54.71 per cent during the current year in Tapi which is commendable improvement as compared to 25.99 per cent as per Census 2011 (Table 3.6).

TABLE 3.6: HOUSEHOLD CONNECTION REPORT OF DWSU AS ON MAY 31, 2015

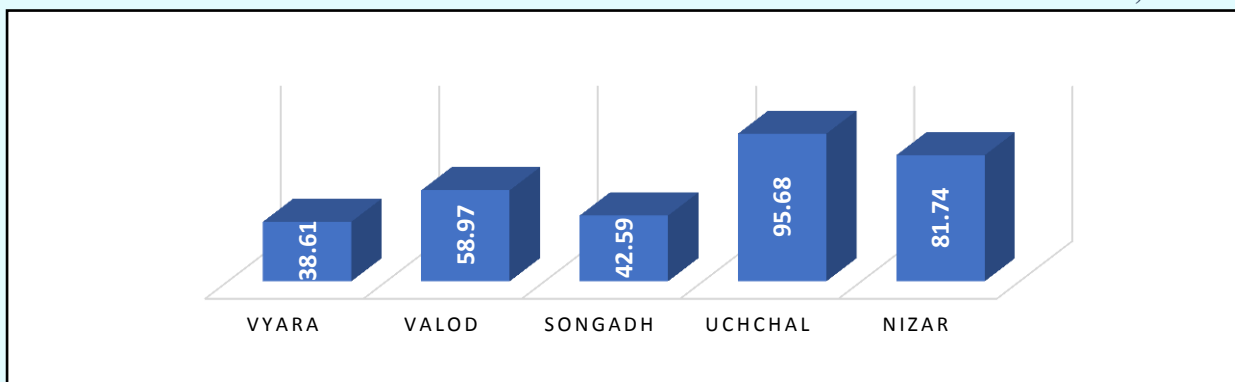
Taluka	House Hold	House Connectivity Done	% of H2H* Connection
Tapi	181662	99389	54.71
Vyara	62453	24110	38.61
Valod	21782	12844	58.97
Songadh	51068	21751	42.59
Uchchal	20012	19148	95.68
Nizar	26347	21536	81.74

Source: DWSU, Tapi (Vyara)

NOTE:* H2H: House-to-house

As per figure 3.4, Uchchal taluka is having highest number of H2H connection (95.68 per cent), followed by Nizar. However, the quality of ground water is an important issue from the preventive health care perspective. The problems of salinity, fluorides, nitrates and arsenic are found in ground water, which poses serious health hazards.

FIGURE 3.4: PERCENTAGE OF H-2-H CONNECTION UNDER DWSU AS ON MARCH 31, 2015



Source: DWSU, Tapi (Vyara)

3.4 Drainage and Sanitation

A well-designed and well-managed drainage³ and sanitation⁴ system is as crucial to hygienic living as access to safe drinking water and other preventive health measures. Open drainage or absence of sanitation leads to foul smell in the surroundings of the households and are a breeding site for mosquitoes. Absence of drainage leads to spilling of dirty water on the ground,

³ Households with drainage connection as defined in Census 2011.

⁴ Households with sanitation facilities as defined in Census 2011.

of which some water might get filled-in in some low-lying areas or pot holes on the streets / roads or may percolate with ground water, thereby causing threat to purity of ground water. Draining the water directly in rivers or other sources of drinking water like ponds can be harmful. Indiscriminate use of open space for sanitation, it leads to degradation and erosion of land, spread foul smell and it can be a fertile ground for reproduction of disease causing germs. In most communities, the play area of children are no different from the area of open defecation. Children are more vulnerable to infection than elderly people. It is therefore, necessary to develop adequate infrastructure for sanitation.

Improvements in sanitation can also have a major impact on reduction in incidence of diseases. In rural areas, where public defecation sites are generally farther from homes, latrines (while still important) are likely to have less effect on occurrence of disease. It is difficult to directly measure the effect of excreta removal on incidence of diseases but households and communities with adequate sanitation tend to be more hygienic in all aspects of their lives. Piped sewer system / water closet is the most hygienic form of sanitation. However, the sparsely dispersed homes in rural areas makes it difficult and economically unviable to lay drainage lines.

TABLE 3.7: PERCENTAGE OF HH BY AVAILABILITY OF TYPE OF LATRINE FACILITIES

State / District	Total / Rural / Urban	HH having Latrine Facilities within Premises	No Latrine within premises	
			Public Latrine	Open Defecation
Tapi	Total	28.14	1.36	70.51
	Rural	22.98	1.16	75.86
	Urban	77.46	3.25	19.28
Gujarat	Total	57.35	2.25	40.41
	Rural	33.04	1.19	65.76
	Urban	87.70	3.56	8.74

Source: Census 2011

As per census 2011, the percentage of households having latrine facility at home is 28.14 per cent in Tapi. This is much lower in comparison with Gujarat, where 57.35 per cent households are having toilets in their homes. As compared to 40.41 per cent households of Gujarat who go for open defecation, around 70 per cent of household in Tapi go for open defecation.

Total Sanitation Campaign and Nirmal Gram

Total Sanitation Campaign (TSC) is an initiative of the central government to ensure sanitation facilities in rural areas with broader goal to eradicate the practice of open defecation. TSC as a part of reform principles was initiated in 1999 when Central Rural Sanitation Programme was restructured where a nominal subsidy in the form of incentive is given to rural poor households for construction of toilets. TSC emphasizes on Information, Education and Communication (IEC), Capacity Building and Hygiene Education. The key intervention areas are Individual Household latrines (IHHL), School Sanitation and Hygiene Education (SSHE), Community Sanitary Complex, Anganwadi toilets supported by Rural Sanitary Marts (RSMs) and Production Centers (PCs). To give fillip to this endeavor, the government has launched Nirmal Gram Puraskar to recognize the efforts of individuals and institutions who have contributed significantly in ensuring full sanitation coverage in their area of operation. A new scheme has been introduced in 2007-08 to ensure that village is properly cleaned, there may arise good spirit on cleanliness, level of cleaning as well as quality of rural life may improve. Campaign of sanitation and cleanliness is being done through Nirmal Gram Yojana. It has helped to sensitize people living in rural area about the importance of sanitation. The project is being implemented in rural areas taking district as a unit of implementation.

TABLE 3.8: TALUKAWISE NIRMAL GRAMS (2014)

District / Taluka	Number
Tapi	161
Nizar	19
Uchchhal	22
Songadh	41
Vyara	50
Valod	29
<i>Source: TSC Office</i>	

During our field visits it was however observed that many anganwadis have baby toilets, which is suitable for use only by the kids below 5 years of age. Moreover, some of the school toilets are also require maintenance and water connection. Usability of toilets is a major concern in many anganwadis as well as homes. Many people used toilet for storage purpose. This defeats the whole purpose of constructing toilets to improve sanitation.

3.5 Health Burden

Government initiatives in the public health sector have shown noteworthy success over time. Many diseases like Smallpox and Guinea Worm Disease have been eradicated. Leprosy is expected to be eliminated in the foreseeable future as envisioned by the national health policy. There has been substantial drop in the Total Fertility Rate (TFR) and Infant Mortality Rate (IMR). Leptospirosis and Sickle Cell Anaemia require attention in Tapi district. Leptospirosis is associated with working bare-feet in the agricultural fields. It is caused and spread by rodents. Sickle cell anaemia is a genetic disorder and very specific to tribes in Tapi district. This section discusses incidence of various deadly diseases like leprosy, leptospirosis and sickle cell anaemia. Government has undertaken a drive for early detection and cure of tuberculosis. The state of TB in the district is also discussed here.

Another area of concern in the public health care system is the persistent deficiencies of nutrient, especially among poor women and children. Results of Integrated Child Development Scheme (ICDS) and associated schemes is also discussed in this section.

3.5.1 *Leptospirosis*

Leptospirosis is one of the dreaded diseases in South Gujarat region. It is caused by a bacteria called spirochete. Leptospirosis is transmitted to humans via urine or other fluids of dogs, rats, foxes, rabbits, cows, sheep etc. that can contaminate food, water or soil. Consuming contaminated food, water or exposure of contaminated soil to skin can cause leptospirosis. Symptoms of leptospirosis range from mild flu-like fever to meningitis, liver damage and renal failure. Diagnosis of leptospirosis is difficult because of wide range of symptoms. Moreover, initial phase of leptospirosis is asymptomatic. Symptoms appear only during the second stage of leptospirosis, in most cases. Treatment of leptospirosis is complicated and only animal vaccines are available, and that too for few strains only. Leptospirosis can be fatal, if timely treatment is not availed. The risk of leptospirosis is high for veterinarians, slaughterhouse workers, farmers, sewer workers, water-sport players. Table 3.9 discusses the state of leptospirosis in Tapi.

TABLE 3.9: INCIDENCE OF LEPTOSPIROSIS IN TAPI

Taluka / District	2009		2010		2011		2012		2013		2014	
	C	D	C	D	C	D	C	D	C	D	C	D
Gujarat	201	35	225	49	611	124	919	178	398	38	NA	NA
Tapi	40	8	112	22	293	50	73	12	69	11	34	4
Nizar	0	0	0	0	0	0	0	0	0	0	0	0
Uchchhal	0	0	6	2	1	1	2	1	0	0	0	0
Songadh	7	1	9	3	22	3	9	1	3	0	5	2
Vyara	33	7	78	15	197	33	41	6	47	9	24	1
Valod	0	0	19	2	73	13	21	4	19	2	5	1

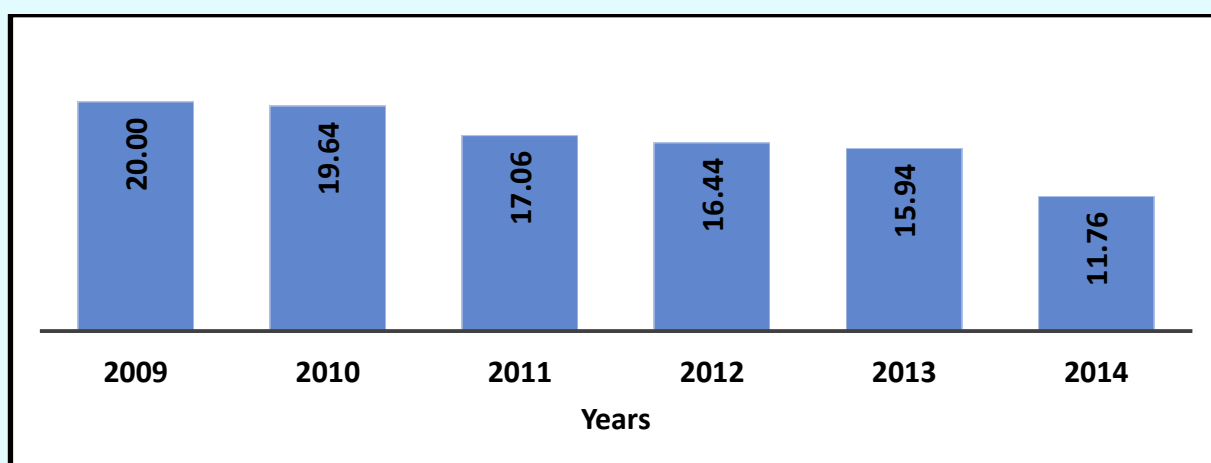
Source: CDHO, Tapi (Vyara)

* C = Cases, D= Deaths, NA= Not Available

One can see from the above table that there is a sharp decline in the cases of leptospirosis since 2011. Till 2011, the cases of leptospirosis in Tapi were increasing. It is worth noting that there are no cases of leptospirosis in Nizar. In Uchchhal also, there are no cases of leptospirosis after 2013. Maximum cases of leptospirosis are in Vyara.

Number of deaths out of total cases is the fatality rate. Fatality rate has come down drastically in recent years. One may see that even in Vyara, where there are maximum cases of leptospirosis, the fatality rate is very low. However, the fatality rate as well as number of cases has to reduce to zero. An overall trend of fatality rate of leptospirosis in Tapi is shown in Figure3.5:

FIGURE 3.5: FATALITY RATE OF LEPTOSPIROSIS IN TAPI [2009 TO 2014]



Source: Compiled from CDHO, Tapi (Vyara)

Government has taken active steps to create awareness about the causes of leptospirosis and about the preventive measures. Agriculture workers are advised to wear gumboots and / or

apply iodex while working on field so that bacteria does not enter into the body through cuts in the ankles or other exposed parts of legs. However, it was observed that agricultural workers did not prefer to put on gumboots as it would get stuck in mud while working on fields. Applying iodex was not only inconvenient but also expensive to those who barely meet their minimum requirements. Government may actively intervene to keep leptospirosis under control by developing vaccinations. Use of preventive drugs can also be administered to keep a check on leptospirosis.

3.5.2 Sickle Cell Anaemia

Sickle cell anaemia is a genetic disorder of haemoglobin, where the shape of the red blood cells is of sickle shaped. Normal blood cells are disc-shaped. Haemoglobin is that part of the red blood cells which carries oxygen from lungs to different parts of the body. Because of the sickle shape, the flexibility of these cells is reduced and in extreme cases, they may even cause blockage. As a result, the patient experiences breathlessness, fatigue, exercise intolerance. In case of children, it results in delayed growth. Children having sickle cell anaemia are at a higher risk of infections, including life-threatening blood infections. Sickle cell anaemia's symptoms usually show up in childhood and the average life expectancy of sickle cell anaemic patients is 42 for males and 48 for females. Sickle cell disease is commonly observed in places where malaria is prevalent.

Sickle cell anaemia is present right at birth but many infants do not show any symptoms until the age of 4 months. The symptoms of sickle cell anaemia comprise symptoms of anaemia like dizziness, headache, shortness of breath, coldness in hand and feet; and of sudden pain throughout the body. The duration of pain is usually 5 to 7 days. Lack of awareness and timely diagnosis are major cause of deaths due to sickle cell anaemia. Talukawise incidence of sickle cell anaemia is shown in table Table3.10.

It can be observed from table 3.10 that incidence of sickle cell anaemia is maximum in Valod and minimum in Nizar. However, the absolute figures of each taluka are very high. Government has already started taking measures to handle the problem of sickle cell anaemia in the district.

The state health department has now set up screening and counselling centres to control and prevent the incidence of sickle cell anaemia in Tapi. As part of the drive, three types of laminated colour coded cards are distributed, depending on the shape of the haemoglobin cells. An all-white card indicates normal haemoglobin, half white-half yellow, sickle cell trait and

all yellow, sickle cell disease. To ensure that children are not born with a sickle cell trait or disease, unmarried boys and girls are advised to match their cards before deciding to marry each other. Yellow card holders are advised not to marry a yellow card holder. Councilors advise that a half-white half-yellow cardholder or an all-yellow cardholder should marry only to an all-white cardholder. Special emphasize is given in 10-point programme envisaged by the Chief Minister to tackle the problem of sickle cell anaemia.

TABLE 3.10: INCIDENCE OF SICKLE CELL ANAEMIA IN TAPI [2009 TO 2014]

Taluka / District	Population		Sickle Cell Anaemia per lac Population			
	2011	2010	2011	2012	2013	2014
Tapi	807022	4268.29	6190.66	10638.25	44963.95	16291.87
Nizar	129969	3866.31	4484.92	13043.88	50184.27	684.01
Uchchhal	88416	4674.49	4813.61	89.35	52016.60	12978.42
Songadh	229782	4274.05	4818.04	0.00	53241.77	20566.01
Vyara	268289	2708.27	6982.02	25708.47	27995.56	21969.22
Valod	90566	9055.27	11121.17	241.81	59851.38	14262.53

Source: CDHO-TAPI (Vyara)

3.5.3 Leprosy

Leprosy is referred as *kusht rog* in India. In this critical disease patient suffers from physical, psychological and social pains. Traditionally society has been very hostile towards leprosy patient and they are force to remain isolated, increasing their suffering. Government of India initiated National Leprosy Control Programme in 1955 to control prevalence of leprosy in India. In 1991, WHO and its member states committed themselves to eliminate leprosy as public health problem by year 2000 and bring down leprosy cases below 1 case per 10000 population. In spite of this, the incidence of leprosy in Tapi has remained high. The talukawise incidence of leprosy from 2009 till January 2014 is given in table 3.11:

One can see from table Table3.11 that the incidence of leprosy is not only higher than one in all talukas but the incidence of leprosy is showing an increasing trend in past six years. Maximum leprosy cases per 10000 population are observed in Valod and minimum in Songadh.

Government had started the National Leprosy Elimination Programme (NLEP) – a World Bank assisted programme – in 1983 in a phased manner. Under this programme, Multi-Drug Therapy was introduced at district level. Moreover, high endemic districts were identified and a Special Action Plan for Elimination of Leprosy (SAPEL) was devised to detect leprosy cases in these districts and in urban slums. Treatment for leprosy is now available at all PHCs, CHCs and

sub-centres and MDT is made available absolutely free of cost to the patients. Government has also launched Block Leprosy Awareness Campaign (BLAC), under which Leprosy Counseling Centres (LCC) are set up they work for the detection of leprosy cases and providing treatment to leprosy patients. Government of Gujarat has launched a *Kushtrog Kayakalp Karyakram*. Leprosy is known for deformities and late detection of leprosy adds to this problem. *Kushtrog Kayakalp Karyakram* focuses on reconstructive surgery and provision of micro-cellular rubber footwear to patients having foot ulcer deformities. Disability Care Programme is implemented in a phased manner to prevent the development of disabilities and to provide quality disability care to old-age patients.

TABLE 3.11: INCIDENCE OF LEPROSY IN TAPI [2009 TO 2014]

Taluka / District	Leprosy per 10000 Population				
	2010	2011	2012	2013	2014
Gujarat	0.77	0.81	0.96	0.83	0.85
Tapi	9.37	10.02	13.06	3.75	17.16
Nizar	4.77	4.92	5.77	1.46	6.23
Uchchhal	7.46	8.94	11.31	4.98	15.83
Songadh	3.09	3.39	4.87	1.61	5.61
Vyara	4.36	5.22	6.26	1.71	6.00
Valod	11.70	10.49	11.59	2.98	12.04
<i>Source: CDHO-TAPI (Vyara)</i>					

3.5.4 Revised National Tuberculosis Programme (RNTCP)

Tuberculosis (TB) an infectious air-borne disease is caused by bacteria – mycobacterium tuberculosis. It is contagious and can spread from person to person when tuberculosis patients cough or sneeze. Tuberculosis mainly affects the lungs; but it can also affect other parts of the body like brain, bones and glands. Tuberculosis is a major public health problem in India and WHO estimates that one-fifth of the total tuberculosis cases in the world are from India. In order to control the spread of tuberculosis, National Tuberculosis Control Programme was introduced in 1962 and was subsequently revised in 1993. The Revised National Tuberculosis Control Programme (RNTCP) was then re-introduced in 1997. Phase – II of RNTCP was implemented in 2005 with an objective to achieve the TB-related targets of Millennium Development Goals. By 2006, all 633 districts of India are covered under RNTCP. The structure of the RNTCP comprises of five levels – National, State, District, Sub-district and Peripheral health institutions. At the State level, the State Tuberculosis Officer is responsible for planning,

training, supervising and monitoring the programme in their respective states. The District TB Officer has the overall responsibility of physical and financial management of RNTCP in the respective districts. An innovation of RNTCP is the creation of sub-district “Tuberculosis Unit” supervisory and monitoring team, for an approximate population of 500,000, (250,000 in tribal and difficult areas), comprising of a designated Medical Officer – TB Control, a Senior Treatment Supervisor and a Senior TB Laboratory Supervisor, based in either a Community Health Centre, Taluka Hospital or Block Primary Health Centre. WHO has recommended to adopt “The Stop TB Strategy”, over and above Directly Observed Treatment Short Course (DOTS). Table gives details of TB cases and resultant deaths.

Maximum TB cases are observed in Vyara and minimum in Uchchhal. To increase awareness among community and other health care providers, various programmes are arranged like video shows, community meetings, patient – service provider interaction meetings, DOTS-Prachar by audio van, school children quiz, puppet-shows, public announcements through auto- rikshaw, radio-talks, TV programmes, press-notes, articles in Indian Medical Association (IMA) bulletin.

TABLE 3.12: INCIDENCE OF TUBERCULOSIS AND RESULTANT DEATHS

Taluka / District	2010		2011		2012		2013		2014	
	C	D	C	D	C	D	C	D	C	D
Gujarat	77839	N.A	74867	N.A	72554	N.A	74086	N.A	74325	N. A
Tapi	1305	73	1289	73	1311	55	1198	65	1260	
Nizar	180	10	163	7	182	9	157	9	164	
Uchchhal	135	8	134	4	140	5	130	1	162	
Songadh	338	15	364	14	352	9	309	14	335	
Vyara	477	30	469	30	479	23	440	34	437	
Valod	175	10	159	18	158	9	162	7	162	

Source: CDHO-TAPI (Vyara)

Note: C- Cases, D-Deaths, N.A-Not Available

3.5.5 Nutrition

Adequate nutrition is critical to human body development. First two years of life are important for optimal growth, health and development. Appropriate breastfeeding and complementary feeding are two most critical practices during this period which lays the foundation of good health for future citizens. Children are vulnerable to micronutrient deficiencies, childhood illnesses such as diarrhoea and acute respiratory infections (ARI) and growth retardation. The nutritional status of children is strongly related to nutritional status of mother. A woman with

poor nutritional status has a greater risk of having a baby with low birth weight and adverse pregnancy outcomes.

Under nutrition is a condition resulting from inadequate consumption, poor absorption or excessive loss of nutrients. It is a serious public health challenge associated with high rates of mortality and morbidity and affected by poverty, improper infant/child feeding and care practices, poor sanitary and environmental conditions and poor access to quality health, education and social services.

To assess nutritional status, National Family Health Survey-3(NFHS-3) included an anthropometric component, in which all children under five years of age were weighed and

measured. Three standard indices of physical growth are used to describe the nutritional status of children:

- Height-for-age (stunting)
- Weight-for-height (wasting)
- Weight-for-age (underweight)

The National Family Health Survey (2005-06) data on the nutrition status of children in Gujarat shows that 41.1% of under-3 and 45% under five children are underweight. Amongst under-3 children, 49.2% are stunted and 19.7% are wasted. Seventy percent of children (6-59 months) and 55.3% of women in Gujarat suffer from anaemia. Prevalence of anaemia is higher in women from Schedule tribes. Thus, serious and concerted efforts have to be made to address this issue.

The task of improving the health and nutrition status of the community requires a Multi-sectoral approach and convergent planning. Gujarat Government has taken various initiatives to fight against under nutrition. ICDS mission (Mission Balam Sukham) was launched on 18th September, 2012 by Honourable Chief Minister of Gujarat with an aim to combat malnutrition and to bring all the different inter-related departments under one umbrella. Strategy focuses on both preventive and curative aspects.

The percentage of children breastfed within one hour of their birth out of the reported live births and percentage of new born weighing less than 2.5 kg are given in below table 3.13:

TABLE 3.13: NEW BORN CARE

New Born Care	Tapi	Gujarat
Newborns breastfed within 1 hr of birth (to reported live births)%	96.49%	97.66%
Newborns weight less than 2.5 kg (to total new borns weight at birth)%	21.39%	17.06%
<i>Source: HIMS 2014</i>		

Above table shows that the percentage of new borns breastfed within one hour of their birth is less than the state average. And percentage of new borns weighing less than 2.5 kg is higher than the state average. Thus, measures are required to be taken in Tapi to improve the nutritional status of mother during pregnancy. Moreover, awareness about breastfeeding should be created to increase the percentage of breastfed children with one hour of birth.

Government has implemented the Integrated Child Development Scheme (ICDS) to improve the health of girl child right from her adolescence to motherhood. The same programme also targets to provide supplementary nutrition to children in 0-6 years age-group.

Integrated Child Development Services

ICDS scheme launched on 2nd October 1975 is one of the world’s largest programs and a holistic approach for child health, nutrition and development. It aims to lay the foundation of proper psychological, physical and social development of the child and to reduce any morbidity and mortality resulting from malnutrition. An integrated package of services comprising of supplementary nutrition, immunization, health check-up, referral services, pre-school non-formal education and nutrition & health education is being provided to the beneficiaries through a network of Anganwadi Centres. Beneficiaries include children below 6 years, adolescent girls and pregnant and lactating mothers.

Tapi is a tribal district with majority of population belonging to BPL. Tribal people living in the interiors have poor access to health services and have poor health seeking behavior .Dietary habits of the population are influenced by tribal culture leading to intake of routine food which does not fulfill the nutritional requirement of body. All these affect the nutritional status of the population especially of under-5 children. Despite these issues, ICDS scheme is running successfully in the district and its coverage has increased steadily. Percentage of normal weight children is higher in Tapi as compared to state average. (HMIS, 2014 and ICDS Tapi).

There are 1049 AWCs operational across 7 blocks of Tapi, of which 44 are mini-anganwadi centres. Seven blocks are: Vyara-1(176), Vyara-2(172), Valod (114), Songadh-1(154), Songadh-2(145), Nizar (173) and Uchchhal(115).

Ninety two per cent of the Anganwadi centers operate in their own buildings, rest operate from government buildings, primary school building or worker/helper home. As far as providing the basic facilities like drinking water and sanitation at AWCs, district has a good record and is regularly taking steps to improve the facilities. The percentages of AWCs having drinking water and sanitation facilities at their own premises are 68% and 75% respectively. Other AWCs arrange from nearby school or gram panchayat. Around 72% of the centers have electricity connection. The details of beneficiaries of ICDS are given in table 3.14:

TABLE 3.14: BENEFICIARIES OF ICDS (MPR MARCH 2015)

6m – 3 yrs	3-6 yrs	6 m-6 yrs	Pregnant & Lactating Women	Adolescents Girls	Total SNP Beneficiaries	Target beneficiaries	Coverage
26,137	23,665	49,802	1,0800	9,207	69,809	73,532	95%
<i>Source: Office of ICDS, Tapi (Vyara)</i>							

Take-home ration in the form of Balbhog, Sukhadi, Sheera and Upma is being provided to the beneficiaries. In the morning, Nirdeshk bhojan is being provided to the children of 6 months to 3 years and breakfast by Sakhi Mandal / Matru Mandal to children of 3 yrs to 6 yrs. Fresh cooked meal prepared at Anganwadi centres is being given to children in the afternoon.

Doodh Sanjeevani Yojana: 100 ml fortified, flavored, double pasteurized milk is provided to children of 3-6 years age twice a week. In the year 2014-2015, 3277 children were benefitted from this scheme. At present, this yojana is in Uchchhal block. Planning is in the process for other blocks also.

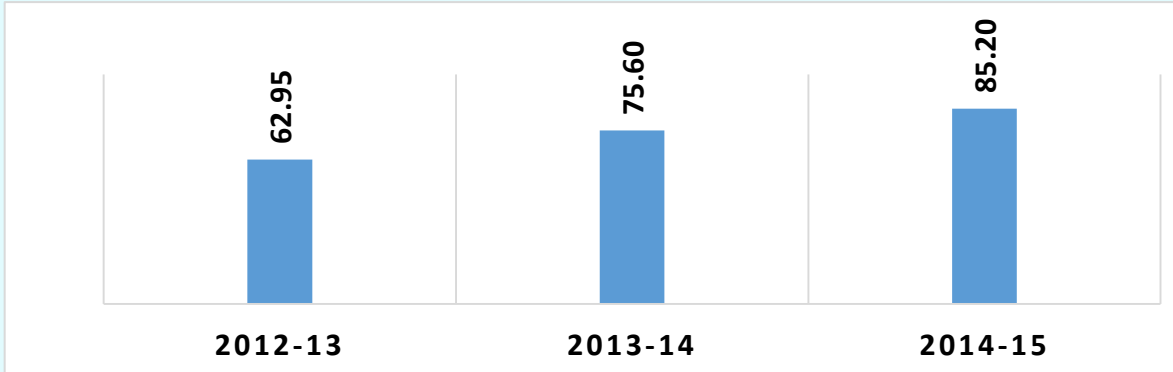
Nutritional Status in the District

ICDS scheme is running effectively in the district and has shown marked improvement in decreasing the malnutrition rate over the past few years. Figure Figure3.6 show that number of normal weight children increased from 63% to 85% in the district in the past three years. Figure (Figure: 3.6)

FIGUREFigure 3.7 and 3.8 show that number of moderately underweight children and severely underweight children decreased from 34% to 13% and from 3% to 1.66% respectively in the

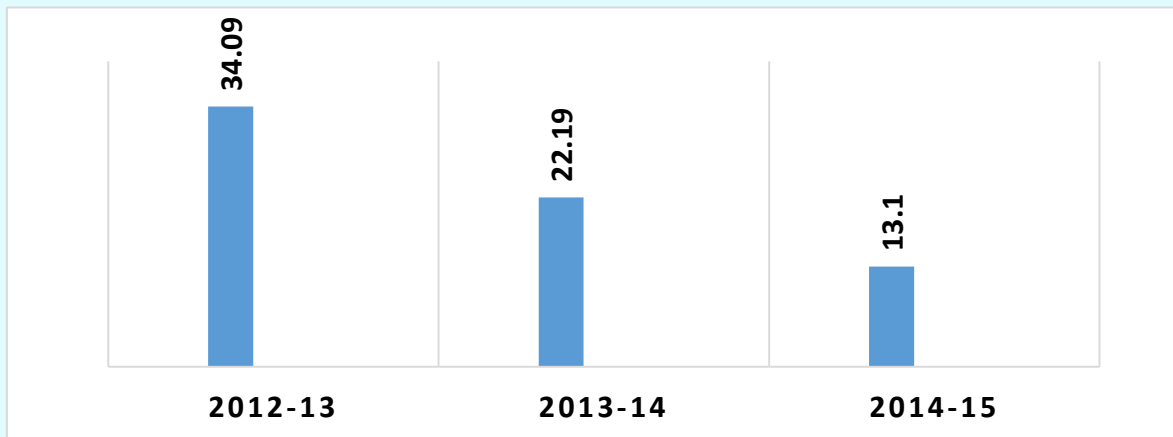
past three years. Despite a tribal district, Tapi is performing better in terms of nutritional status as compared to state average (Figure 3.9).

FIGURE 3.6: PERCENTAGE OF NORMAL WEIGHT CHILDREN (MPR, MARCH 2015)



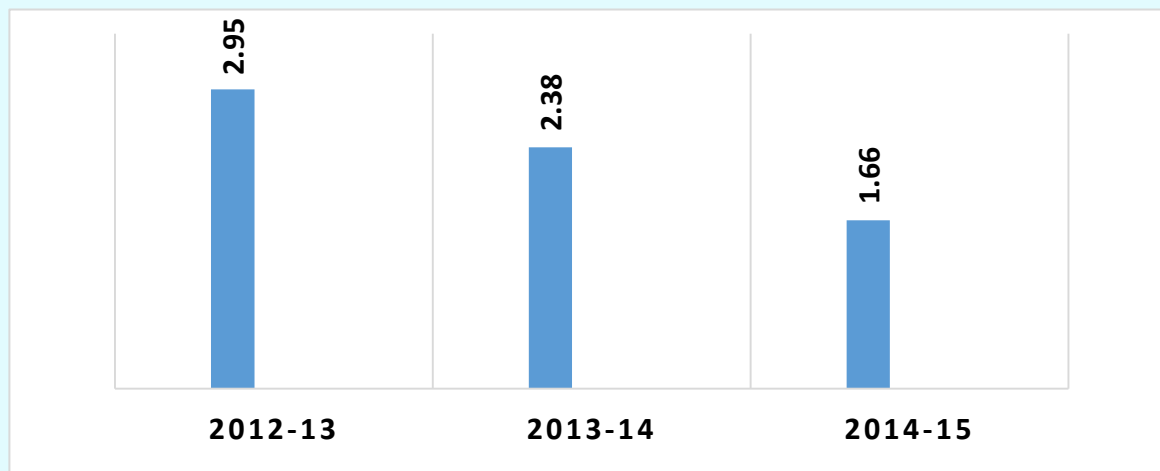
Source: ICDS, Tapi (Vyara)

FIGURE 3.7: PERCENTAGE OF MODERATELY UNDERWEIGHT CHILDREN



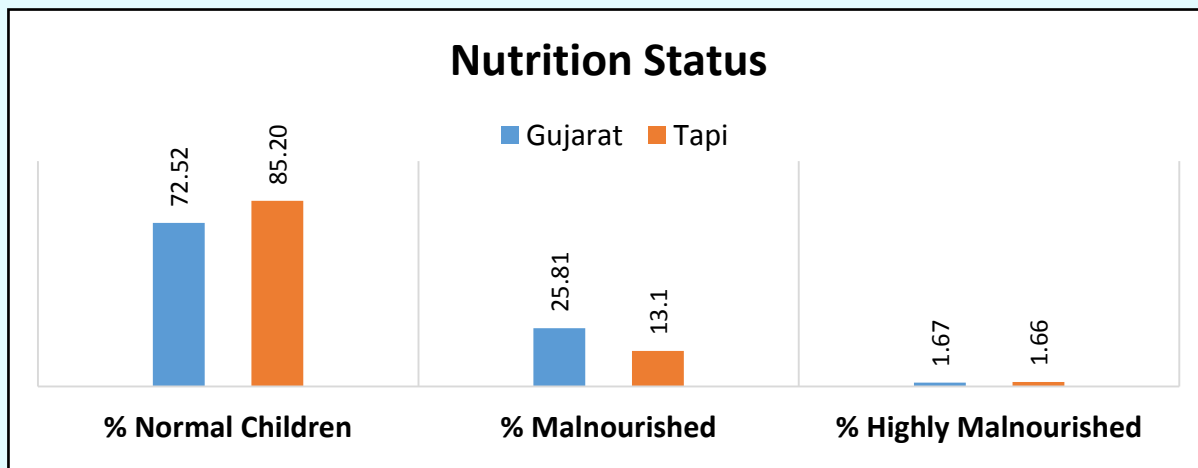
Source: ICDS, Tapi (Vyara)

FIGURE 3.8: PERCENTAGE OF SEVERELY UNDERWEIGHT CHILDREN



Source: ICDS, Tapi (Vyara)

FIGURE 3.9: NUTRITION STATUS OF CHILDREN REGISTERED UNDER ICDS: A COMPARISON OF GUJARAT AND TAPI



Source: HIMS 2014 and ICDS, Tapi (Vyara)

Status of Blockwise Malnutrition of Children (0-6 years) (MPR march, 2015): Block-wise data for malnutrition status of the children (0- 6 years of age) is presented in table 3.15. Of all the blocks, Nizar has the highest percentage of normal weight children followed by Vyara-2. Other blocks also have a good percentage of normal weight children. Vyara-1 is having highest percentage of severe underweight children while Uchchal, Nizar & Songadh-1 are having lowest percentage of sever underweight children (1%) which is below district average (2%).

TABLE 3.15: BLOCK WISE MALNUTRITION OF CHILDREN (0 TO 6 YRS) (MPR, MARCH 2015)

Name (Block)	Total number of child weighed	Normal	%	Moderate under-weight	%	Severe underweight	%
Tapi	51245	43690	85	6705	13	850	2
Valod	4454	3654	82	701	16	99	2
Vyara – 1	7356	6031	82	1104	15	221	3
Vyara – 2	6870	5937	86	806	12	127	2
Songadh – 1	8110	6859	84	1130	14	121	1
Songadh – 2	6026	4941	82	988	16	97	2
Uchchhal	6801	5800	85	930	14	71	1
Nizar	11628	10468	90	1046	9	114	1

Source: ICDS, Tapi (Vyara)

Nutrition and Health Education

Nutrition and health education is imparted to the beneficiaries through monthly sessions, small group meetings of mothers and home visits and on days like Mamta diwas, Annaprashan diwas, Kishori Diwas, Bal diwas and Vatsalya diwas. Education on improved caring practices- breastfeeding, complimentary feeding, and promotion of local nutritious foods is done and counseling of mothers, pregnant and lactating women and adolescent girls is done. Importance of personal and environment sanitation is also being told. Celebration of Rasoi Show and teethi bhojan is an excellent example of community participation and ownership in the district.

Future Action Plan

- A household survey will be done to find out the dietary practices of the tribal community and then to come up with a district-specific intervention to reduce malnutrition.
- Detailed gap-analysis of the infrastructure and other facilities has been completed. Funds from Tribal Sub-Plan(TSP) will be utilized for bridging the gaps observed(like for construction of Anganwadi centers, procurement of equipment, utensils, toys).
- A feasibility study for various PPP options in the district would be conducted and then an operational framework would be developed. A funding proposal for Kakrapar Atomic Power Project (KAPP) would be developed.
- Concept of Smart Anganwadi would be initiated on pilot-basis.

3.6 Maternal Health

Factor, that acts as determinants of safe motherhood are the ante-natal and post-natal medical cares. Ante Natal Care (ANC) is the care of the woman during pregnancy, aim of which is to achieve at the end of a pregnancy a healthy mother and a healthy baby. Minimum Ante Natal Care includes at least three antenatal checkups, at least one tetanus toxoid injection (TT), and supplementary iron in the form of IFA⁵ tablets daily for 100 days. The ante-natal cares of 2013-14 and five years before (2009-10) for the district as well as State have been shown in table

⁵ Nutritional deficiencies among women are often exacerbated during pregnancy because of the additional nutrient requirements of foetal growth; therefore a pregnant woman needs six times more iron than a non-pregnant woman. So receiving iron folic acid tablets/syrup during pregnancy is important.

3.16. It is need to mention here that the district performance for both the indicators is better than the overall state performance.

TABLE 3.16: PERFORMANCE OF ANC REGISTRATION IN PERCENTAGE

District / State	2009-10		2013-14	
	3 ANC To ANC Registration	TT to ANC Registration	3 ANC To ANC Registration	TT to ANC Registration
Tapi	95.29	87.60	89.52	94.49
State	75.40	82.95	74.24	83.98

Source : Health Statistics(2013-14), Commissionerate of Health, Medical Services, Medical Education and Research, Gandhinagar

Above table shows that in 2013-14, close to 90 per cent pregnant women of the district have received 3 checkups while for State figure is around 74 per cent. Again, if we look back for 5 years earlier data for the same, it was 95 per cent for district and about 75 per cent for the State. For district and state it has shown a decline in performance. Another important component of ANC is TT doses during the pregnancy which shows a 7 point increase over the five years for district. During 2009-10 it was 87.60 per cent while during the latest year it has become 94.49 per cent. For State it has shown a moderate improvement (1.03 point) over the five years.

Talukawise performance (table 3.17) of ANC shows that in all the talukas, more than 90 per cent or more pregnant women have registered for ANC. In Vyara, 89 per cent have registered for ANC. This could be because, Vyara is close to Surat and has access to private health care.

TABLE 3.17: TALUKA WISE ANC REGISTRATIONS FOR THE YEAR 2014-15

Taluka /District	Total ANC	ANC-3 Check up Received	3 ANC to Total ANC	TT2 + Booster	TT2 to ANC Reg.
Tapi	12687	11362	89.5	11743	92.5
Nizar	2539	2134	84.0	2306	90.80
Uchchal	1642	1514	92.2	1576	96.00
Songadh	3614	3044	84.2	3393	93.90
Vyara	3761	3516	93.5	3361	89.40
Valod	1131	1154	102.0	1107	97.90

Source: CDHO, Tapi (Vyara)

Institutional Deliveries

Maternal mortality and child mortality are major concerns of the society, though the rate has significantly reduced in past 10 years. However, as discussed earlier in this chapter, ICDS

works towards reducing mortality through taking care of nutritional status of women and children. Schemes like Janani Suraksha Yojana, Chiranjeevi Yojana and Bal Sakha Yojana are intended towards reducing mortality through promoting institutional deliveries. This section discusses the status of institutional deliveries under each of these schemes. Figure 3.10 shows the status of institutional deliveries for past five years. It shows that over the years, Institutional delivery is continuously increasing for the District as well as for the State. Despite a tribal dominate district, Tapi district is not far behind of State average in terms of Institutional delivery. The progress in Institutional delivery over the years is appreciable. During the latest year (2013-14), Institutional Delivery at Tapi district is 93.5 percent while the same is 96.3 percent at State level.

FIGURE 3.10: TRENDS OF INSTITUTIONAL DELIVERY

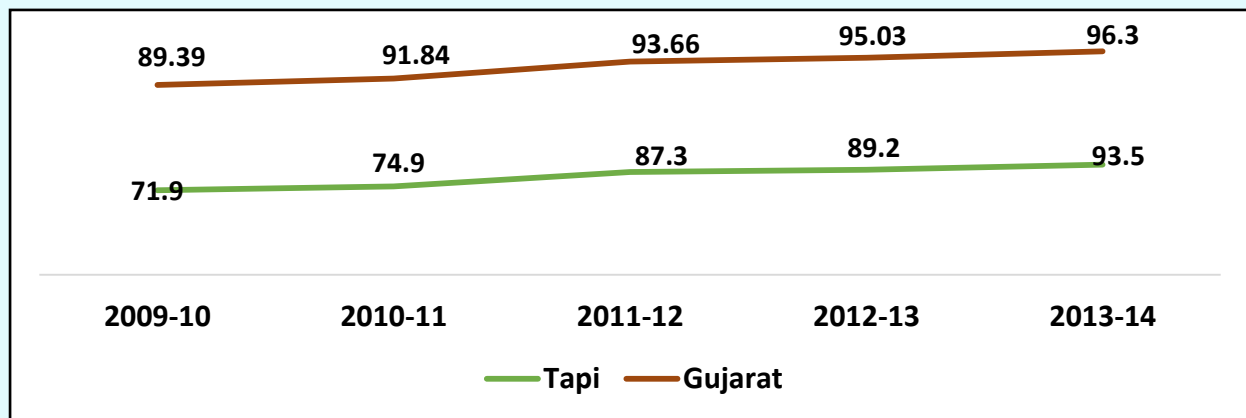


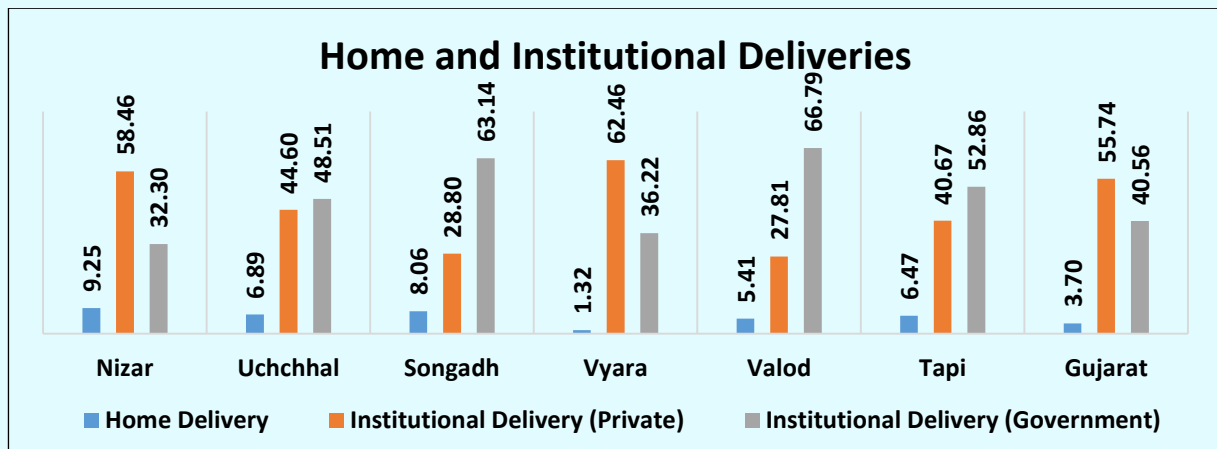
TABLE 3.18: PERCENTAGE OF DELIVERIES FOR THE YEAR 2013-14

DISTRICT / STATE	Percentage of Institutional Deliveries			Percentage of Home Deliveries
	Govt	Private	Total	
Tapi	52.86	40.67	93.53	6.00
Gujarat	42.12	55.74	96.30	3.70

Source: CDHO, Tapi (Vyara)

In Tapi district, institutional deliveries registered in Government hospitals / institutions is more than 50 per cent which is higher than the state average of 42.12 per cent, during 2013-14. In private hospitals only 40.67 per cent people go for deliveries in comparison with 55.57 of state average. It is necessary to mention here that, in order to combine the benefits of Government and private health care facilities, Chiranjeevi scheme is launched, which has been discussed in later (in section 3.8).

FIGURE 3.11: TALUKA WISE PERFORMANCE OF INSTITUTIONAL DELIVERIES FOR THE YEAR 2013-14



Source: Compiled from Health Statistics and CDHO, Tapi

Figure 3.11 shows that number of institutional delivers are more than 90 per cent in all talukas. Institutional deliveries are maximum (98.68 per cent) in Vyara and minimum (90.75 per cent) in Nizar. It can be seen that except in Vyara, the percentage of government institutional deliveries are more than private institutional deliveries. This is because people of Vyara have access to nearby private healthcare facilities.

3.7 Status of Child Immunization:

Immunization is a form of preventive medicine. Its aim is to protect individuals and communities from infectious diseases. Immunization operates like an early warning system. It prepares the body to fight against infection. Following the successful global eradication of smallpox in 1975 through effective vaccination programmes and strengthened surveillance, the Expanded Programme on Immunization (EPI) was launched in Gujarat in 1978 to control other VPDs. The aim was to cover 80% of all infants. Subsequently, the programme was universalized and renamed as Universal Immunization Programme (UIP) in 1985 targeting all infants with the primary immunization schedule and all pregnant women with Tetanus Toxoid immunization. Following the successful launch and implementation of universal immunization programme in 1985, there has been considerable reduction in vaccine preventable diseases. In 1992, the UIP became a part of the Child Survival and Safe Motherhood Programme (CSSM), and in 1997, it became an important component of the Reproductive and Child Health Programme (RCH). The standard immunization schedule developed for the child immunization programme specifies the age at which each vaccine should be administered and the number of doses and the interval at which it is to be given. Routine vaccinations received by infants and

children are usually recorded on a vaccination card that is issued for the child. Table 3.19 gives the status of child immunization as percentage to total live birth for the year 2013-14:

TABLE 3.19: STATUS OF CHILD IMMUNIZATION FOR THE YEAR 2013-14

Routine Immunization (%) to Total Live Birth						
	BCG	DPT-3	Measles	Fully Immunized	Polio- 3rd Dose	Vitamin -A
Gujarat	107.1	107.1	99.9	97.7	90.6	93.7
Tapi	117.9	102.4	103.5	103.0	94.0	103.9
Nizar	102.6	95.1	96.6	95.7	89.7	98.9
Uchchhal	124.1	124.5	127.4	127.6	93.1	127.1
Songadh	144.9	142.7	149.4	149.6	96.1	148.0
Vyara	110.8	78.6	75.9	74.7	94.5	76.4
Valod	116.4	106.9	109.0	110.5	97.7	109.5

Source: Health Statistics, Commissionerate of Health, Gandhinagar

Above table shows good performance in child immunization during the latest year i.e 2013-14. It shows that all the required immunization doses coverage above 100 percent⁶ against total live birth. If we look at the figure of talukas, it shows that only Vyara taluka is behind in child immunization.

3.8 Government Initiatives:

Chiranjeevi Scheme

Maternal Healthcare issues are mentioned in Millennium Development Goal no. 5. In order to reduce the MMR to less than 100 per 1 lac live births, reproductive rate to 2.1 and IMR to 30, chiranjeevi scheme is introduced.

The Chiranjeevi scheme is a Public-Private Partnership (PPP), in which the woman can go to private nursing homes that are empanelled in the scheme. The beneficiary has not to make any payment to the private nursing home. The government bears the cost. Moreover, the woman eligible for availing the benefit of Chiranjeevi scheme is entitled to receive Rs.200 as travelling allowance and Rs. 50 is given to the person accompanying the beneficiary woman. This model has been developed with an objective to provide timely treatment to women with complications in delivery, so that both IMR and MMR decrease. Overall performance of Chiranjeevi scheme is given in table 3.20.

⁶ Above 100 per cent means it covers the present year immunization along with previous years pending immunization.

TABLE 3.20: YEARWISE PERFORMANCE OF CHIRANJEEVI SCHEME [2009-10 TO 2013-14]

Year	Tapi				Gujarat			
	Total Institutional Delivery	Delivery under CY	% of CY delivery to total Institutional Delivery	Empanelled Doctors	Total Institutional Delivery	Delivery under CY	% of CY delivery to total Institutional Delivery	Empanelled Doctors
2009-10	7298	720	9.9	3	942972	155721	16.5	721
2010-11	8787	623	7.1	3	1098277	269942	24.6	867
2011-12	9347	1045	11.2	4	1133558	150107	13.2	646
2012-13	10099	446	4.4	5	1104965	89762	8.1	475
2013-14	10323	388	3.8	5	1087169	78510	7.2	433

Source: Compiled from Health Statistics , Commissionerate of Health, Medical Services, Medical Education and Research, Gandhinagar

One can see from the above table that the percentage of deliveries under the Chiranjeevi scheme is decreasing for Gujarat. In Tapi, only during 2011-12, there was a significant rise in percentage of deliveries under this scheme. However, in last two years, it is again showing a decreasing trend. This is a cause of concern and further study is required to examine the reasons for this decrease.

The penetration of Chiranjeevi at taluka-level is also studied. Talukawise deliveries performed under this scheme are given in Table 3.21.

TABLE 3.21: TALUKAWISE INSTITUTIONAL DELIVERIES UNDER CHIRANJEEVI SCHEME [CUMULATIVE UPTO 2014]

Taluka	APL (Tribal)	BPL			BPL Total	Total
		SC	ST	General		
Tapi	4.53	0.70	89.55	5.23	95.47	100.00
Nizar	*	*	*	*	*	*
Uchchhal	0.00	0.00	100.00	0.00	100.00	100.00
Songadh	0.00	0.00	94.35	5.65	100.00	100.00
Vyara	26.00	4.00	60.00	10.00	74.00	100.00
Valod	*	*	*	*	*	*

Source: CDHO, Tapi (Vyara)

** No deliveries under the Chiranjeevi Scheme*

Chiranjeevi scheme is basically meant for people living Below Poverty Line (BPL). One can see from table 3.21 that all talukas except Vyara, only BPL families have availed the benefit of Chiranjeevi Scheme. In Uchchhal, all the beneficiaries of Chiranjeevi Scheme are STs. In Songadh, 94.35 per cent beneficiaries are ST and remaining 5.65 belong to General category, where as in Vyara, 4 per cent are SC, 60 per cent are ST and 10 per cent beneficiaries belong to general category under BPL category where as remaining 26 per cent beneficiaries are living Above Poverty Line (APL).

Janani Suraksha Scheme and Reproductive Child Health (RCH) Programme:

Janani Suraksha Scheme was launched in 2005 by the Ministry of Health and Family Welfare through the National Rural Health Mission (NRHM). The objective of this scheme is to reduce infant mortality, maternal morbidity and mortality by promoting institutional deliveries. Under this scheme, all pregnant women of age 19 years and above, and those from BPL families were given cash incentives, who went for institutional deliveries. Though in its year of inception, women were eligible to receive cash incentive only for their first two deliveries and for a third delivery, if they have undergone sterilization. However, due to weak participation, the restrictions were removed and cash incentives are given to all women who delivered at health institutions. The connecting link between beneficiaries and health institutions are Anganwadi Workers (AWW), Female Health Workers (FHW) and Accredited Social Health Activists (ASHA).

Reproductive Child Healthcare (RCH) programme focuses on the issues pertaining to women's reproductive health – from puberty to menopause, i.e. their effective reproductive cycle. RCH program addresses the needs that have emerged over years of implementing Family Welfare Program. Unlike the Family Welfare program, the RCH program focuses on addressing overall health needs of women and children. One of the major focuses of RCH is to increase the proportion of institutional deliveries. The scheme also addresses the issues of controlling reproductive tract infection and adolescent health.

TABLE 3.22: INSTITUTIONAL DELIVERIES UNDER JANANI SURAKSHA

Year	Tapi		Gujarat	
	Total JSY Beneficiary	% of JSY to total Institutional Delivery	Total JSY Beneficiary	% of JSY to total Institutional Delivery
2009-10	4430	60.7	356263	37.8
2010-11	3734	42.5	343600	31.3
2011-12	3154	33.7	342211	30.2
2012-13	6911	68.4	308880	28.0
2013-14	4802	43.5	253005	23.3

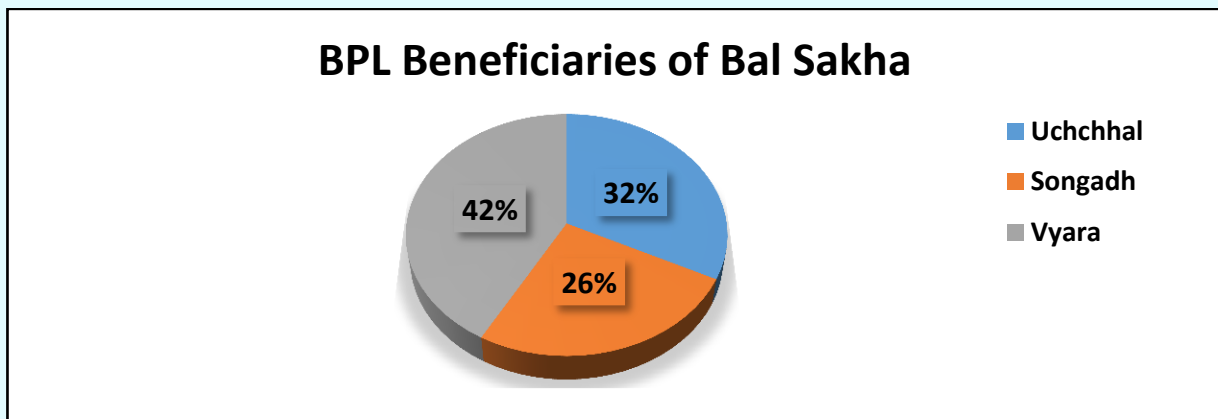
Source: Commissionerate of Health, Medical Services, Medical Education and Research, Gandhinagar

Above table shows that maximum institutional deliveries under Janani Suraksha Scheme is performed during 2012-13. It also shows that % of Institutional delivery under JSY in Tapi district is better than the State average. It may imply that in Tapi BPL people are enough aware about the scheme. Still as per taluka level analysis, it is required to spread awareness and importance of such programmes in remote and rural areas of Nizar, Uchchhal and Valod so that maximum people can avail benefit and contribute towards reducing maternal and child mortality rates.

Bal Sakha Yojana (BSY):

It is an integral part of Chiranjeevi scheme, where the facilities are created for regular check-ups for newborns and infants by pediatricians. The objective of this scheme is to reduce the infant mortality rate. The beneficiaries of this scheme are all children born in BPL families and children born in government health institutions. The talukawise details of beneficiaries of Bal Sakha scheme are shown in figure 3.12 and 3.13 :

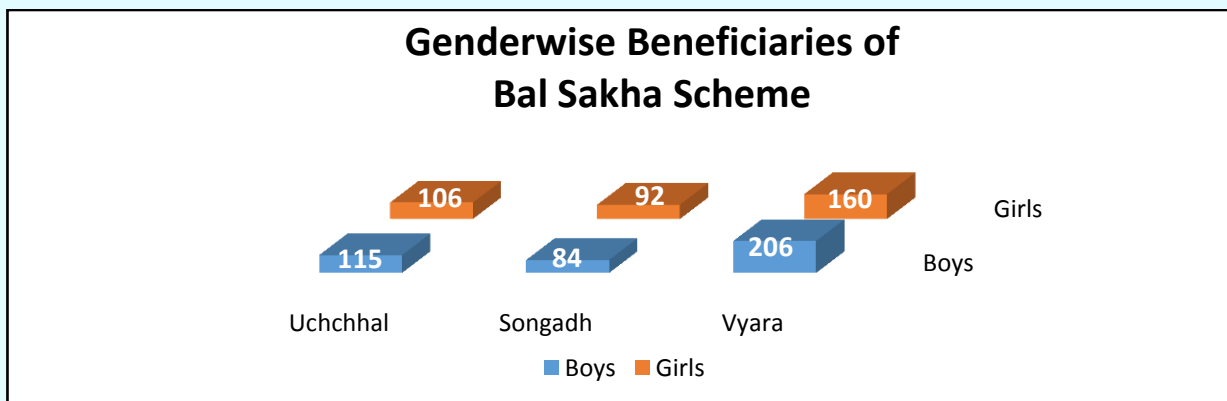
FIGURE 3.12: BPL BENEFICIARIES OF BSY AS ON DECEMBER 31, 2014



Source: CDHO, Tapi (Vyara)

This scheme is functional in three talukas: Uchchhal, Songadh and Vyara. In Uchchhal and Songadh, there are no APL beneficiaries of this scheme. Only in Vyara there are 286 BPL beneficiaries and 80 APL beneficiaries of this scheme. Of these three talukas, 42 per cent beneficiaries are from Vyara, 32 per cent from Uchchhal and 26 per cent from Songadh.

FIGURE 3.13: GENDERWISE BENEFICIARIES OF BSY AS ON DECEMBER 31, 2014



Source: CDHO, Tapi (Vyara)

It can be seen from that maximum beneficiaries are from Vyara, followed by Uchchhal and then minimum from Songadh. Only in Songadh, number of girl-beneficiaries (92) are more than boy-beneficiaries (84). In other two talukas, number of boys are more than number of girls in availing benefits of Bal Sakha Scheme.

School Health Programmes:

School health programmes help doctors to identify problems of children studying in schools. This is important because a large number of children studying in schools are normally not aware of certain symptoms that may most likely lead to bigger health problems if ignored at initial stage. The parents of these children also lack awareness. Thus, school health programmes help in early detection of health problems and their immediate treatment. Table 3.23 gives details of School Health Programmes organized and referral services provided in past five years.

TABLE 3.23: YEARWISE PERFORMANCE OF SCHOOL HEALTH PROGRAMMES

Services	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Child Examined	183190	193442	191768	182437	192291	190189
Children provided Referral Services	1063	1362	893	956	1514	1232
Referral Services						
Pediatrician	129	369	315	956	501	559
Ophthalmic Surgeon	194	741	369	542	418	348
Dental Specialist	61	181	130	219	265	210
Skin Specialist	31	69	44	106	103	89
ENT Surgeon	21	0	20	89	83	60
<i>Source: Health Statistics, Commissionerate of Health, Medical Services, Medical Education and Research, Gandhinagar</i>						

Rastriya Swasthya Bima Yojana:

The district administration has taken many steps with the active support from the state government to ameliorate the conditions of BPL families, especially from tribal areas and provide livelihoods. Rashtriya Swasthya Bima Yojana (RSBY) was launched on October 1, 2007 to provide the insurance cover to the Below Poverty Line (BPL) households from major health shocks that involve hospitalization. BPL families are entitled to incur total cost up to Rs. 30000 per annum for a nominal fee of Rs. 30. Pre-existing medical conditions are covered and there is no age limit. Coverage extends to the head of household, spouse and up to 3 dependents. Transportation cost of Rs.100 per visit with an overall limit of Rs.1000 per annum is also admissible under this scheme. If the medical bill goes beyond Rs.30000, the cost is to be borne by the beneficiary. The beneficiaries are issued smart cards which entitles them to a list of pre-specified in-patient services. The household can avail the benefit without cash through the use of smart card. It is very useful to migrant labourers because of its interoperability. The

district administration has taken special initiatives to issue smart cards to BPL households in the district. Talukawise details of beneficiaries are given in table Table3.24:

TABLE 3.24: TALUKAWISE BENEFICIARIES OF RSBY AS ON DECEMBER 31, 2014

Taluka	Target	Enrolled	Percentage
Tapi	91740	65507	71.41
Nizar	22531	14375	63.80
Uchchhal	20886	14788	70.80
Songadh	14617	11710	80.11
Vyara	25293	18934	74.86
Valod	8413	5700	67.75

Source: Health Department, Tapi (Vyara)

In Tapi, 71.41 per cent of households are covered under this scheme. So far, in Tapi, 65507 out of 91740 rural BPL families are issued smart cards. Some assessment of the scheme is required to know the effectiveness of the scheme and problems encountered by the beneficiaries.

3.9 Summary

Tapi is a tribal district and got separated from Surat in 2007 precisely because of its characteristics were drastically different from Surat. Despite being a tribal district and a huge proportion of rural areas, it has good healthcare infrastructure. Public health care and private care system is well developed and the quality of service is also good. Infrastructure and equipments required for routine healthcare is also available. Paramedical staff to operate those equipments are required to be recruited / transferred to make efficient use of those equipments. Some PHCs require to upgrade / renovate their buildings, equipments and training of staff in line with the targets of National Rural Health Mission. Para-medical staff and MOs requires to be recruited as there is lesser access to private practioners in Tapi. Specialist doctors are also less.

Existing health management system does not specifically address age-linked health problems. The needs of older persons living in rural area require special attention. Geriatrics is still relatively less known health care of the older population. To meet the preventive, curative and restorative needs of older population and especially for older woman is a difficult task. The aim of health care for elderly population should focus on providing quality services closer to their

residential area. The government may think of increasing the number and frequency of Mobile Medicare Services to reach remote villages in rural /tribal areas.

Drinking water and sanitation are two major areas of preventive healthcare. Access to safe drinking water and clean surroundings reduce the chances of ill health by an enormous percentage. Safe drinking water reduces the incidence of water-borne diseases. Clean surroundings are result of use of toilet facilities in the house / common place in the village. Open defecation leads to fecal pollution and that in turn leads to breeding of mosquitoes and flies. In Tapi, hand pumps are major source of drinking water for a large number of households and a small portion of people still defecate in open. Use of bore wells can reduce the burden of fetching water. Construction of common toilets in villages or creating awareness to use toilets constructed in the households reduces the fecal pollution and diseases spread therein.

Incidence of leptospirosis, sickle cell anaemia, leprosy and tuberculosis continue to be a cause of concern even today in Tapi district. Though fatality rate of leptospirosis has reduced over a period of time, it is still very high. Leprosy cases are still high in the district and it does not confirm to the norms of WHO. Sickle cell anaemia is a genetic disorder and is confined to certain tribes like Gamits. Government has taken initiatives to reduce the incidence of sickle cell anaemia but awareness still requires to be created.

Nutritional status of Tapi is good. More than 82 per cent children are not malnourished. However, it is a cause of concern that 2 per cent children still fall under the category of highly malnourished. ICDS is a step towards reducing mortality of mother and child through ensuring their nutritional needs. ICDS has achieved good success and it operates through anganwadis. Though, some anganwadis require immediate attention for construction / renovation of their buildings.

Performance of ANC is good. Schemes like Chiranjeevi, Bal Sakha, Janani Suraksha and the Reproductive Child Health (RCH) programmes are aimed towards reducing mortality through encouraging institutional deliveries. Though a large number of people avail the benefits of these schemes, they largely belong to urban centres like Vyara and Songadh. Awareness requires to be created and efforts requires to be made for increasing the penetration of these schemes in rural talukas like Nizar, Uchchhal and Valod. Immunization and school health programmes in child healthcare are also performing well. Government has taken initiatives in the form of RSBY to meet the expenditure on health care services of BPL people.

SWOC ANALYSIS

Strengths

- Health care infrastructure is good. CHCs and PHCs are equipped with required number of beds and equipments.
- EMRI 108 Services are accessible within 30 minutes, even in the remotest village of the district.
- There are 161 Nirmal Grams.
- CBR is less than state average and so is NRGP.
- More than 82 per cent of children registered under ICDS are normal (not malnourished).
- Percentage of ANC registration is higher than the state average.
- Institutional deliveries are showing an increasing trend in Tapi.
- Immunization is for BGC, DPT-3, measles and Vitamin A is more than the state average.
- School health programmes are organized every year.

Weakness

- Inadequate medical and para-medical staff.
- Proportion of people defecate in open even today need concern.
- In the district, 15 per cent children are found to be malnourished out of which, 2 per cent are severely malnourished.
- Very few specialists and private practioners are available in Vyara.

Opportunities

- A large percentage of population fetch water through hand pumps. Bore wells or piped water connections can be made accessible to those households.
- More common toilets can be constructed in urban areas and public places. Awareness regarding use of individual household toilets requires to be created.
- Awareness regarding different schemes for institutional deliveries requires to be created.
- Awareness regarding use of toilets, schemes of institutional deliveries etc. can be created through some traditional means of communication like street plays and modern devices like kiosks, e-chaupals etc. can be used to create awareness.
- Care for elderly and geriatrics require special attention.

Challenges

- Incidence of leptospirosis, sickle cell anaemia, leprosy and tuberculosis.

CHAPTER 4

LIVELIHOOD

IN

T_{API}

4. Livelihood

HIGHLIGHTS

- More than 75 per cent people are still dependent on agriculture as their main source of livelihood. Increase in agricultural production would generate both – farm and non-farm employment.
- Urban areas have better livelihood opportunities in terms of income and quality of employment.
- In the remote tribal areas, the livelihood opportunities are less and fragile. Economic activities that promote use of local resources should be encouraged.
- Uchchhal has around 54 per cent of forest area and Nizar has around 89 per cent of net sown area.
- Forty per cent area has irrigation facilities.
- Mangoes, Banana and Papaya are major horticulture fruits where as Okra and Brinjal are major horticulture vegetables in Tapi.
- Gobar Gas is generated by a co-operative in Bhitbudrak, a model that can be adopted by many other villages.
- There are large number of quarries in Tapi.
- Kalamkui is a village that has a special art of carpet weaving which can be revived and nurtured.
- Skill development programmes, marketing of rural production, promotion of self-employment activities will improve livelihood opportunities.
- Social security schemes are functional in Tapi, various employment generation schemes are operational.
- Tapi is a tribal village and large proportion of STs are taking benefits from various housing schemes.
- SHGs, especially women SHGs (Sakhi Mandals) are active in Tapi.
- Lijjat papad has not only generated employment opportunity for women but also is a step towards women empowerment.

The livelihood of a household or individual can be interpreted as their ‘means of living’. Their means of living is based on their capabilities, assets (financial, physical, human, natural resource and social) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. The study of livelihoods is relevant for understanding poverty and poverty alleviation. It is well realized that livelihood

Framework in general provides insights in the many dimensions. A secure, stable and sustainable livelihood is essential for human development. Only secure livelihoods can give people the means to ensure access to health care, education and enable them to assert for their rights.

This chapter provides macroeconomic view of the livelihood pattern based on secondary data and field studies undertaken in few villages of Tapi district. The chapter also discusses government initiatives and suggestions which emerge from field experience.

4.1 Agriculture

The economic activities can be broadly categorized into agriculture and allied activities, animal husbandry and fishing, industry, trade and commerce, banking sector and co-operatives. First we shall discuss the pattern and issues of livelihood in agriculture and allied activities.

The primary sector, especially agriculture provides livelihood to large number of people in rural area. The rural economy has a diversified base with agriculture and allied activities as the mainstay, accompanied by non-farm activities.

4.1.1 Work Force Participation

It is important to note that despite less than 50 per cent area under irrigation and around 50 per cent area under cultivation, the percentage of population dependent on agriculture is much higher than 50 per cent. It is important to study the occupation wise bifurcation of workers. But before that, it is required to examine the proportion of main workers and marginal workers which are given in table table 4.1:

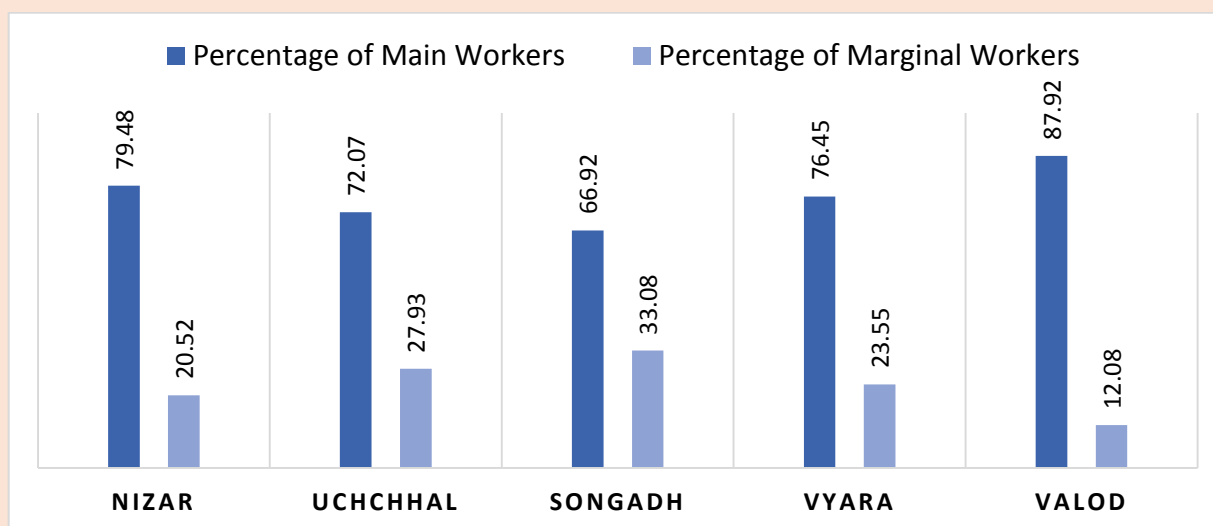
TABLE 4.1 PROPORTION OF MAIN AND MARGINAL WORKERS

Name	Total Workers	Main Workers	Marginal Workers	Main Workers (%)	Marginal Workers (%)
Tapi	450902	337579	113323	74.87	25.13
Nizar	68909	54767	14142	79.48	20.52
Uchchhal	53695	38697	14998	72.07	27.93
Songadh	129603	86732	42871	66.92	33.08
Vyara	150948	115406	35542	76.45	23.55
Valod	47747	41977	5770	87.92	12.08

Source: Census 2011

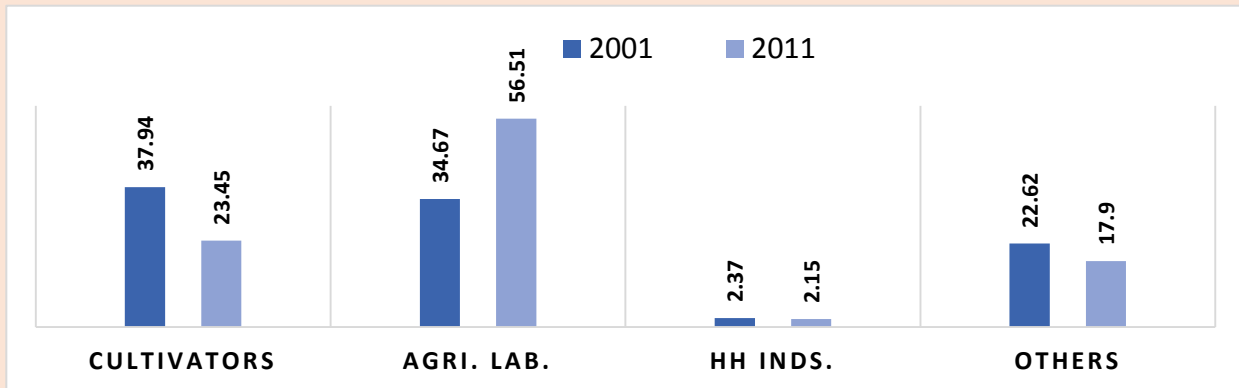
The percentage of main workers range from 66.92 per cent in Songadh to 87.92 per cent in Valod. Proportion of marginal workers range from 12.08 per cent in Valod to 33.08 per cent in Songadh. It is important to examine the distribution of workers as per rural and urban areas as well as across occupations. Moreover, the proportion of workers in 2001 and 2011 also requires to be compared.

FIGURE 4.1: PERCENTAGE OF MAIN AND MARGINAL WORKERS IN TAPI



Source: Census 2011

FIGURE 4.2: OCCUPATION WISE WORKERS [2001 AND 2011]



Source: Census 2001 and 2011

Figure 4.2 shows that percentage of cultivators have reduced by as much as 14 point and that of agricultural labourers have increased by around 22 point over a period of 10 years. There is little change in percentage of household industries workers and those falling in others category have reduced by 5 point. A large increase in number of agriculture labourers and reduction in number of cultivators require further study.

It shows that In Tapi Majority of population is still dependent on agriculture (more than 75 percent population (Cultivators + Agricultural Labourers)). Hence it can be said that Agriculture even today plays major role in providing livelihood (Table 4.2).

TABLE 4.2: OCCUPATIONWISE PROPORTION OF TOTAL WORKERS

Tapi	P/M/F	Total Workers		Cultivators		Agri. Lab.		HH Inds.		Others	
		2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Total	Persons	316656	450902	37.94	23.45	34.67	56.51	2.37	2.15	22.62	17.90
	Male	199907	251049	40.61	29.02	29.04	47.03	2.13	1.83	25.80	22.13
	Female	116749	199853	33.37	16.45	44.32	68.41	2.78	2.55	17.17	12.59
Rural	Persons	295776	421201	37.35	25.00	29.74	60.00	2.18	2.15	17.78	12.85
	Male	182879	228595	40.59	31.72	25.61	51.16	1.98	1.84	19.58	15.28
	Female	112897	192606	32.10	17.03	36.43	70.49	2.51	2.52	14.88	9.96
Urban	Persons	20880	29701	1.34	1.43	5.74	7.00	1.79	2.07	91.13	89.50
	Male	17028	22454	1.43	1.54	4.24	4.97	1.63	1.66	92.69	91.82
	Female	3852	7247	0.91	1.10	12.38	13.26	2.49	3.34	84.22	82.30

Source: Census 2001 and 2011

Table 4.3 gives talukawise bifurcation of different categories of workers. In all talukas, percentage of male agriculture labourers have increased and percentage of female agriculture labourers have decreased during 2001 to 2011. Percentage of cultivators and percentage of “other” workers have declined in the decade of 2001 to 2011. Percentage of cultivators are maximum in Vyara (33.47 per cent) and minimum in Nizar (13.58 per cent).

Percentage of agriculture labourers are maximum in Nizar (79.48 per cent) and minimum in Vyara (31.54 per cent). Percentage of Household Industrial workers are highest in Valod (3.36 per cent) followed by Vyara (2.64 per cent) and Songadh (2.48 per cent). Clearly, locational advantage is observed in Vyara and Songadh. Uchchhal and Nizar are interior talukas and relatively less developed.

TABLE 4.3: PROPORTION OF TOTAL WORKERS (BY TALUKA & OCCUPATION)

District / Taluka	P/M/F	Cultivators		Agri. Lab.		HH Inds.		Others	
		2001	2011	2001	2011	2001	2011	2001	2011
Tapi District	Persons	44.35	23.45	50.01	56.51	2.79	2.15	27.97	17.90
	Male	42.04	29.02	34.19	47.03	2.25	1.83	29.73	22.13
	Female	48.31	16.45	77.10	68.41	3.71	2.55	24.97	12.59
Nizar	Persons	29.71	13.58	79.14	79.48	0.90	0.36	19.06	6.59
	Male	34.38	19.24	57.49	71.65	0.95	0.42	18.01	8.69
	Female	21.95	5.89	115.03	90.11	0.78	0.27	20.80	3.73
Uchchhal	Persons	37.41	14.61	69.99	76.99	1.50	1.18	16.35	7.22
	Male	34.84	18.85	52.48	70.67	1.26	1.23	18.84	9.26
	Female	41.07	10.04	94.92	83.80	1.84	1.12	12.82	5.03
Songadh	Persons	52.67	22.93	38.99	52.23	3.58	2.48	33.55	22.36
	Male	45.97	28.53	24.27	41.09	2.77	2.19	36.35	28.20
	Female	65.15	16.08	66.39	65.84	5.11	2.84	28.35	15.23
Vyara	Persons	54.25	33.47	38.12	42.21	3.73	2.64	30.62	21.69
	Male	49.44	39.79	23.46	31.54	2.91	2.37	32.01	26.30
	Female	63.18	25.56	65.29	55.55	5.25	2.98	28.04	15.92
Valod	Persons	23.98	17.36	54.40	57.13	1.90	3.36	29.36	22.15
	Male	27.36	22.06	44.48	50.08	1.56	1.88	31.03	25.98
	Female	19.10	10.50	68.73	67.44	2.39	5.52	26.94	16.54

Source: Census-2011

Access to water and irrigation is major determinant of agricultural production and the stability of yields. Expansion of irrigation facilities is the major livelihood interventions by the government. The major source of irrigation is the government canals. The other sources of irrigation are tanks and wells. Expansion of irrigation helps in increasing livelihood opportunities many ways. Agricultural yield and cropping intensity increases because of expansion of irrigation and that leads to increase in demand for labour. Moreover, increase in agricultural income result in demand for wage goods. Since production of wage goods are normally labour intensive, it has greater potentiality to create employment opportunities. Component of employment is higher in rural income in comparison to urban income, both through forward and backward linkages in consumption and production. If cropping pattern change in favour of long duration crops, it may reduce demand for labour.

Mechanization may cause reduction in demand for labour, which may adversely affect livelihood opportunities. The use of traditional instruments of agriculture has declined in the district and the use of tractors has increased significantly in recent years. These kinds of changes are associated with increase in non-farm activities. The rural non-farm economy is intimately linked to agriculture. It requires to be studied that what determines economic diversification. Is it primarily agriculture led or are the growth impulses urban based?

Rapidly expanding markets, institutional innovations in markets, innovations in finance and collective actions; and revolutions in biotechnology and information technology can offer good opportunities to promote development through agriculture.

Watershed development has provided better alternative to tackle the issues of water shortage and livelihood. Harvesting rainwater for purposes of irrigation, plantations including horticulture and floriculture, pasture development, fisheries etc. helps in creating sustainable sources of income for the village community as well as for drinking water. The government has initiated watershed development project, which aims at increasing soil and moisture conservation and productivity of the degraded land, and thereby increase the income of people. The programs seek to promote the overall development of the project area while maintaining a special focus on the weaker sections. With the implementation of the watershed programs, several outcomes are expected with increase in healthy living lifestyles with better income, education and resources.

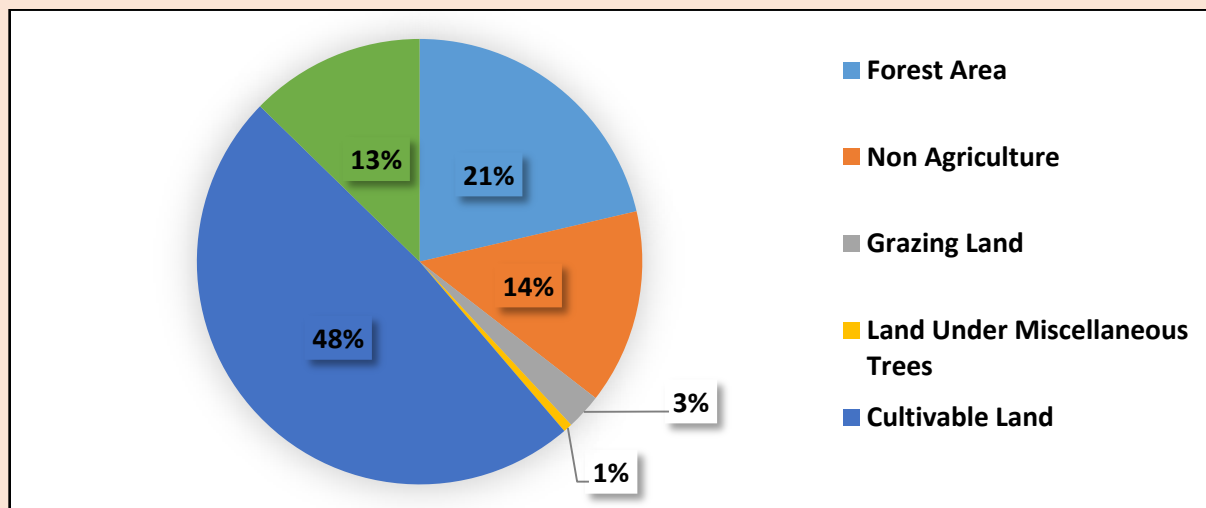
Gujarat government has introduced innovations in state action to develop agriculture sector. It has issued Soil Health Card scheme for every land to farmers. It has helped farmer to verify the soil specimen through scientists who examine the mineral composition in the soil. Based on the report, they can provide the fertilizer with appropriate mineral percentage. Detailed study is required to know how this has helped in soil enrichment and in preventing soil erosion.

The Krushi Mahotsav campaign infuses new spirit of change and it reaches to farmers with experts and they interact with the farmer and provide necessary information regarding soil health, organic farming, technology and inputs, irrigation and the use of fertilizer.

4.1.2 Land Use

A large proportion of land in Tapi district has black, sandiloon (*goradu*) soil. There is a mix of hilly area and plains. Land use classification details are given in Table 4.4 and Figure 4.3. It shows that 48 per cent of land under cultivation and 21 per cent are forests. One per cent land is under cultivation of miscellaneous trees and 3 per cent land is for pasture (grazing land). Out of total land, 13 per cent is uncultivable and 14 per cent land is non-agricultural land.

FIGURE 4.3: LAND USE CLASSIFICATION FOR TAPI DISTRICT FOR THE YEAR 2013-14



Source: Directorate of Agriculture, Tapi (Vyara)

Table 4.4 shows that of all the talukas maximum forest area is in Uchchhal (34.28 per cent) followed by Songadh & Vyara, maximum cultivable land is in Valod (88.87 per cent) followed

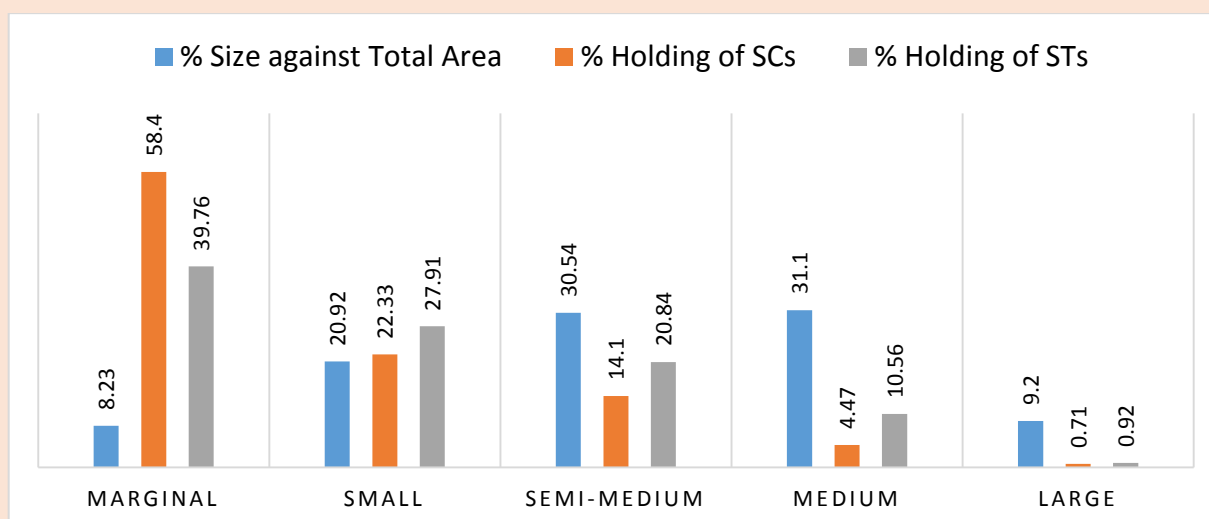
by Vyara (68.02 per cent).among all the talukas, Nizar has maximum uncultivable land (40.30 per cent).

TABLE 4.4: TALUKA WISE LAND USE CLASSIFICATION FOR THE YEAR 2013-14

Talukas	Forest Area		Non Agriculture		Grazing Land		Cultivable Land		Uncultivable land		Total Area (Ha)
	Area (Ha)	% to Total	Area (Ha)	% to Total	Area (Ha)	% to Total	Area (Ha)	% to Total	Area (Ha)	% to Total	
Tapi	73373	21.50	48523	14.22	8908	2.61	166760	48.87	43649	12.79	343474
Nizar	332	0.83	453	1.13	1587	3.96	21556	53.78	16151	40.30	40079
Uchchal	22795	34.28	10909	16.40	356	0.54	11120	16.72	21323	32.06	66503
Songadh	31751	23.57	32353	24.02	4969	3.69	61888	45.95	3726	2.77	135404
Vyara	18495	23.20	3216	4.03	1575	1.98	54220	68.02	2210	2.77	81260
Valod	0	0.00	1592	7.87	421	2.08	17976	88.87	239	1.18	20228

Source: Directorate of Agriculture, Tapi (Vyara)

FIGURE 4.4: LAND USE CLASSIFICATION ACCORDING TO SIZE AND CLASS FOR TAPI AS PER 2010-11 AGRICULTURE CENSUS



Source: Agriculture Census 2010-11

TABLE 4.5 : NUMBER AND AREA (HA) OF THE OPERATIONAL HOLDER ACCORDING TO SIZE CLASS AND SOCIAL GROUPS [2010-11]

Size Class	Year	Institutional		Avg. Land Holding per Person (All Social Groups)	% Size against Total Area	% Holding of SCs	% Holding of STs
		No.	AREA				
Marginal (below 1 hect.)	2005-06	13	6	20837	7.34	35.09	36.07
	2010-11	24	7	25357	8.23	58.40	39.76
Small (1.00 to 1.99 hect.)	2005-06	6	9	16715	19.43	29.01	28.93
	2010-11	8	12	17507	20.92	22.33	27.91
Semi Medium (2.00 to 3.99 hect.)	2005-06	12	31	12811	29.26	20.89	22.07
	2010-11	12	31	13090	30.54	14.10	20.84
Medium (4.00 to 9.99 hect.)	2005-06	3	22	6831	32.51	10.95	11.70
	2010-11	3	22	6587	31.10	4.47	10.56
Large (10.00 & Above hect.)	2005-06	6	155	739	11.46	4.06	1.22
	2010-11	6	155	579	9.20	0.71	0.92
All Classes	2005-06	40	223	57933	100.00	100.00	100.00
	2010-11	53	227	63120	100.00	100.00	100.00

Table 4.5 and Figure 4.4 gives details of operational holding of land by size as well by caste. Highest percentage of land holding is in the medium category (4 to 9.99 Hector) which occupied 31.10 percent of total landholding followed by semi-medium category (30.54 per cent) . Only 9.20 per cent operational holders are holding the large category (10 & above hecter) of land. For SCs & STs Land holding is maximum in marginal category, 58.4 percent & 39.76 per cent respectively.

Irrigation is important to hedge the risk of uncertain rainfall. Inadequate rainfall can be compensated through irrigation facilities, though there is hardly any practical solution for excess rainfall. The details of net area under irrigation and the percentage of irrigated area are shown in table 4.6. Valod has maximum (90.52 per cent) and Songadh has minimum (25.24) per cent of net area under irrigation.

TABLE 4.6: NET AREA UNDER IRRIGATION AS ON DECEMBER 31, 2014

Talukas	Net Area under Irrigation	Share of Irrigated Area
Tapi	67145	41.86
Nizar	7453	37.53
Uchchhal	3758	33.79
Songadh	15264	25.24
Vyara	23991	44.39
Valod	16047	90.52

Source-Directorate of Agriculture, Gandhinagar

4.1.3 Crops and Productivity

Food Crops: Sugarcane is grown in the more than 2.50 lac hectare irrigated area of talukas surrounding Ukai dam. Other important crops of Tapi district are rice, wheat, jowar, tuvar (beans) and cotton. The production of sugarcane and other cash crops is low in Uchchhal and Nizar talukas because of scant rainfall and insufficient irrigation facilities. The benefit of irrigation facilities created because of Ukai dam is accrued to Surat, Navsari and Valsad districts. There is good rainfall in the catchment area of Ukai dam. Despite that because of the hilly terrain, the agriculture production is less and it results in rural poverty and unemployment of agriculture labourers. Measures are required to be undertaken to generate regular employment in agriculture sector through development of irrigation facilities, checking the outflow of water from the hilly region in the catchment area of Ukai dam and development of new technologies for agricultural production in all seasons. The details of food crops in Tapi are given in table 4.7.

TABLE 4.7 : AREA, PRODUCTION AND YIELD OF FOOD CROPS IN TAPI

<i>Area in '000Ha., Prod. In '000 Tonnes, Yield in K.G.s/Ha</i>										
Year		Rice			Jowar			Wheat		
		Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
2009-10	Gujarat	6585	12284	1865	1118	1184	1059	8535	23384	2740
	Tapi	294	483	1643	253	328	1298	40	110	2750
2010-11	Gujarat	7283	14238	1955	764	807	1056	14986	49410	3297
	Tapi	354	719	2031	131	170	1291	53	175	3302
2011-12	Gujarat	*	*	*	*	*	*	*	*	*
	Tapi	44782	4000	2099	18913	2900	1382	5392	3000	3111
2012-13	Gujarat	*	*	*	*	*	*	*	*	*
	Tapi	45633	4000	2607	19480	2910	1785	5495	3000	2940
2013-14	Gujarat	*	*	*	*	*	*	*	*	*
	Tapi	55694	4000	2700	16936	2910	1450	5456	16368	3000

* Data not available. @below '000 ha, @@ below '000 tonnes

Source: District Agriculture Officer, Tapi (Vyara)

Rice shows a clear increasing trend in the yield, where as Jowar's yield has remained more or less same. The yield of wheat shows a declining trend. The yield of all three crops is more or less same across five talukas. Thus, interregional variations are not observed in yield of these three crops.

Horticulture Fruits and Vegetables: Government has started giving importance to horticulture crops in recent past. The details of area under cultivation, production and yield of fruits and vegetables are given in table 4.8 and 4.9 which shown that the maximum area is used to grow mangoes but highest production and yield among all fruits is for Bananas / Papayas. It is also observed that the area under cultivation of mangoes has increased in past three years. Mango is a seasonal fruit and good quality mangoes fetch a very good export market. However, the distance between two mango trees have to be much more in comparison with the trees / shrubs of other crops. More bananas can be grown in less area. Papaya trees also grow vertically, whereas trees of mangoes, chicku, lemon grow horizontally as well. Thus, production and yield of bananas / papayas can be more but it is difficult to get such a high yield for mangoes.

Yield of Papayas and Bananas is individually same across talukas. The yield of Papayas is higher than the yield of Bananas. Maximum area under cultivation is for lady finger (okra) and maximum production among all vegetables is also okra's. However, maximum yield is that of Onions. One can see that the yield of each of these vegetables individually, are same across talukas. Onions has the highest yield, followed by Brinjals and then Potatoes.

TABLE 4.8: AREA, PRODUCTION AND YIELD OF FRUITS [2011-12 TO 2013-15]

Crop	<i>Area in Ha., Prod. In Metric Tonnes, Yield in Metric Tonnes/Ha</i>								
	2012-13			2013-14			2014-15		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
Mango	4800	36000	7.50	5480	39300	7.17	5573	38398	6.89
Chiku	75	950	12.67	87	1010	11.61	90	1045	11.61
Bananas	1850	114700	62.00	1665	85464	51.33	1126	50816	45.13
Pomegranate	25	352	14.08	51	467	9.16	51	516	10.12
Papayas	1850	122400	66.16	2150	96750	45.00	1925	86625	45.00
Sitafal	41	293	7.15	39	273	7.00	42	294	7.00
Cashew Nuts	270	87	0.32	275	81	0.29	275	80	0.29
Coconut	55	440	8.00	60	520	8.67	62	538	8.68
Others	165	1155	51.17	210	1424	6.78	263	1682	6.40
Total	9169	276744	259.72	10067	225754	22.43	9469	180552	19.07

Source: District Horticulture Office, Tapi (Vyara)

TABLE 4.9: AREA, PRODUCTION AND YIELD OF VEGETABLES IN TAPI [2011-12 TO 2013- 15]

Crop	<i>Area in Ha., Prod. In Metric Tonnes, Yield in Metric Tonnes/Ha</i>								
	2012-13			2013-14			2014-15		
	Area	Prodn.	Yield	Area	Prodn.	Yield	Area	Prodn	Yield
Potato	20	500	25.00	1	23	23.00	*	*	*
Onion	740	24420	33.00	397	13101	33.00	210	4410	21.00
Brinjals	3850	71940	18.69	3157	56921	18.03	3050	54992	18.03
Cabbage	180	4140	23.00	127	2785	19.57	96	1879	19.57
Lady Finger (Okra)	9150	112080	12.25	9327	125821	13.94	9473	132054	13.94
Tomato	680	16320	24.00	660	13893	21.05	575	12104	21.05
Cauliflower	415	8300	20.00	380	7345	19.33	290	5606	19.33
Cluster Bean (Guar)	980	6630	6.77	616	4127	6.70	622	4167	6.70
French Beans	810	6480	8.00	785	5785	7.37	630	4643	7.37
Velavala	3045	68950	22.64	3287	73859	22.47	3420	61187	17.89
Others	390	8910	22.85	455	10465	23.00	1687	23799	14.11
Total	20260	328670	16.22	19192	314125	16.35	20053	304841	15.20

Source: District Horticulture Office, Tapi (Vyara)
* Data Not Available

4.1.4 Forest Cover

Livelihood of people belonging to tribal region depend largely on forest, irrespective of their land holding and agricultural activities. Forests provide wood for fuel and for building construction. Non-Timber Produce (NTFP) like honey, gums, spices, herbs, seeds, oils and animal products. It is therefore, important to examine the changes in forest cover.

Tapi has moist deciduous forests. These forests are not evergreen. They shed the leaves during March – April. These forests are dominated by teak trees and thus, serve as a supplier of teak wood for construction and furniture. These forests form the main source of commercial timber in the state. Teak wood is resistant to changes in weather and rain. Therefore, it has more acceptability in furniture making and making of boats. The percentage of Forest Area to Geographical area is 29.03 per cent in tapi among which 97.07 per cent is coming under reserved area (Table 4.10).

TABLE 4.10: FOREST COVER OF TAPI DISTRICT 2012-13

Tapi District – Vyara Division	Reserved Area	Protected Area	Unclassified Area	Total Forest Area	Total Geo. area	% FA to GA
	912.68	1.97	25.58	940.23	3239	29.03

Source: Gujarat Forest Statistics, 2012-13

4.1.5 Agriculture Technology Management Agency (ATMA)

In order to address the key constraints faced by extension system in the country with respect to reducing capacity of public extension services, its lack of decentralized and demand driven focus, the Innovations in Technology Dissemination component of National Agricultural Technology Project (NATP) was implemented in seven States in the country namely, Andhra Pradesh, Bihar, Himachal Pradesh, Jharkhand, Orissa, Maharashtra and Punjab through four project districts in each State. This component aimed at pilot testing new institutional arrangements for technology dissemination at district level and below in order to move towards an integrated extension delivery. The project process involved adopting bottom up planning procedures for setting the research and extension agency in order to make the technology dissemination farmer driven and farmer accountable. The extension delivery was oriented towards group approach catering to the location specific requirement of the farmers. Gender concerns have been given adequate emphasis under the project. It functions as a registered society at District level and serves as focal point for integrating research and extension activities and helps in decentralizing the management of agricultural technology transfer.

One key objective of NATP is to decentralize decision-making to the district level through the creation of Agricultural Technology Management Agency (ATMA). A second goal is to increase farmer input into programme planning and resource allocation, especially at the Block level, and to increase accountability to stakeholders. A third major goal is to increase programme coordination and integration, so that the programme thrust such as farming System innovations, Farmer organization, Technology gaps and Natural Resource Management can be more effectively and efficiently implemented.

The details of works undertaken under ATMA during 2014-15 in Tapi are:

Providing Training (Inter-State, Within State and Within District).

- i. Organizing Demonstrations – both in Kharif and Rabi seasons.
- ii. Organizing Exposure Visit (Inter-State, Within State and Within District).
- iii. Formation of Farmer Interest Groups (FIG) / Commodity Interest Groups (CIG)
- iv. Capacity Building, Skill Development and Support Services to FIG / CIG.
- v. Generating revolving fund to support FIG / CIG.
- vi. Formation of Food Security Groups.
- vii. Giving Farmer Awards / Best Organizing Group.
- viii. Farm Information Dissemination through:
 - (a) District-Level Exhibitions
 - (b) Kisan Melas
 - (c) Information dissemination through printing books, distributing folders etc.
 - (d) Farmer-Scientists' interaction at District-Level.
 - (e) Organizing Field Day and Kisan Goshthi
 - (f) Formation of Farm Schools.

TABLE 4.11: PERCENTAGE OF VILLAGES COVERED UNDER ATMA 2014-15

District / Taluka	Number of Villages	Villages Covered Under ATMA	Percentage of Villages Covered Under ATMA
Tapi	517	472	91.30
Nizar	87	58	66.67
Uchchhal	64	64	100.00
Songadh	177	163	92.09
Vyara	149	147	98.66
Valod	40	40	100.00

Source: ATMA District Report 2014-15

In Tapi, 472 villages out of 517 (91.30 per cent) villages are covered under ATMA. In Valod and Uchchhal, all villages are covered under ATMA. All villages of Uchchhal and Valod are covered under ATMA.

4.2 Animal Husbandry, Poultry and Milk Co-operatives

4.2.1 Animal Husbandry & Poultry:

A large proportion of the population of this district is depend on agriculture. But the next most important activity for earning livelihood is animal husbandry, poultry and fishing. Many households, irrespective of their landholding, keep animals such as cows, buffaloes, sheep, goat and poultry. Apart from these animals, there are other animals like horses, donkeys, camels,

pigs etc (Table 4.12). A brief overview of changes in the number of animals and poultry birds is provided in this section. In addition, information on milk co-operatives and milk collection is also provided.

TABLE 4.12: LIVESTOCK IN TAPI

Animals	Number	Percentage
Cows	234953	47.02
Buffaloes	172359	34.49
Sheep and Goats	145	0.03
Goat	92134	18.44
Horses and Ponies	45	0.01
Donkeys and Mules	42	0.01
Total	499678	100

Source: Animal Census 2012

Table 4.12 shows that there are 234953 cows, 172359 buffaloes, 145 sheep, 92134 goats, 45 horses and ponies, 2 mules and 40 donkeys in Tapi district. Out of 234953 cows, 112389 (47.83 per cent) are cross-bred and 122564 (52.17 per cent) are indigenous. There are 522183 poultry birds. There is a decrease in total animals in 2012 by 1.37 per cent in comparison with 2007 Livestock Census data and there is an increase in poultry birds by 4.14 per cent during the same period (Table 4.13)

TABLE 4.13: TALUKAWISE ANIMALS AND POULTRY BIRDS IN TAPI

	Total Animals		Total Birds	
	2003	2007	2003	2007
Tapi	452223	513441	423567	480641
Nizar	79426	102485	33457	53072
Uchchhal	45939	47553	107757	36221
Songadh	156968	162933	142965	192098
Vyara	127803	151727	90495	150507
Valod	42087	48743	48893	48743

Source: Respective Animal Census

In Tapi District, there are 36 Primary veterinary health centres, including one primary veterinary health centre in each taluka . In backward and tribal talukas, mobile veterinary

services are also operational. Details of veterinary services available in Tapi are given in Table 4.14.

TABLE 4.14: VETERINARY SERVICES PROVIDED TO ANIMAL OWNERS IN TAPI AS ON DECEMBER 31, 2014

Service Provided	No. of Animals Benefitted/ Units	No. of Owners Benefitted
Total Animals Treated	68627	68627
Artificial Insemination	1991	1991
Vaccinations	322388	64477
Deworming Medicines Supplied	11329	11329
Fodder Seeds Supplied	5360	5360
Animal Treatment Camps Organized	92	92
Total Castrations	2198	2198
No. of Laboratory Samples Checked	3190	3190
Mobile Services Run by District Panchayat	788	788
Cattle Shed Subsidy	1	1
Chaff Cutter Subsidy	67	67

Source: Animal Husbandry Branch, District Panchayat, Tapi (Vyara)

4.2.2 Milk Co-Operative:

Milk co-operative societies are formed at the village level where milk is collected and supplied to the dairies located in towns / city area. Individually, it becomes difficult as well as financially unviable to supply milk to the dairies. The milk co-operative societies provide the logistic and other support to the members of the societies. Over and above this, the milk co-operatives also procure fodder for the animals of the co-operative society members and sell it to them at reasonable rates. Thus, milk co-operative societies play an important role in mobilizing the resources for animal husbandry activities and providing a source of livelihood to the members of the societies. The details of number of milk co-operative societies and total milk collected (in litres) are given in table 4.15.

The maximum number of milk co-operative societies was in Songadh followed by Vyara and minimum number was in Valod (Table 4.15). However, in terms of total milk collection by these co-operative societies Nizar collects maximum and Uchchhal collects minimum milk

during 2013-14. The milk collection from Nizar and Uchchhal talukas is 166.59 lakhs litre and 89.10 lakhs litre respectively. The number of milk co-operatives have increased by 1.04 per cent in a span of 5 years, the quantity of milk collection has increased by 8.08 per cent.

TABLE 4.15: TALUKAWISE MILK CO-OPERATIVES AND MILK COLLECTION IN LITRES IN TAPI

Taluka	Milk Co-operatives		Milk Collection (in litres)	
	2009-10	2013-14	2009-10	2013-14
Tapi	528	536	111446590	130619588
Nizar	95	98	20541918	16659425
Uchchhal	63	64	8498556	8910277
Songadh	176	179	27272092	36618250
Vyara	149	150	42960941	53247614
Valod	45	45	12173083	15184022

Source: Animal Husbandry Branch, District Panchayat, Tapi (Vyara)

4.2.3 A Case Study of Bhitbudrak Gobar Bank

The project team of DHDR, Tapi visited the milk co-operative at Bhitbudrak and met the manager of the milk co-operative. An in-depth interview of the manager was taken by the team. He took us to the site where gobar gas was produced and vermicompost was developed. The manager introduced the team members to a person who was involved in developing vermicompost and was also looking after the gobar gas plant. The details obtained from discussion with them is presented here:

Bhitbudrak is a village in Songadh taluka, where most households are dependent on agriculture and animal husbandry for their livelihood. On an average, every household possess 4 to 5 cattle. Milk production and distribution work is undertaken by the milk co-operatives in almost all the villages but in Bhitbudrak, Sumul has taken a unique initiative to collect the dung of cattle and process it for converting it to cooking gas. The gas thus generated is called *gobar gas*.

A milk co-operative – *Shri Bhitbudrak Dudh Utpadak Sahakari Mandali Ltd* was formed and at present, there are 160 members. The membership fees are Rs 15 per person. In this co-operative, there are 5 employees and 10-15 people work *ad hoc* for gobar gas generation per day. These people get a remuneration of Rs 60 per day.

Gobar gas plant was installed and commissioned in Bhitbudrak in 2007 through a Public Private Partnership (PPP) where, district panchayat contributed Rs 10 lac, Sumul contributed Rs 8 lac and village people contributed Rs 2 lac towards the project.

The co-operative, over and above milk collection, collects dung from house-to-house on a daily basis and makes a payment of 35 paise per kg of dung. On an average, 3500 kg of dung is collected per day. All the dung that is collected in a day gets utilized. The dung is then taken to the plant, slurry is prepared and gas is generated. The monthly expenditure to manufacture gobar gas comes to around Rs 40 – 45 lac. The cost of gas pipeline connection is borne by the co-operative. The monthly charge for using the gobar gas is Rs 150, irrespective of use. Under this PPP project of generating gobar gas, all the 160 members are already given gas connections and 46 are in process. The gas is distributed twice a day – 6:00 AM to 8:00 AM and 5:00 PM to 7:00 PM.

Once the dung is utilized for generating gas, the slurry is used to make vermi compost manure. The earthworms are mixed with the slurry. The earthworms do not die in the process, rather, they survive by consuming the nutrients of the dung. These earthworms bought only once and are used perpetually for manufacturing vermi compost manure. It takes around one month to manufacture the manure after mixing earthworms with the slurry. Every month, around 600 bags (each bag weighing 50 kg) is produced every month. Excess slurry is preserved for later use. Thus, the co-operative has evolved a concept of gobar bank.

This vermi compost manure is marketed under the brand name of Sumul. The manure is priced at Rs 200 per 50 kg. The responsibility of finding the market for manure also rests with Sumul and therefore, if the demand for manure is less than the supply, Sumul buys the excess produce from the co-operative.

Excess slurry is preserved and stored for future use.

The members of this co-operative and the person in-charge of the plant revealed that unity among village people and nearness of houses in the villages contribute towards the success of this project. They stress the importance of PPP by stating that villagers develop a sense of belongingness towards the project, only through PPP. Thus, PPP model is a major contributor to the success of this gohar gas generation project. It is worth noting that the members insisted that PPP approach is important to success. They quoted two examples of Selud and Naranpur villages in Uchchhal, where the government had borne the 100 per cent of the cost. They mentioned that the Central government proposed to invest Rs 1 crore and takeover the whole plant, but the members of the co-operative declined the proposal. They argue that higher private participation is beneficial, as people feel a sense of belongingness.

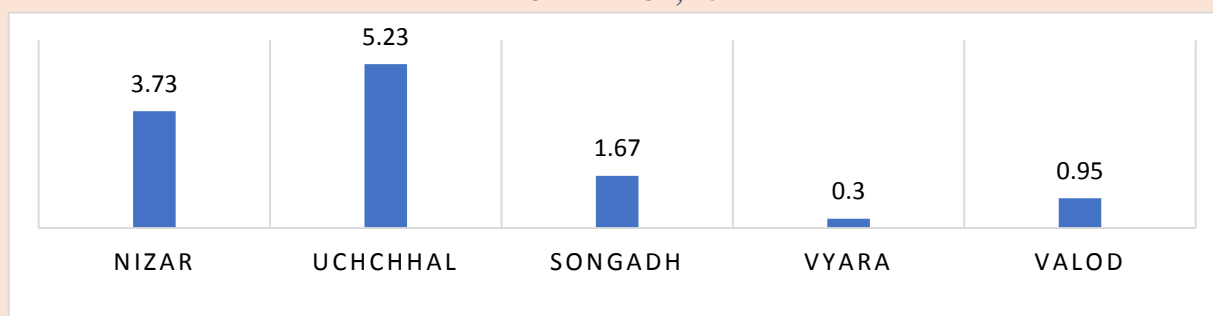
Through this project, the same raw material – dung – is used for manufacturing two products: gohar gas and vermi compost manure. The people have not only got employment but the time is saved in cutting fire wood, lighting it and cooking because of this project. Because of gohar



4.3 Fisheries

There are opportunities for fresh water fishing in Tapi and Midhola rivers. Figure 4.5 gives details about percentage of population dependent on fishing activities for their livelihood and Table 4.16 total fish production in each taluka:

FIGURE 4.5: PERCENTAGE OF POPULATION DEPENDENT ON FISHING FOR LIVELIHOOD AS ON DECEMBER 31, 2014



Source: Fisheries Branch, District Panchayat, Tapi (Vyara)

It is shown from the above figure that a very small proportion of people are dependent on Fishing for their livelihood in each taluka of Tapi district. In Uchchhal 5.23 per cent population is dependent on fishing which is highest among all talukas, followed by Nizar with 3.73 per cent.

One can see that fish production ranges from 284 tonnes in Valod to 3358 tonnes in Songadh during 2014. In all years (2009-2014) Songadh is showing the highest production, except 2013. So we can say, even though, the percentage of population dependent on fishing is in Uchchhal, maximum fish production is in Songadh.

TABLE 4.16: FISH PRODUCTION IN TONNES [2009 TO 2014]

Taluka / District	Fish Production in Tonnes					
	2009	2010	2011	2012	2013	2014
Tapi	10482	10316	11228	11224	10004	10025
Nizar	2856	2935	3316	3292	2926	3102
Uchchhal	3125	2971	3401	3498	2972	3052
Songadh	3825	3789	3814	3752	3456	3358
Vyara	326	295	395	368	352	329
Valod	350	326	302	314	298	284

Source: Fisheries Branch, District Panchayat, Tapi (Vyara)

Above table depicts that fish production of Tapi has reduced in past six years by 2.23 per cent. There could be several reasons for decrease in fish production like change in quality of water, people shifting from fishing activities to industries or other higher income-generating activities.

4.4 Industries

In Tapi district there predominantly small scale units. There are only 2 units (J K Paper Mills Ltd., Ukai; Taluka: Songadh and Hyderabad Industried Ltd., Golan; Taluka Valod) which can be categorized as large and medium scale units.

It is important to note that the definitions of SSI has undergone a change in 2006 after enactment and implementation of Micro, Small and Medium Enterprise Development (MSMED) Act. New industrial policy was formulated subsequent to adoption of liberalization policy in 1991, the investment limit for small-scale units was increased to Rs.60 lac, which was further increased to Rs. 1 crores. Prior to enactment of the MSMED Act, the earlier industrial policies were silent on the nature of the small-scale unit i.e. manufacturing or service. The MSMED Act defined the service units which would be classified as small-scale units. However, in contrast with the earlier industrial policies, the MSMED Act specified 3 categories of industries, i.e. micro, small and medium. Therefore, prior to October 2006, all industries were registered with the District Industrial Centres as small scale industries, whereas after October 2006, the new units are registered as either micro, small or medium enterprises and they include both – manufacturing as well as service sector units.

TABLE 4.17: NUMBER OF UNITS, INVESTMENT AND EMPLOYMENT IN MSM ENTERPRISES

Year	MICRO			SMALL			Total		
	Units	Investment	Employment	Units	Investments	Employment	Units	Investments	Employment
2010-11	72	627.25	504	5	388	51	77	1015.25	555
2011-12	91	752.4	778	9	1001.88	149	100	1754.28	927
2012-13	114	1270.03	1216	14	1133.65	218	128	2403.68	1434
2013-14	109	1812.67	896	16	2502	607	125	4314.67	1503
2014-15	109	2363.27	775	16	1660.81	296	125	4024.08	1071
Total	495	6825.62	4169	60	6686.34	1321	555	13511.96	5490

Source: District Industrial Centre, Tapi (Vyara)

It can be seen from the above table that the number of micro enterprises have increased from 79 in 2010-11 to 495 in 2014-15. Small enterprises have increased from 5 to 60 during the same time period. Employment in micro enterprises has increased from 504 to 4169 while in small enterprises it has increased from 51 to 1321 in the same time period. Investment in medium scale enterprise has increased from Rs 627.25 lac to Rs 6825.62 lac during this period of 2010-11 to 2014-15. During this same period of four years, the investment in small enterprises increased from Rs 388 lac to Rs 6868.34 lac.

4.4.1 Kalamkui, Carpet Weavers: A Story of Cottage Industry that needs

The project team of DHDR, Tapi visited Kalamkui in afternoon hours and interacted with the families who are involved in the art of carpet weaving.

Kalamkui is a village in Vyara taluka with the major source of livelihood as agriculture, animal husbandry and poultry. They switched over to these sources from livelihood from their traditional source of livelihood of carpet weaving. This art of carpet weaving was mastered by the tribals living in this village and nearby areas. This art is passed on from generations-to-generations. However, over a period of time, this art has started becoming extinct, as it has started becoming unremunerative.

The workers are given a contract for weaving the carpets. The machines are installed by the contractors. The machines are manual in nature, made up of wooden pillars and thick chains of iron. The raw material is also supplied by the contractors who are based in Rajasthan. White coloured threads are wrapped around the machine and coloured threads are tied on those white threads. Two persons work on one carpet at a time. One of them communicates the design and the other weaves accordingly. The real art is in conveying the design by one person and following the commands by the other.

The person who conveys the design is paid highest and ranges from Rs 250 to Rs 300 per day. The weavers are paid approximately Rs 120 per day. The remuneration is calculated on the basis of square feet of carpet woven. These people work for 12 hours a day. Since they have to work as much as possible in daylight, they start working from 6:00 AM and continue to work till 6:00 PM. They have to manage for lunch on their own; they are not given any additional payment for that. They get a break for one hour for lunch. It takes 5 to 6 months to complete one carpet of 15" X 15". These carpets are sold for Rs 1 lac to Rs 5 lac per piece. These carpets are having a large export market as well.

The carpet weavers are finding this work unremunerative in comparison with agriculture labour and working on NREGA projects. This carpet weaving industry is passing through a crisis. This needs to be saved from crisis and requires revival. Initially, it may involve intervention on a larger scale in terms of money, infrastructure, training and providing markets. We have learnt from the workers that the product is manufactured by them for the traders of Rajasthan. Hence, the carpet weavers and region do not get the required recognition in the business world. Some kind of intervention is required to boost this activity in the region.

In this economic activity, majority of workers are women. Growth of this activity can bring transformation in the lives of women and their families. Increase in income of the family would mean better health care, better education and better food for family members. It can also have nutritional status of new born babies and children. Thus, it can have very favourable impact on human development indicators.

4.5 Mining and Quarrying

Mining and quarrying activities form an important part of employment generation. Minerals like limestone, sand, black trap, ordinary clay, brick clay and lignite are produced in Tapi.

4.5.1 Mining

Lignite and Limestone are the major minerals mined from different talukas of Tapi district. Other minerals constitute black trap, sand, brick clay and common clay. The talukawise details of mineral production and royalty amount from these minerals for year 2013-14 are given in Table:

TABLE 4.18: PRODUCTION OF MINERALS AND ROYALTY INCOME IN TAPI [2013-14]

Minerals	Production (in Metric Tonnes)			Royalty Income (Rs Crores)		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Black Trap	3447551	4288358	4568110	8.70	13.31	12.39
Sand	2400593	3735005	5291888	4.40	7.34	6.21
Ordinary Clay	174300	793675	748968	0.24	1.53	0.97

Source: Mines and Minerals Department, Tapi (Vyara)

Table 4.18 shows that three types of minerals are mined in Tapi. They are black trap, sand and ordinary clay. Maximum production in 2013-14 is of sand. In 2011-12 and 2012-13, maximum production was of black trap. However, the royalty income is observed to be consistently maximum for black trap. The increase in production of black trap in these three years is 13.98 per cent, of sand has is 37.50 per cent and that of ordinary clay is 62.24 per cent. The royalty income of black trap has increased by 17.52 per cent, that of sand has increased by 17 per cent and that of ordinary clay has increased by 60.19 per cent.

4.5.2 Quarries

There are a large number of stone quarries in Songadh and Uchchhal taluka. Exact number of quarries was not available but discussion with one of the quarry-owners revealed that there are around 24 quarries in Songadh and more than 24 quarries in Vyara. There are few more in Uchchhal, Nizar and Valod talukas as well. The living conditions of the quarry workers are as follows:

A majority of the quarry workers are local residents or they come from the nearby villages. They work for 8 hours a day and the nature of work include drilling, tractor labour, manual labour and *tapgar*. Normally, women work as tractor labourers. The work of tractor labourers is to load and unload the tractor. In all other categories – drilling, manual labour and *tapgar*, only men are employed. Since the employers believe that the nature of work is unskilled, they do not provide any training to the workers. *Tapgars* are paid per week and they earn approximately Rs 1200 per week. *Tapgars* are paid on their output (per tonne or per brass). All other labourers are paid Rs 156 per day. The employers take insurance of all the workers of the quarry for accidents and death. The workers are given helmets by their employers for their protection but it was observed that hardly any worker used the helmet. The employers informed us that they even give uniforms to the workers, but they do not come in uniforms.

The employers informed that there is a problem of shortage of labour and absenteeism. They told us that once they get the remuneration, they remain absent until they exhaust all the money. The workers would invariably remain absent during the period of monsoon till March (*Holi*). As a result, in order to deal with the uncertainties associated with absenteeism of workers, they have switched over to mechanized process of quarrying and allied activities.

The discussion with labourers in the quarry revealed that they were satisfied with remuneration and working conditions. They had facilities for drinking water and sanitation which are basic necessities on any work place. The workers are addicted to smoking and consuming alcohol but there are no instances of quarrel or fights among the workers at the quarry.

4.6 Banking

Banking sector plays important role in economic growth of a region. It helps in mobilizing savings and providing credit. Prior to nationalization of banks, there was urban bias in nationalization of banking sector. Because of this, rural population is exploited by private money lenders. The expansion of banking sector can help in reducing exploitation by money

lenders. In absence of clear property titles and availability of collateral, banks will not lend money. This will continue dependence on private money lenders. Number of banks, amount of savings, growth in loan does provide some broad idea of overall economic growth in the region. Talukawise details of commercial and co-operative banks are given in Table 4.19:

TABLE 4.19: NUMBER OF COMMERCIAL AND CO-OPERATIVE BANKS IN TAPI AS ON DECEMBER 31, 2014

Taluka	Commercial Banks	Co-operative Banks
Tapi	52	13
Nizar	6	3
Uchchhal	4	1
Songadh	10	2
Vyara	27	3
Valod	5	4

Source: Lead Bank Manager, Tapi

Maximum banks are in Vyara. There are 27 commercial banks and 3 co-operative banks in Vyara. Minimum banks are in Uchchhal. There are four commercial banks and one co-operative bank in Uchchhal.

4.7 Government Initiatives

Poverty begets poverty. Public support system is essential to break the vicious circle poverty. The task of eradication of poverty cannot be left entire to the market. Economic growth does not trickle down. Hence, public support system is required to tackle the issue poverty.

4.7.1 Housing

Shelter is basic requirement of human being. Proper shelter provides security and conducive environment for good health, to study and live happily with family. Moreover, possession of house itself adds value to human life. So, provision of housing to poor has multidimensional effect on human development.

Indira Awas Yojana

Indira Awas Yojana is introduced by the central government from 1993-94 for extremely poor houseless families. The scheme is sponsored jointly by the central government and the state

government. The central government contributes 50 per cent towards and the remaining 50 per cent is borne by the state government. The scheme is implemented at the district level by the District Rural Development Agency (DRDA) and at taluka by the taluka panchayat. The unit cost of these houses was Rs 36000 till year 2007-08. This has increased to Rs 45000 in 2010 and to Rs 70000 since April 1, 2011.

Sardar Awas Yojana

A scheme of providing financial assistance for the construction of houses was introduced in State from 1976. From 1st April-1997 a new scheme namely “Sardar Patel Awas Yojana” (SPAY) has been introduced in the State. Under this scheme unit cost has been raised from Rs.36000 + Rs.7000 as beneficiary’s contribution in terms of labour component for providing earthquake resistant *puca* house with effect from 2nd September-2003. The scheme has been modified from 2nd March- 2005, house can be built by hollow block, stone and beneficiary can build their own house as per norms.

Ambedkar Awas Yojana

Dr Ambedkar Awas Yojana is launched for providing housing facilities to families belonging to Scheduled Caste. The scheme is implemented through the department of Social Justice and Empowerment of the Government of Gujarat.

Social Justice and Empowerment Department primarily focuses on socio economic welfare measure for empowerment of backward section of society. The department implements several developmental and welfare schemes for education, economic upliftment, health, housing, etc. for the scheduled castes, nomadic tribes, denotified tribes, socially and educationally, economically backward class and minorities. It implements Special Component Plan with schemes to promote incentives to SC farmers, Housing plans, Panchayat and community development, Gramin Yojanas, mid-day meal schemes, education, forest and environment schemes, etc.

The beneficiaries of Dr Ambedkar Awas Yojana comprise those families which satisfy the following criteria:

- They belong to Scheduled Caste,
- They are houseless, and

- They are categorized as Below Poverty Line (BPL) families having their score between 0 to 20.
- Their annual income is less than or equal to Rs. 24000. Families belonging to extremely backward category are exempt would get benefit irrespective of their annual income.

If all these four conditions are satisfied, then that family can avail the benefit of Ambedkar Awas Yojana.

Widowed, disabled and labourers can also avail the benefits of this scheme. The priority is accorded to these categories of beneficiaries while disbursing the subsidies under this scheme.

The beneficiaries are given a subsidy of Rs. 43500 by the government under the condition that they contribute labour worth Rs.7000, thus the unit cost is Rs.50500. The Department of Social Justice and Empowerment, Government of Gujarat plays an instrumental role in channelizing the grants received for construction to the beneficiaries.

The subsidies are disbursed in two instalments – 50 per cent of the amount (Rs.21750) at the time when the request is sanctioned and the remaining 50 per cent on producing the certificate of the supervisor from Social Welfare Branch, after the construction till lintel level is completed. The details of houses constructed under all three housing schemes are given in Table 4.20:

TABLE 4.20: HOUSING UNDER VARIOUS HOUSING SCHEMES AS ON DECEMBER 31, 2014

Taluka	Indira Awas Yojana* (2010 TO 2015)						Dr Ambedkar Awas Yojana (as on Dec 31, 2014)**	Sardar Awas Yojana (as on March 31, 2015)
	SC	ST	Others	Total Houses Constructed	To be Constructed	Total		
Tapi	25	20273	26	20324	2269	22593	59	23805
Nizar	25	7452	26	7503	291	7794	33	6155
Uchchhal	0	6712	0	6712	265	6977	1	4030
Songadh	0	1999	0	1999	503	2502	4	4717
Vyara	0	3478	0	3478	952	4430	16	7344
Valod	0	632	0	632	258	890	5	1559

*Source: *District Rural Development Agency (DRDA), Tapi (Vyara), **District Social Welfare Office and District Panchayat*

As shown in Table 4.20, 20324 houses are constructed under the Indira Awas Yojana (IAY), 59 under Dr Ambedkar Awas Yojana (AAY) and 23805 under the Sardar Awas Yojana. In Nizar,

96.27 per cent people have got houses under IAY where as in Valod, 71.01 per cent houses are constructed under this scheme.

The discussion with people who were allocated Indira Awas revealed that the social status of people having IAY was higher than those living in kutchha house. However, they were still hesitant to use IAY constructed toilets since they believe that place for sanitation should be away from the place of residence. Therefore, many of them were found to use toilets as store room.

Government of Gujarat has implemented a new scheme for converting rural kachcha house to pukka house for APL families in Tapi District under the Sardar Awas Yojana – II scheme from year 2014-15: The details of talukawise targets are given in table 4.21:

TABLE 4.21: TARGETS UNDER SARDAR AWAS YOJANA-II

Taluka / District	Number of Houses			
	General	Tribal	Other	Total
Tapi	108	15000	26	15134
Valod	1	400	1	402
Vyara	21	5878	6	5905
Songadh	12	4822	2	4836
Uchchhal	9	2200	1	2210
Nizar	65	1700	16	1781

Source: District Panchayat, Tapi (Vyara)

4.7.2 Skill Development

Jan Shikshan Sansthans are non-formal vocational educational institutions for adults. The scheme of Jan Shikshan Sansthan (JSS) is a unique scheme floated by the Government of India. JSSs are institutes that focus on the poor, the illiterates, the under-privileged and the un-reached to provide quality vocational skills. They do not work in isolation but their objective is to look for collaboration with other stakeholders in society. The Jan Shikshan Sansthans offer a large number of vocational training programmes from candle making to computer courses. Their main objective is to organise educational and vocational training programmes with special concern for deprived sections, women/girls and unemployed youth to provide new skills,

refine/sharpen/upgrade the existing skills leading to employment, self-employment and income generation.

Gujarat government have started *Kaushalya Vardhan Kendras* with an objective of providing skill-based training to the youth of Gujarat and making them more employable. In Tapi, the district administration has taken very commendable initiatives by providing training to youth.

4.7.3 *Swarna Jayanti Shehri Rozgar Yojana*

In urban areas of Vyara and Songadh, Swarna Jayanti Shaheri Rozgar Yojana (SJSRY) is being implemented to address the issues of employment creation and income generation by providing resource base and developing latent potential of poorest of poor. The details of SJSRY are given in below:

TABLE 4.22: BENEFICIARIES OF SJSRY AS ON DECEMBER 31, 2014

Year	SC	ST	Disabled	Other	Minority	Total	Women out of Total
2009-10	6	42	44	0	6	98	48
2010-11	0	10	7	0	0	17	12
2011-12	0	13	33	0	5	51	18
2012-13	0	3	2	0	1	6	2
2013-14	2	14	39	0	13	68	26
Total	8	82	125	0	25	240	106

Source: DUDA

One can see that the number of beneficiaries have increased from 98 in 2009-10 to 240 in 2013-14. As on December 31, 2014, there are 8 SC, 82 ST, 125 disabled and 25 people belonging to minority out of 240 beneficiaries of SJSRY. Out of these 240 beneficiaries 106 (44.17 per cent) are women. This scheme has been relaunched as National Urban Livelihood Mission (NULM) from 2014.

4.7.4 *NULM*

The basic objective of this scheme is to provide skill-based self-employment to urban poor. The scheme aims at houseless urban poor and phase-wise empower them by enhancing their standard of living. Over and above, the scheme also focuses on allocating space to hawkers, making provisions for institutional lending, social security and access to skill development. In the year 2014-15, 6 groups are formed under the social dynamism and institutional development. Thirteen applications are sponsored for the purpose of self-employment

programme, out of which three of them have already received the loan amount. In the year 2015-16, two applications are already sponsored and two are pending with the bank. Under the scheme for providing shelter to houseless, request in the form “project report” is sent to state for its approval.

4.7.5 MGNREGA

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was implemented in 2005 with an objective to enhance the livelihood security of people in rural areas by guaranteeing hundred days of wage-employment in a financial year at the rate of Rs.100 per day per person to a rural household whose adult members volunteer to do unskilled manual work. The local authorities should provide work to the applicant within 15 days of receiving the application otherwise, an unemployment allowance is to be paid to the applicant by the state government. Under MGNREGA, contractors and machines are banned on the worksites for manual labourers. This was done in order to ensure work to the job card holder and to reduce delay in assigning of work. Moreover, to bring about transparency in implementation, government encourages public audit of MGNREGA and puts the records on the ministry’s website. The details of employment generated, total funds available, total expenditure incurred, total works identified and total works completed is given in Table 4.23:

TABLE 4.23: DETAILS OF EMPLOYMENT GENERATION, FUNDS ALLOCATED, EXPENDITURE INCURRED AND WORK DONE UNDER NREGA 2013-2014

Progress Indicators	Nizar	Uchchhal	Songadh	Vyara	Valod
No of Jobcards Issued	33201	55984	21529	15093	45675
Employment provided to households	9414	12451	6749	1480	13207
Employment provided to Individuals	18920	12734	9927	1485	13114
No.of persons to whom empolyment was not provided	0	0	0	0	0
Unemployment allowance paid	0	0	0	0	0
Works completed	393	486	345	23	96
Works in progress	21	446	18	21	72
Expenditure (Rs.Lac)	1536.1	475.88	966.85	67.34	699.59
Persondays (In Lac)	2.89	1.48	2.37	0.22	1.94
<i>Source: DRDA, Tapi (Vyara)</i>					

Impact assessment for MGNREGA was carried out in Tapi district revealed that NREGA is effective in villages of Tapi district. The reason could be because of lack of other employment opportunities in Tapi, being a tribal district. In Tapi, there are relatively lesser opportunities in factories, small scale industries and unskilled labour work at construction sites. However, issues in governance and implementation are observed in some villages. Issue of job cards, generating work for 100 days, assigning work to job card holders and payment requires to be closely monitored by the government in order to see that all those who are willing to work and are presently unemployed are covered.

4.7.6 Social Security Schemes

Poverty begets poverty. Public support system is essential to break the vicious circle poverty. The task of eradication of poverty cannot be left entire to the market. Economic growth does not trickle down. Hence, public support system is required to tackle the issue poverty.

Ageing is inevitable and thus of concern to each of us. Old age is a time of multiple illness and general disability. Besides increased level of illness, there are many other things like deafness, loss of mobility, arthritis and a general debility severely restricts oneself to care for oneself. Women also spent majority of their time in domestic labour, which is unremunerative and unrecognized. Thus, women become marginalized in their old age in comparison to their male counterparts. Therefore, it becomes necessary to specially focus on issues of old women in formulation of social security measures. Article 41 of Indian Constitution deals with the state's role in providing social security to the aged.

Social security measures by the state are intended to provide some financial support to persons affected by events like old age, widowhood, physical disability, sickness etc. Practically, all the states in India have introduced schemes that support the destitute, old and widows since the early 1960s. Direct transfer of income to poorest among the poor is required to provide them livelihood.

Scheme for Destitute Old and Disabled

This scheme was implemented in 1995 with an objective to provide financial support to old and disabled people in the age group 60 years and above, and he / she should not have a son of 21 years or above age. However, if the son is physically or mentally disabled or suffering from serious illness like tuberculosis, cancer etc. the later condition is relaxed. Under this scheme, the

beneficiaries receive Rs.200/- per month till the age of 65 years and then they receive Rs. 400/- per month.

Indira Gandhi Old Age Pension Scheme (IGNOAPS)

The Government of India instituted Old age pension to destitute older persons several years ago. The pension amount was raised from Rs 75 per month to Rs 200 couple of years ago. Under the latest scheme called India Gandhi National Old Age Pension Scheme (IGNOPS) any senior citizens above 65 in BPL category is eligible for a pension of Rs 200 pm from GOI contribution. The centre has recommended that each state may supplement this with a minimum of Rs 200 per month from its own resources.

Recently the scheme has been revised and is implemented by the Department of Social justice and Empowerment of Government of Gujarat via a resolution on August 10, 2009. The states are required to furnish a certificate to the central government that all eligible persons have been covered under IGNOAPS. The eligibility criteria to qualify as beneficiary of this scheme are the applicant should belong to the age group 65 years and above, and should be a BPL card holder. The beneficiaries receive Rs. 400/- per month. In this scheme, Rs. 200/- is equally contributed by the state and central government.

National Family Welfare Scheme (Renamed as Sankat Mochan Scheme)

This scheme was implemented by the Social Welfare Department vide a resolution on September 9, 1995. This scheme was renamed as Sankat Mochan Scheme vide resolution dated January 6, 2001. As the name “Sankat Mochan” suggests, the objective of this scheme is to help rehabilitate the survivors of the deceased sole breadwinner of the family. In order to qualify as beneficiary under this scheme, the applicant should be living below poverty line (BPL), the main breadwinner of the family has died a natural or accidental death and, the application is filed within two years from the death of the main breadwinner. The deceased main breadwinner of the family could be male or female with age 18 years or above and below 65 years. The beneficiary is entitled to get a one-time payment of Rs. 10000/- for the purpose of rehabilitation.

Destitute Widow Rehabilitation

The major objective of this scheme is to give financial support to the destitute widows living BPL and her dependent children. The applicant becomes eligible for benefit if she is a widow, living below poverty line (BPL) in age group 18 to 60 years, and the application is filed within 2 years from the death of her husband. Her individual income is less than Rs. 2400 /- per annum and the family income is less than Rs. 4500 /- per annum, and she does not have a son of 21

years or above age. However, similar to other schemes, this condition is exempted if he is physically disabled or mentally unstable.

The amount of benefit is Rs. 500/- per month plus Rs. 80/ - per month per child, up to two children, up to a maximum of four years. Under this scheme, the widow is provided training for self-employment and is given a one-time financial help of Rs. 3000/- under the Manav Garima Scheme or is provided a loan of Rs. 3000/- as margin money under the for the purpose of rehabilitation. If the widow continues to receive the benefits under this scheme up to the age of 60 years, under other provisions of this scheme, she automatically becomes the beneficiary of the Destitute Old and Disabled Scheme. Moreover, the widows receiving benefits under this scheme get additional benefit of personal accident policy, by paying a premium of just Rs. 15 /- per annum. The details of beneficiaries of these schemes are given in below table.

TABLE 4.24: BENEFICIARIES OF SOCIAL SECURITY SCHEMES AS ON JULY 31, 2015

Taluka	Destitute Old and Disabled	IGNOAPS	Destitute Widow Rehabilitation
Tapi	1558	10038	2441
Nizar	596	2454	197
Uchchhal	405	3687	107
Songadh	176	1531	864
Vyara	186	2052	726
Valod	195	314	547
<i>Source: Prant Offices, Tapi District</i>			
<i>* Destitute Widow Rehabilitation scheme is now a part of Sankat Mochan Scheme</i>			

Number of beneficiaries under the social security scheme has increased over a period of time and people have benefitted from these schemes in one way or the other. However, if steps are undertaken to create awareness about the rights and the scheme to these people, the implementation could be more effective. Involvement of NGO, *gram mitra* and local self-help groups can help improving the effectiveness of these schemes. Government can also consider increasing the frequency of payment and the amount being disbursed under these schemes.

4.7.7 Garib Kalyan Mela

Garib Kalyan Mela campaign was launched on December 23, 2009 with an objective of empowerment of poor by educating them about various government schemes and the eligibility criteria for availing benefits through these schemes. Sanctioning and disbursement of loans for

starting a small business or distributing a tool-kit for the same is also done through Garib Kalyan Melas. Thus, Garib Kalyan Melas help in creating awareness as well as providing livelihood opportunities to the poor people. This scheme eliminates the role of any middlemen / intermediary and thus, the benefit reaches the beneficiary without any procedural delays.

Garib Kalyan Melas were organized in all talukas of Tapi. The number of beneficiaries and the amount of benefit distributed under Garib Kalyan Mela is presented in table 4.25:

TABLE 4.25: BENEFITS THROUGH GARIB KALYAN MELA IN TAPI [2013-2014]

Taluka	2013		2014	
	Number of Beneficiaries	Amount of Benefits Disbursed (In Lakhs)	Number of Beneficiaries	Amount of Benefits Disbursed (In Lakhs)
Nizar	2778	108.83	12445	74.47
Songadh	2069	107.07	9252	151.65
Valod	1082	59.28	3500	128.5
Vyara	2172	134.9	3023	283.9
Uchchhal	955	45.96	5654	30.64
Tapi	9056	456.04	33874	669.16
<i>Source: DRDA, Tapi (Vyara)</i>				

One can see from above table that a total of Rs 44.67 crore is distributed among 37207 beneficiaries. Maximum (10131) beneficiaries are from Vyara and minimum (3025) are from Valod.

4.7.8 Co-operatives: A Case Study of Lijjat Papad, Valod

Papad making activity is one of the oldest activities which has improved the lives of women in a decisive way. Papad is an accomplice in while having lunch or dinner or as a starter. The product is very popular all over India. In South India, it is known as papadam. Papad has a huge market potential. Papad making activity is mainly done by women. Traditional papad making activity does not require much investment but proper marketing is required to increase the size of the market and get adequate returns. Expansion of market for papad may require institutional support.

Shri Karjashibhai Lohana, popularly known as Chhagan bapa, took the initiative of commercially making papad and marketing it. He started this venture in Mumbai with 7 women in March 1959, with a borrowed sum of Rs 80. Today, the co-operative – Shri Mahila Gruh Udyog Lijjat Papad – is recognized by the Khadi and Village Industries Commission. Today, there are 79 branches, 27 divisions and 43000 women members across India. Shri Mahila Griha Udyog makes a wide range of papads, masalas, wheat flour, ready to eat chapatis, appalam and detergent (powder, cake and liquid). Lijjat Papad is headed by 95-year old Smt Jaswantiben Popat. Any woman can become a member of the co-operative, irrespective of caste, religion or income.

In Tapi district, there are three centres – Valod taluka headquarter, Buhari and Golan – both villages in Valod taluka. There are around 1650 women members in these three branches. In these branches, normally, one woman from each household becomes the member and she is given a membership number. Only women can avail the membership of this co-operative.

The entire process of papad making involves three steps: Preparation of dough, rolling out papad to round shape and then drying the rolled-out papad. Preparation of dough is bit complex and involves a lot of manual labour. The co-operative has focused on reducing the heavy manual labour involved in preparing the dough for papad. The entire process of preparing dough is now mechanized.

The rolling out of papad and drying of rolled out papad is done by the members of the co-operative. The women have to collect at least 3 kg of dough to make papads. The dough is available from the factory outlet from 6:00 AM. Women collect 6 to 7 kg of dough, roll out the papads, dry them and return the dried papad back to the factory outlet. Normally, papad are sundried. But in monsoon, papad are dried on burning coal. The co-operative supplies coal to the women involved in making papad.

Prior to joining this co-operative, these women worked as agriculture labourers and were exposed to risks of seasonal and sporadic unemployment. The activity of rolling out papad goes on round the year. The most important aspect of this initiative is that women work from home. They have not to go to the factory and work for fixed hours. They can earn by working at home, so that their household chores are not disturbed and their children are also taken care of. A large proportion of women working in this co-operative are widows, women abandoned by their husbands / in-laws. The women work for 4-5 hours a day. They belong to Below Poverty Line

(BPL) Hindu and Muslim families. Only a minority of women belong to high-income families. Thus, earning from this activity provides them sustenance and livelihood.

The women are paid Rs 26 per kg of papad as labour charges. They return the rolled out, dried papad every alternate day and they are paid remuneration every third day. Normally, papad prepared from 1 kg dough weighs around 800 kg. The weight loss results from drying of papad. It is worth noting that though these women are termed as members of the co-operative, only a few of them are able to share their opinions or contest for positions. The members are merely providing manual labour to the co-operative. However, it is a win-win situation where, the women members earn a decent livelihood and the co-operative gets manual labour required for making papad. It was observed that though only one woman gets the membership of the co-operative, more than one members of the family (husband / children) help her in rolling out and drying of papad. Now-a-days even machines are available which would roll out papad from the dough. But this co-operative still uses manual labour and thus, contributes towards providing livelihood to women.

Each woman earns around Rs 5000 to Rs 6000 per month, which has increased from Rs 850 per month in 80's. This amount earned by the women members is almost equal contribution to the family income. For widows and abandoned women, this is the only source of family income and is sufficient to provide them with a decent living. A member of this co-operative can buy shares of this co-operative worth Rs 100 to Rs 500. The shareholders get the benefit of availing loan upto an amount of Rs 4500. Women have earned self-respect in the family because of this activity and they have devised a slogan in Gujarati "*Lijjat chhe to ijjat chhe*¹".

4.7.9 Self-Help Groups

SHGs are small informal groups that have socially economically homogeneous membership of poor people drawn from the same village or from nearby villages. The composition of membership is mostly exclusively males or exclusively females. The members are self-selected with the liberty to choose their group depending on their level of affinity with the other potential members. Thus the basic design of SHG is robust and makes it easy for the NGO facilitator to build it into a strong social and financial institution.

The SHG derives its strength from the fact that it provides an avenue for the poor to save and take small amounts of credit as per their requirement. This forms the primary stake that the member develops in the group. The peer group structure ensures strict adherence to the group norms.

An SHG has 10 to 20 people from a homogenous class. They come together for addressing their common problems. They are encouraged to make voluntary thrift on a regular basis pooled resources to make small interest bearing loans to their members. The process helps them imbibe

¹ English Translation: Self-Respect through Lijjat.

the essentials of financial intermediation including prioritization of needs, setting terms and condition, and accounts keeping. This gradually builds financial discipline in all of them. Once the groups show this mature financial behavior, banks are encouraged to make loans to the SHG in certain multiples of the accumulated savings of the SHG.

TABLE 4.26: TALUKA WISE SHGs FORMATION, GRADING AND STRENGTHENING

Taluka	Total Villages	SHG Formation		Grading		SHG Strengthening	
		Current Year	Total	Current Year	Total	Current Year	Total
Tapi	512	686	7134	1166	6665	2233	2233
Nizar	85	106	1135	146	959	325	325
Uchchhal	62	77	1015	111	935	261	261
Valod	40	105	865	174	800	300	300
Songadh	177	155	2104	453	2124	553	553
Vyara	148	243	2015	282	1847	794	794

Source: DRDA, Tapi (Vyara)

TABLE 4.27: TALUKAWISE SHGs WITH VO, ACTIVE WOMEN PARTICIPATION AND VILLAGE SATURATION FOR THE YEAR 2014-15

Taluka	VO Formation		VO Training & CIF Given		Active Women (CRP)		Village Saturation		Revolving Fund to SHGs		Revolving Fund Amount Rs Lacs	
	2014-15	Total	Training Total	CIF Total	2014-15	Total	2014-15	Total	2014-15	Total	2014-15	Total
Tapi	42	107	31	0	308	308	136	254	1056	5529	70.63	336.50
Nizar	12	23	10	0	43	43	8	26	120	620	12.14	47.45
Uchchhal	14	28	6	0	26	26	9	17	88	696	9.01	49.37
Songadh	4	29	4	0	21	21	70	117	423	1658	25.27	94.05
Vyara	8	12	6	0	178	178	42	72	271	1810	15.57	103.25
Valod	4	15	5	0	40	40	7	22	154	745	8.64	42.38

Source: DRDA, Tapi (Vyara)

In order to understand the activities of SHGs in Tapi district in accordance with the purpose of the study, some villages were visited and SHGs working in those villages were studied:

During the field visit, the investigators used to meet the “Sarpanch” and put up a request to meet the members of the SHG / Sakhi Mandal. This was followed by a focus group discussion and personal interaction with the SHG members.

FINDINGS FROM THE FIELD STUDY

Based on the field visit, focus group discussion and personal interview, following broad findings have emerged:

- The data shown in Table 2 clearly shows that about 70% of the SHGs in Tapi district are active, whereas about 20% of the SHGS are inactive.
- Majority of the SHGs (70%) have been promoted by DRDA in Tapi district., followed by ICDS (15%). NGOs have promoted only 5% of the SHGs existing in Tapi district.
- About 55% of the SHGs have been formed under “Sakhi Mandal” scheme, whereas 30% of the SHGs are formed under “SGSY” scheme.
- A very few SHGS have been associated with other NGOs.
- Most of the SHGs formed under “Sakhi Mandal” scheme are led by “Mrs. Sarpanch”.
- The major objective of these SHG (Sakhi Mandal) is to promote savings. Very few of them have reached to a level of financial maturity to avail credit from the lead banks and promote other activities in order to enhance the status of women.
- It is observed that the meeting of these SHGs takes place normally once in 2 months.
- The education level of the members of SHGs is very low. Most members have done their schooling and a very few members have studied up to SSC.
- The SHGs formed in different villages in Tapi district are not restricted to a particular community, rather it is open for members of all community such as Gamit, Chaudhari, etc.
- Members normally contribute Rs. 50/- per month towards savings.
- There is no financial audit of the transactions of the SHGs.
- A very few SHGs are active in providing training to their members.
- Several SHGs / Sakhi Mandals have broken down (dead) largely because the members could not derive any significant benefit out of it.

- It was reported by several female member that there was interference of the male members.

The amount of savings per SHG happens to be very less resulting in non-functioning of the SHGs.

4.7.10 Hangati Mahila Maandal: A Successful Women Self-Help Group

The Team DHDR, Tapi visited the office of Hangati Mahila Mandal thrice. During the first two visits, the team interacted with trustees and the women beneficiaries who were involved in the work of diamond cutting and polishing. Women beneficiaries belonging to the different parts of Tapi districts had come to the Hangati Mahila Mandal office and a focus group was conducted with them. Around 20 women participated in the discussion.

Mandaal is a village in Songadh taluka and it is close to the National Highway No. 6. However, in 1961, this village was in a very desolate condition. The people were suffering from hunger and poverty, the land was infertile and uneven; and the houses were not having proper roofs. Hangati² Trust started the work of developing this region in 1961. The objective of this trust was to improve the living conditions of the people in Maandal and nearby villages by offering them better livelihood opportunities. The first step undertaken by the organization was to level the land, constructing boundaries and watershed development. Catholic Relief Society (CRS) supplied oil and food grains in this region. Initially, the trust faced resistance from women fearing that the trust would arouse dispute among tribals. They are normally found to live in groups, as one big family. But later on as the trust started involving them into different activities, generating livelihood, they started getting associated with the Hangati Trust. The trust has only women members. If women are made financially self-sufficient, they would invest the money earned in family health care and education of children. Thus, the trust focused on sensitizing women and helping them becoming financially self-sufficient.

The first step towards institutionalizing these efforts was to set up a milk co-operative society in 1975. In the initial phase, the co-operative had to face resistance from the milk consumers, as there were some reservations associated with using milk supplied by the tribals. However, later

² Hangati is a word in gamit dialect of Gujarati; and is derived from the Gujarati word 'Sangathi', which literally means company / togetherness.

on Sumul intervened and today, it is the largest buyer of milk from this co-operative. The annual turnover of this milk co-operative is Rs 1.5 crore to Rs 2 crore as on today.

FIGURE 4.6: DISCUSSION WITH WOMEN BENEFICIARIES OF HANGATI TRUST



Once the local tribals started earning decent livelihood to meet their basic needs, they started educating their children. The Hangati trust, then set up a school and a hostel in Vyara. Later on, the trust set up two more schools – one in Maandal and another in Dakhwada. The CRS continued their support by supplying oil and food grains.

Simultaneously, the trust started working for improving community health. They trained health workers for preventive health care and mid-wives (*dayan*) for deliveries. Soon, the Infant Mortality Rate and Maternal Mortality Rate in the region reduced to zero. Then, they set up a dispensary – Snehdhara Dawakhanu – for preventive and curative health care. The doctors of Snehdhara dispensary started sensitizing the people living in Maandal and nearby region on various aspects of health care. In one such endeavour to educate people on preventive health, the trust distributed *dohya*³ to all the members of Hangati Mahila Mandal.

Once education and health care activities were in place, the trust focused on other alternatives of livelihood. Hangati trust helped the members to construct a wired structure in front of their houses and gave one hen to each household. Thus, the trust gave an idea of poultry as a source of livelihood. It was observed during the field visit that each household had a poultry farm in front of their house. Another eco-friendly alternative of livelihood given by the trust is to plant trees around the houses. In association with Krushi Vignyan Kendra (Centre for Agricultural

³ Handled container used to fetch drinking water that is stored in earthen pots.

Sciences), they provided the beneficiaries with seeds of various fruits. This had manifold advantages: the trees around the houses helped in maintaining temperature and humidity, the family got regular supply of fruits which helped in improving nutritional status on one hand and using it for income generation on the other. The plantation of trees helped in restoring the ecosystem to some extent that was disturbed by indiscriminate cutting of trees and depletion of forests. Apart from fruit trees, the trust helped the families to grow trees of *Mahuda* and drum stick (*shekta ni shing*). In collaboration with Nirmal Seed Company, the trust has managed to get improved⁴ varieties of seeds of Mahuda and drum stick. Mahuda and drum stick provide good nutrients to the body. Moreover, Mahuda is used in breweries and dried drum stick is used to cure cough. The trust, in collaboration with Navsari Agriculture University has encouraged the animal husbandry activities.

Now, when house is surrounded by the trees, a trench can be constructed which would collect dung and other organic waste in seasons other than monsoon. This could then be used to produce gobar gas and vermi compost. However, this is still in its planning phase.

In 1999, a saving and lending co-operative called Shri Maandal Vibhag Adivasi Mahila Bachat ane Dhiran Sahakari Mandali Ltd. was set up. Initially, women used to save around Rs 10 to Rs 20. Even the husbands would pressurize the wife to withdraw all the money deposited in the co-operative but the scenario has changed over a period of time. Women are now depositing larger sums of money ranging from Rs 100 to Rs 300 depending upon their income and expenses. Now even, the husband / in-laws would come and deposit money on a monthly basis, if the woman member is not able to come for some reasons. Today, the co-operative has around 3060 members, 35 more villages are added as beneficiaries to the existing 15 villages. The average yearly saving is Rs 3.5 lac and the loans are available at a reasonable rate of 12 per cent, which is half of the market rate of 24 per cent.

In one of the latest initiatives taken by the Hangati Trust has collaborated with the diamond industrialists in Surat to provide training to the women for cutting and polishing of diamonds. The women get training in Maandal for 3 hours a day. They have not to go to Surat and during the training period, they get a stipend of Rs 2500 per month.

⁴ Not hybrid; as they suspect that hybrid variety of seeds might most likely contain endosulphan, which is detrimental to health of foetus.

The trust thus, addresses several objectives at a time: educational opportunities to local tribal people, providing adequate health care facilities, providing them with livelihood opportunities to women. The trust also focuses on better livelihood of families by making women financially self-sufficient.

4.7.11 Action Plan for Strengthening SHGs

The action plan for strengthening and fostering SHGs in the year 2015-16, under the National Rural Livelihood Mission (NRLM) / National Rural Livelihood Project (NRLP) / Mission Mangalam (MM) – II is given in Table 4.28:

TABLE 4.28: ACTION PLAN FOR SHG FORMATION AND SHG STRENGTHENING FOR 2015-16

Taluka / District	SHG Formation		SHGs Strengthening	
	Target 1st year 2015-16	Current Year	Target FY 2015-16	Current Year
Tapi	712	110	1445	853
Nizar	190	8	240	138
Uchchhal	158	10	226	32
Songadh	100	38	439	113
Valod	84	14	180	130
Vyara	180	40	360	440

Source: DRDA, Tapi (Vyara)

TABLE 4.29: ACTION PLAN FOR VO FORMATION AND VO TRAINING AND INVESTMENT FUND FOR 2015-16

Taluka / District	Village Organisation Formation		VO Training & community investment fund Given	
	Target 1st year 2015-16	Current Year	No. of VO Training Target FY 2015-16	Current Year
Tapi	66	6	66	3
Nizar	18	0	18	0
Uchchhal	18	0	18	0
Songadh	10	2	10	0
Valod	10	3	10	3
Vyara	10	1	10	0

Source: DRDA, Tapi (Vyara)

TABLE 4.30: ACTION PLAN FOR CRP DEVELOPMENT AND NUMBER OF COMMUNITY PERSONS TO BE TRAINED IN 2015-16

Taluka / District	Community resource Person Development		No of Community resource Persons to be trained	
	Target 1st year 2015-16	Current Year	Target FY 2015-16	Current Year
Tapi	609	357	583	0
Nizar	102	10	102	0
Uchchhal	74	12	74	0
Songadh	211	137	211	0
Valod	48	50	48	0
Vyara	174	148	148	0

Source: DRDA, Tapi (Vyara)

TABLE 4.31: ACTION PLAN FOR NUMBER OF SHGs TO BE TRAINED, NUMBER OF SHGs TO BE PROVIDED REVOLVING FUND AND AMOUNT OF REVOLVING FUND (IN LACS) FOR 2015-16

Taluka / District	No of SHGs to be trained		No. of SHGS Provided Revolving Fund		
	Target 1st year 2015-16	Current Year	Target FY 2015-16	Current Year	Current Year (Amount in Lakhs)
Tapi	1445	0	812	79	7.16
Nizar	240	0	190	5	0.75
Uchchhal	226	0	160	13	1.71
Songadh	439	0	150	8	0.75
Valod	180	0	96	12	0.95
Vyara	360	0	216	41	3.00

Source: DRDA, Tapi (Vyara)

4.8 Summary

More than 75 per cent people depend on agriculture even today in Tapi. Only 40 per cent of area is equipped with irrigation facilities. Watershed development through rainwater harvesting can help augmenting the water needs for agricultural development. Rapidly expanding markets, innovations in finance, market institutions and collective actions, revolutions in biotechnology and information technology can offer good opportunities to promote development through agriculture. A lot of emphasis is put on horticulture crops these days. Among fruits, Tapi is growing mangoes, bananas and papayas in large proportion and among vegetables, the yield of Okra and Brinjals is quite high. There are huge export opportunities for these fruits and vegetables. Horticulture development can also be a major source of employment generation for those people who work only in agriculture and allied activities.

Animal husbandry and poultry are also allied to agriculture and people are involved in milk production and production of poultry birds. Large number of milk co-operatives facilitate the milk producers in fetching a market for milk in Tapi. There are good veterinary services in the Surat district to cater to the healthcare needs of cattle and other animals. A milk co-operative in Bhitbhudrak has undertaken the work of producing gas using dung of cattle. This gas is supplied to households of the members of this co-operative twice a day during cooking hours.

Tribes with special art, like weaving carpets, is found in Kalamkui and nearby areas. However, this population is declining because jobs in small scale industries and quarries are more remunerative than taking contract to weave the carpets.

Government has devised various schemes keeping in mind those people who are not capable of earning their livelihood themselves. Rehabilitation schemes are implemented for destitute and widows whose sole breadwinner of the family has deceased. Impact assessment of these schemes reveal that the benefits are percolating down to the needy. However, the amount and frequency of disbursement can be increased. There are schemes for those who are willing and capable to work. MGNREGA is introduced to provide guaranteed employment for 100 days. The impact assessment results reveal that MGNREGA is quite successful in Tapi. SJSRY is another scheme for providing urban employment to people. Categorywise data on beneficiaries of SJSRY reveal that people belonging to ST category and women constitute a major proportion of beneficiaries. Self Help Groups in various areas are functional in Tapi. More specifically, women led and only women SHGs (called Sakhi Mandals) are very active in Tapi.

SWOC ANALYSIS

Strengths

- There are large number of quarries in Tapi, which can be major source of employment, next to agriculture.
- There are good veterinary services in the district to cater to the healthcare needs of cattle and other animals.
- Social security schemes are working well in Tapi that provides a support to aged people and destitute widows, who are not able to work.
- A lot of work of road building, digging of wells and other infrastructure development work is done under MGNREGA.
- Tapi is a tribal district and large proportion of STs are taking benefits from various housing schemes.
- Sakhi Mandals are very active in Tapi.
- Lijjat papad has not only generated employment opportunity for women but also is a step towards women empowerment.

Weaknesses

- Industrial development is meagre.

Opportunities

- More than 75 per cent people are still dependent on agriculture as their main source of livelihood. Increase in agricultural production would generate both – farm and non-farm employment.
- Development of watersheds and drought proofing to develop sustainable agriculture.
- Benchmarks can be set up to increase the production and yield of agriculture by adopting a taluka-centric approach.
- Mirco-credit schemes may be introduced for small farmers.
- More activities can be planned and remaining villages can be covered under ATMA.
- Urban areas have better livelihood opportunities in terms of income and quality of employment. Special efforts can be undertaken to attract industries to these regions.
- Mangoes, Banana and Papaya are major horticulture fruits where as Onions, Brinjals and Potatoes are major horticulture vegetables in Tapi. Opportunities can be generated to promote exports of these fruits and vegetables. Mini market yeards, spot exchanges, warehousing and cold storages facilities may be created under Mission Mangalam to take care of sales of these horticulture crops, fruits and vegetables.
- Poultry is already well-developed in Tapi. Initiatives can be taken to foster poultry farming.
- There are many quarries in Tapi. This provides huge employment opportunities.
- Gobar Gas is generated by a co-operative in Bhitbudrak, a model that can be adopted by some other villages.
- There is an opportunity to revive the dying art of carpet weaving, which is now functional only in Kalamkui and nearby areas. Kaushalya Vardhan Kendras' infrastructure can be used to develop skills for this art.

Challenges

- Kalamkui is a village that has a special art of carpet weaving but is gradually dying down because of less lucrative remuneration.
- Very large area of land is under rice cultivation but there are very few rice mills in the district.

CHAPTER 5

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5.1 Summary:

Tapi district was part of Surat district till September 2007. Erstwhile Surat district consisted of both intense urban agglomeration and most remote tribal areas. These extreme realities required completely different approach in managing such diverse areas in same district. Statistical profile of the district due to aggregation of data failed to highlight real condition of different area and provide alert for severe need for developmental efforts in some of these tribal areas. In this milieu, Tapi district was created by splitting five rural tribal talukas viz. Vyara, Songadh, Uchchhal, Nizar and Valod from Surat district. This newly formed Tapi district being part of tribal belt of Gujarat faces many developmental challenges on poverty, livelihood, displacement, education, public health, infrastructure, gender issues. It needs greater government support for progress on human development count.

Development challenges in tribal regions are interlinked with one another. Due to remote location of tribal areas, fruits of social and economic development do not reach easily. It causes widespread poverty and illiteracy. In absence of education and skill formation, it becomes extremely difficult to provide meaningful employment for livelihood to people of these areas. Poverty and lack of education usually take its toll on health of people. Poor infrastructure further aggravates situation by posing difficulty in boosting economic activity and delivering social services like education and public health services. It requires multi-pronged efforts for quicker development of tribal areas and improve quality of life of people living in tribal areas. Successive Governments both at national and state level are taking several initiatives for promoting human development in different parts, especially in tribal areas.

In order to achieve national goals of human development, Twenty Point Program (TPP) is designed by the national government. The aims of Twenty Point Program (TPP) are eradicating poverty, raising productivity, reducing income inequalities and removing social and economic disparities. State Government's initiatives for tribal development in Gujarat are integrated through the 'Chief Minister's Ten Point Program for the Development of Tribal Areas'. It is known as 'Vanbandhu Kalyan Yojna'. This program also focuses on employment generation, education, economic development, health, housing, safe drinking water, irrigation, infrastructure development and development of urban areas.

These programs aspire to reduce disparities between tribal regions and other parts of the state. These programs try to address issues of poverty on long term basis by providing means of livelihood to people, providing conventional education and providing vocational skills creating required infrastructure and delivering holistic healthcare services particularly vulnerable section of society. State government has demarcated Rs. 15000 crore for Vanbandhu Kalyan Yojana. The aim of the project is to double the income of Integrated Tribal Development Areas (ITDA) in next five years by increased spending on Tribal Area Sub Plan (TASP).

5.1.1 EDUCATION

Tapi is a tribal district and consists of large ST population. Government needs to come out with specific measures to further improve level of education amongst STs. Study has indicated that poverty, illiteracy of parents, apathy of poverty stricken illiterate parents towards education of their children, local environment, lack of educational facilities, lack of day care kind of system in villages etc. are some of the factors responsible for low educational level amongst tribal population.

There are also certain issues that government has to confront with while designing and implementing educational system for tribal people. The composition of the tribal population is not uniform in all regions. Efforts needs to be made sensitise them with benefits of education. It is observed that amongst tribal, some groups are highly contented with their life and conditions. They need to be invigorated to aspire for better quality of life. The tribal people should feel the need for education. Special sociological and economic study should be carried out to understand their psyche and conditions and based on such understanding better strategy should be devised to provide better education to these groups.

The state government has also take up several initiatives to improve enrolment ration, and retention rate in the primary schools. The state government has also undertaken special efforts to provide education to girls. For increasing female literacy, state government has initiated special *Kanya Kelavani* drive. For the *Kanya Kelavani* initiatives, due care is being taken by the government to recruit qualified teachers. Due to such efforts, enrolment rate has increased and dropout rate amongst vulnerable sections have reduced significantly. In all such initiatives aim of government is to universalize primary education for children in age group of 6 to 14 years.

In tribal society, malnourishment amongst children due to poverty has also posed a great challenge in literacy drives and in governments aim of building a healthy society. It is not well accepted that a healthy body and mind is a pre-condition to human development. Government with a view to providing better nourishment to children again started the Mid Day Meal scheme in January 1992. The Mid Day Meal scheme is also used to provide incentives to parents for sending their children to school. It is being implemented throughout the state. Under this scheme, children are provided a healthy and nutritious meal. Under the scheme of Nutritional Support to Primary Education, government provides food grains @100 grams per child per day free of cost to the children of standard I to V. Under this scheme, children are provided a healthy and nutritious meal in school itself.

Government's various initiatives like Mid-Day Meal, Gunotsav, Sarva Shiksha Abhiyan Mission and such similar schemes have received good response in improving enrolment, increasing retention and decreasing dropout from elementary schooling.

5.1.2 HEALTH

Due to inadequacy of health infrastructure in rural and tribal areas there are a number of issues related to public health in these regions affecting human development adversely. In order to improve health conditions in such region, government has taken several initiatives. Government has envisaged and implemented several programs and schemes under National Rural Health Mission (NRHM), Reproductive Child Health (RCH), Integrated Child Development Scheme (ICDS), Chiranjeevi yojana, Bal Sakha Yojana, Janani Suraksha Yojana etc. to provide better health care to rural population. Government also introduced services of 108 ambulance services, to ensure timely accessibility of existing healthcare infrastructure for those in need of it. Need for special focus on human development in backward region of the country has arisen from the appalling fact that the largest number of anaemic women and children lives in India. Exceptional economic growth in recent past has substantially increased per capita income in our country, yet the levels of under nutrition have remained unchanged. This has indicated that just economic thrust can remove this curse.

Government has adopted strategy of strengthening institutions of panchayati raj to manage and deliver improved healthcare services to local people. To induce awareness and educating people and promoting access to healthcare services it is taking help of Accredited Social (Female) Health Activist (ASHA). It is planned that there will be ASHA worker in every village with a population of 1000. ASHA will coordinate variety of government programs in the village. Government is also strengthening existing infrastructure of Primary Health Centres (PHCs) and Community Health Centres (CHCs). Preparation of inter-sectoral District Health Plan is being encouraged, in areas of issues affecting health like drinking water, sanitation and hygiene, nutrition etc. It also focuses on strengthening capacities for data collection, assessment and review for evidence based planning, monitoring and supervision. Non profit sectors are also being promoted to reach underserved areas.

A key issue in ICDS is the absence of designing appropriate interventions for children in the various age cohorts between 0-6 years, and the lack of attention to children below three years, which is the time when nutrition interventions have the most effects. Main concerns of the AWW include inadequate infrastructure; lack of training; low and irregular salaries; excessive work overload and lack of community support. For success of ICDS, it is very important to focus on conditions of AWW and motivating them by monetary and non-monetary incentives.

It is identified that in Gujarat and particularly in tribal region, reason for MMR and IMR happens to be large number of domiciliary deliveries. In such cases, deliveries are carried out by untrained persons and in unhygienic conditions. It requires provision of Emergency Obstetric Care to save lives of women who develop complications during pregnancy and delivery. Yet provision of these services, especially to poor and tribal people is difficult from government institution due to lack of adequate staff arising from vacant positions of gynaecologists in CHCs. Chiranjeevi Yojna (CY) was initiated as a scheme to increase institutional deliveries and to encourage private practitioner to provide maternity services in remote areas that record the highest infant mortality and maternal mortality rates in the States. CY is a maternity insurance scheme for the families that are under Below Poverty Line (BPL). Broad guideline for designing and developing a proposal for maternity insurance are: (1) treatment coverage in designated public and private institutions (2) Sum assured would account for compensation in case of maternal death (3) Inclusive of transport allowance and incentives to the Trained Birth

Attendant (TBA) (4) inclusion of pre existing condition like hypertension and complication from previous pregnancies etc. and (5) Sum of INR 10,000 in name of baby, in case of maternal death.

In order to provide timely health care services Bal Sakha scheme is introduced. All babies born to BPL mothers are covered for neonatal care by partnering pediatricians, including care in their Neonatal Intensive Care Unit at no cost to the beneficiary.

Importance of cleanliness and hygienic conditions cannot be more emphasised. Government of Gujarat realised this fact and introduced program called Nirmal Gram yojana in 2007-08 for cleanliness at gram level. Under this scheme there is provision for financial assistance to Gram panchayats of the villages which are declared as Nirmal Gram. This program induces Gram panchayats to spray medicines in dirty places, public gutter lines and roads; to shift dung-hills to proper places outside the village; to introduce Scavenging tax in gram panchayat. It strongly emphasises development of village sanitation arrangements. Toilets should be constructed in the local self-governments, schools, panchayat ghar, anganwadi, primary health centers etc. Arrangement for individual and community toilets should be made and awareness needs to be created to use those toilets. Total sanitation campaign should be organized in village areas. Maintenance of animals should be ensured at a proper distance from residential places. State government provides the amount equal to collection of scavenging tax by the village as incentive grant.

Thus there are several efforts being made in Tapi district for improving health conditions particularly in area of malnutrition, IMR and MMR. To understand impact of above discussed initiatives we need information on proportion of population suffering from these problems. However temporal data on these indicators are available neither at district level nor at block level. Thus it has made extremely difficult to understand outcome of government interventions.

Leptospirosis and Sickel Cell Anaemia are the major causes of worry in Tapi. Leptospirosis is mostly prevalent among tribal agricultural labourers. It has a high mortality rate, if appropriate treatment is not provided on time. Mortality rate is higher among older people especially men. More cases of leptospirosis are reported in monsoon season, especially in the month of August. Both preventive and curative measures can help to reduce mortality due to leptospirosis. Dense

population of rodents, presence of large number of domesticated, stray and wild animals, stagnation of water for long period, humidity and agriculture cropping practices are some of the factors that contribute to occurrence of leptospirosis. They are transmitted directly or indirectly from animals to humans. Active surveillance, training of medical personnel at the level of PHC, public awareness and provision of medicine and diagnostic tools are some of the measures undertaken by the government to tackle of menace of leptospirosis.

Sickle cell anaemia is an inherited blood disorder that affects the haemoglobin molecule in red blood cells. Haemoglobin is the part of the red blood cells that carries oxygen from the lungs and delivers it to the rest of the body. Anaemia can lead to shortness of breath, fatigue, exercise intolerance, and delayed growth and development in children. Kids with sickle cell disease are at increased risk for getting infections including life threatening blood infections. The problem of sickle cell anaemia prevalent in some tribal areas needs many sided and long term programs. Concerned over the high incidence of this genetically linked disease, the state health department has now set up screening and counselling centres in Surat. As part of the drive, authorities distributed three types of laminated colour coded cards depending on the shape of the haemoglobin cells. An all white card indicates normal haemoglobin, half white-half yellow, sickle cell trait and all yellow, sickle cell disease. To ensure that children with sickle cell trait or disease were not born, unmarried boys and girls, yellow cardholders have been advised against marrying among themselves. Councillors have advised that a half-white half yellow cardholder or an all yellow cardholder should marry only to an all white cardholder. Special emphasis has been given in 10 point program envisaged by the chief minister to tackle the problem of sickle cell anaemia.

Recommendation:

As per above discussion, the following are recommended to improve the overall health scenario of Tapi District

- There is an opportunity to create more health care infrastructure to meet the norms of MOHFW, Government of India.
- A large percentage of population fetch water through hand pumps. Bore wells or piped water connections can be made accessible to those households.
-

- More common toilets can be constructed in urban areas and public places. Awareness regarding use of individual household toilets requires to be created.
- Awareness regarding different schemes for institutional deliveries requires to be created.
- Awareness regarding use of toilets, schemes of institutional deliveries etc. can be created through some traditional means of communication like street plays and modern devices like kiosks, e-chaupals etc. can be used to create awareness.
- Care for elderly and geriatrics require special attention.

5.1.3 LIVELIHOOD

Poverty as quoted by Mahatma Gandhi – is worst form of violence. It is government's primary responsibility to see to it that adequate food, shelter, education and health facility is available to poorest of poor in the country.

Poverty eradication in tribal area requires providing sustained means of livelihood to tribal people. However skills and infrastructure required for creating enabling environment for economic activities in such areas are usually missing. Government needs to address these issues first for long term solution of the poverty. Government has taken several steps to provide lasting avenues for livelihood for rural poor. Some of the major initiatives in this direction are carried out under flagship programs like MGNREGA, Swarnajayanti Gram Swarajgar Yojana (SGSY), and National Urban Livelihood Mission (NULM).

Mahatma Gandhi National Rural Employment Guaranty Scheme (MGNREGA) is one of the flagship anti-poverty programs that provide employment guarantee to people living in rural area. In this program government gives guarantee of 100 days employment in a year, to every rural household whose adult members volunteer to do unskilled manual work. In MGNREGA, one member of each household, willing to carry out unskilled manual work, has right to demand for 100 days work even if a person is already employed/engaged in work. The work created in MGNREGA is used for building infrastructure for villages. In Tapi district under this scheme works like constructing wells, levelling of land, constructing roads, drainage lines, check dam desilting, wall protection, cleaning side solders of mettle roads and building of Bharat Nirman Rajiv Gandhi Seva Kendras are carried out. MGNREGA program in Tapi district has got very good response and large number of people have benefited from it. Government is also taking several steps for improving its implementation mechanism and increase transparency into the system, with the aim to reduce leakages and provide benefits to the targeted group.

Our field visits suggest that SHG movements have brought about good results. They have received good response and generated good awareness amongst rural poor. Women Self-help groups, called Sakhi Mandals, are more active in terms of saving and lending of funds.

In Tapi district, The Forest Rights Act, 2006 is also implemented. Under this act, tribal people and other forest dwellers are given individual property rights of the forest land under their occupation. They are given rights for cultivation and dwelling. They are also given community

rights on forest resources, including right to manage them. They are given even total ownership rights on Non-Timber Forest Produce (NTFPs). Government also distributed land acquired under the Land Ceiling Act of Gujarat.

Poverty amongst many in rural area can be attributed to lack of employment opportunities and lack of access to productive land. Government at all levels national, state and district has taken steps to improve conditions of rural poor. Government of Gujarat has organised Garib Kalyan Mela in 2009 and 2010. In Garib Kalayn Mela government helps rural poor by providing direct aid for purchasing simple tool and implements required for carrying out their day to day economic activities. In this scheme beneficiary is paid their dues directly without involving any intermediary. Level of education and extent of skill formation also plays major role in reduction of poverty. This fact has made government aware about need for investing in skill formation and pushed government to take several initiatives for developing skills amongst tribal at different stage of their life cycle.

Government has started several Jan Shikshan Sansthan (JSS) in Tapi district. JSSs are unique educational institutes that provide non-formal vocational education to adults. JSSs functions with aim of skill formation amongst the poor, the illiterates, the under-privileged. They organize variety of educational and vocational training programmes with special concern for deprived sections, women/girls and unemployed youth. The JSSs implement different skill building programs in collaboration with different stake holders. They provide new skills, refine/ sharpen/ upgrade the existing skills of vulnerable section. This skill building leads targeted section towards employment, self-employment and income generation through equipping them with skills needed for earning livelihood. Such initiatives also facilitates rise in productivity of rural poor leading to increase in real wage of rural poor in long run. The vocational training programs offered under JSSs varies from candle making to computer courses.

Tapi district is part of tribal belt of Gujarat. People living in Tapi district; predominantly rely on primitive activities for their livelihood. They depend on agriculture, animal husbandry, primary services and unskilled labour. Even after several government initiatives aimed at imparting technical skills and inducing entrepreneurship among rural poor, it was observed that majority of rural poor in Tapi district still depend on unskilled labour provided under government

schemes only. Government needs to give special thrust to its awareness and skill formation drive in Tapi district.

Living conditions in villages of Tapi district is not comparable to prosperous villages of neighbouring Surat district. Living conditions in poverty stricken villages of Tapi district are very filthy. In recent times living conditions in villages which are near to Surat- Dhulia Highway, which is recently upgraded as National highway 66, has improved substantially. Conversely, conditions of people living in interior villages of Uchchhal and Nizar has not much changed even after several developmental initiatives. Large majority of people in Tapi district live in old houses made up of mud, bamboos and other such items. These hut type structures are usually very small and weak. They lack even basic amenities like drainage and sanitation. *Jhuggis* of land less labourers are even worse. The surroundings of these houses become filthy during rainy season and a fertile breeding place for mosquitoes, bacteria and other disease causing germs. People living in such dirty environment are vulnerable to disease like malaria, dengue, diarrhoea, jaundice etc. Sickness further results in loss of employment and income to these people.

The government has taken a number of initiatives to provide housing to rural poor through Indira Awas Yojana, Sardar Awas Yojana, and Dr. Ambedkar Awas Yojana. Due to increased awareness about importance of sanitation in health government has also implemented Total Sanitation Campaign (TSC) for providing toilet facilities to every household in the rural area. Improved living and sanitation facilities will help in reduction of diseases and morbidity among poor people. Ownership of house brings great sense of pride among first time owners of homes.

Government uses variety of indirect methods to include different section of society in economic activity and provide them sustained means of livelihood. However some sections of society are not capable of participating in any kind of gainful productive activity. These kind of people needs direct support. Sections of society, particularly, old aged, widow, disabled persons and those who lack any support system are in need of such direct financial assistance. Government has implemented social security schemes like Niradhar Vruddh and Niradhar Apang, Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Niradhar Vidhva Punasthapan (Destitute Widow Rehabilitation) and Sankat Mochan Scheme. The numbers of beneficiaries enrolled under such schemes have increased in recent past. However to ensure appropriate

benefits of such scheme to deserving section of society and its proper implementation, government needs to take steps aimed at creating awareness about the rights and different salient features of these schemes. Involving of NGOs, *Gram Mitra*, Anganwadi worker etc. can help improving the effectiveness of these schemes.

Recommendation:

As per above discussion, the following are recommended to improve the overall Livelihood scenario of Tapi District

1. More than 75 per cent people are still dependent on agriculture as their main source of livelihood. Increase in agricultural production would generate both – farm and non-farm employment.
2. Development of watersheds and drought proofing to develop sustainable agriculture.
3. Benchmarks can be set up to increase the production and yield of agriculture by adopting a taluka-centric approach.
4. Mirco-credit schemes may be introduced for small farmers.
5. More activities can be planned and remaining villages can be covered under ATMA.
6. Urban areas have better livelihood opportunities in terms of income and quality of employment. Special efforts can be undertaken to attract industries to these regions.
7. Mangoes, Banana and Papaya are major horticulture fruits where as Onions, Brinjals and Potatoes are major horticulture vegetables in Tapi. Opportunities can be generated to promote exports of these fruits and vegetables. Mini market yeards, spot exchanges, warehousing and cold storages facilities may be created under Mission Mangalam to take care of sales of these horticulture crops, fruits and vegetables.
8. Poultry is already well-developed in Tapi. Initiatives can be taken to foster poultry farming.
9. There are many quarries in Tapi. This provides huge employment opportunities.
10. Gobar Gas is generated by a co-operative in Bhitbudrak, a model that can be adopted by some other villages.
11. There is an opportunity to revive the dying art of carpet weaving, which is now functional only in Kalamkui and nearby areas. Kaushalya Vardhan Kendras' infrastructure can be used to develop skills for this art.

5.2 Conclusion:

On the basis of all the data and information analyzed, following suggestions may be adopted for human development in the region. The suggestions could either be in the form of works undertaken under existing policies or formation of new policies:

- Skill development programmes can be introduced.
- There are large proportion of ST population in the district. These people are aborigines of Tapi and thus, understand the rural economy better. If given proper direction and guidance, it may help for sustainable development.
- There are ample avenues for developing tourism.
- To build the capacity of local institutions with Government functionaries, for enhanced service delivery.
- To develop policy framework that links the resources of the region with development; and development of the region with local people.

