DISTRICT HUMAN DEVELOPMENT REPORT

PATAN

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

DISTRICT HUMAN DEVELOPMENT REPORT: PATAN

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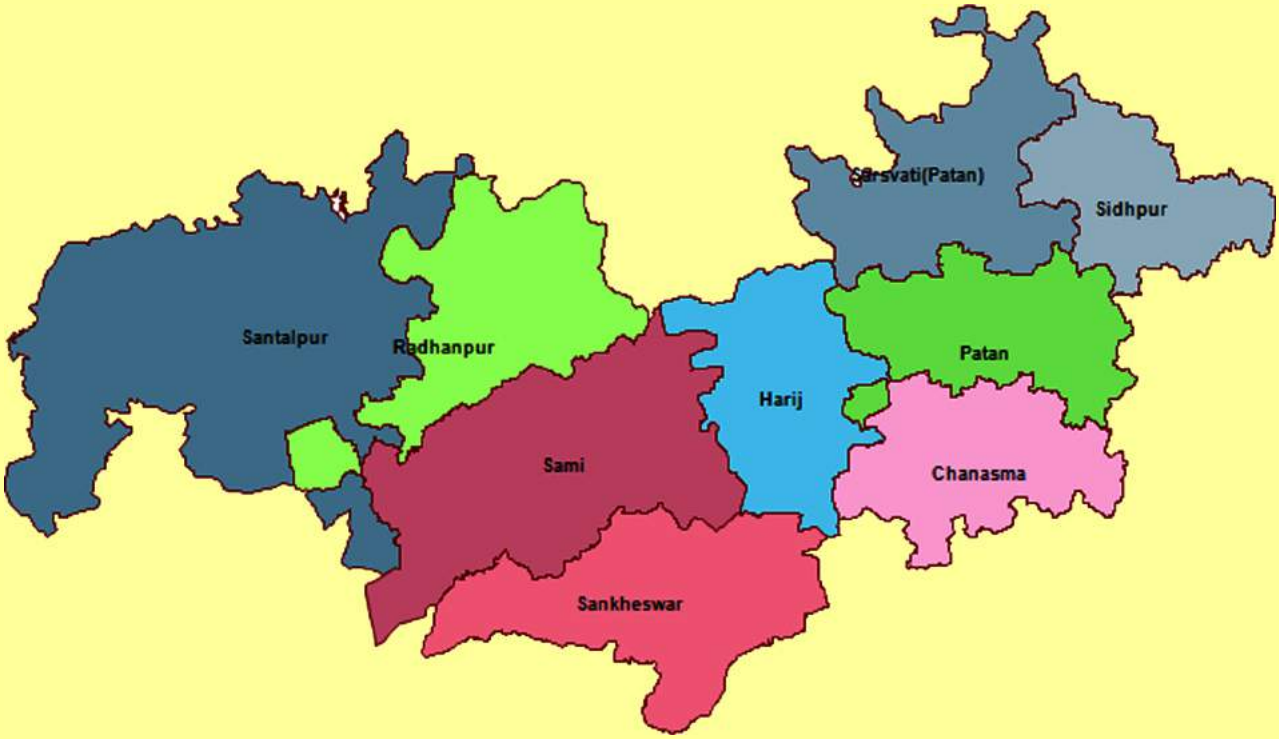

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Gujarat enjoys the reputation of being the most progressive and well-administered State in the country. The State Government is aware that although progress has been achieved in various sectors since the State's inception much remains to be done in 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 Nirma University, Ahmedabad for collaborating with the State Government in preparation of the District Human Development Report, which provides an objective, in-depth analysis of the present status of various aspects of human welfare in the district. I also compliment 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 endeavour.

K.S.Chauhan
KESHAJI CHAUHAN

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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) and
Chairperson, GSIDS

K.K.Nirala
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सत्यमेव जयते

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PREFACE

Human development is the process of enlarging people's freedoms and opportunities and improving their well-being. It is about the real freedom of ordinary people to decide what to do, and how to live. In short, Human Development is about putting people at the center. By investing in people, we enable growth and empower people to pursue many different life paths, thus developing human capabilities i.e. to lead happy and healthy lives. Without these, many choices are simply not available, and many opportunities in life remain inaccessible.

This report encompasses all the facets of the Human development & their progress. The District has achieved a remarkable progress in literacy rate as well as female literacy rate that shows the state is moving towards equality. In education, the performance analyzed at primary, secondary and higher levels in terms of access, enrolment, retention, teacher-student ratio, quality, equity, educational attainments and infrastructure, the achievement of Patan district is quite impressive.

In health, the indicators are gradually improving. In livelihood, the female work participation is higher in the district than the state. The district has majority of workforce engaged with agricultural activities. Charanka Village of Patan district making Gujarat, shine like a Sun in the map of the world. The solar park is expected to save around 8 million tonnes of carbon dioxide from being released into the atmosphere and save around 900,000 tonnes of natural gas per year.

I hope this report will act as guiding tools for Planning and policy makers for uplifting the human development status of the district.

K.K. Nirala
(Collector – Patan)

सत्यमेव जयते

Rajesh Rajyaguru
I.A.S

District Development Officer, Patan

Date : 07.09.2016

FOREWORD

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

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

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

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

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

Rajesh Rajyaguru (I.A.S.)
(District Development Officer, Patan)

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Acknowledgement

Human Development as a distinct concept developed in the 80s. The basic feature of our understanding of the concept is not, however, confined to abstract ideas. Just as poverty is multidimensional, so are the processes of human self realization and social progress. It is therefore, imperative that economic policies are so structured as to attain the twin objectives of human self realization and social progress based on the contemporary realities as well as the aspirations of the future generations. Human development is about people, about expanding their choices and enhancing their capabilities. It seeks to unfold opportunities for the people, particularly those living at the bottom, to live decent, healthy and fulfilling life.

The policies and programmes of the State Government over the last three decades have been directed towards creating conditions for the people where full flowering of human capabilities becomes a reality. Efforts of the State Governments have been reinforced by spontaneous and overwhelming support of the people. Economic Development of a state and higher Gross State Domestic Product does not necessarily reflect the actual well being of its people. Therefore, Human Development indices are advocated to measure the improvement and status of well-being of the people. The concept of human development focuses on the actual well being of the people in terms of indicator like education, health, life expectancy, income and gender equity.

Our initiatives to prepare District Human Development Report of Patan is an attempt to make an in-depth study and analysis of the quality of life of the people as well as to identify the areas where we need to intervene for enhancing their capabilities and to effectively address the grey areas. The report summarizes the overall development of the district. It is hoped that the DHDR will serve as an important tool in planning for growth, social justice and equity in the districts. This report is also expected to help in reassessing the investment strategy in the future. It is the product of wider interactions and participation at various levels as well as evident from its approach and content.

The Preparation of the Report was a huge responsibility and challenging task. Human Development being multi- dimensional, the report adopted broad based methodology and a set of taluka-level human development indicators for inter-taluka disparities in human development, gender inequality, child development, food security, urban development and composite taluka development. The Report also discusses meticulously various human development dimensions such as education, health, sanitation, livelihood standards, empowerment of women, status of marginalized sections, urban development issues and governance from human development perspective. The Report has six chapters focusing on in-depth empirical analysis of all these human development related concerns. The concluding chapter, The Way Forward, charts out thrust areas for intervention policies and strategies for enhancing comprehensive, inclusive, equitable and sustainable human development in the district.

The district human development profile is written with the support of the government officials. Human development is a State subject and it is important that the State Government is involved in the preparation of the Human Development Reports. True to the spirit Kum S Aparna, Principal Secretary – Planning, Shri Kalpesh Shah, Joint Secretary (Planning), District Collector, Shri K K Nirala, Patan and former District Collector Shri Rajesh Manjhu, Patan were very forthcoming with their concerns, comments and helpful suggestions.

The Director & Member Secretary, Shri K D Vashi, GSIDS and Shri S S Leuva, Deputy Director, GSIDS took a keen interest and provided data on the economic and social dimensions. We take this opportunity to thank a large number of people and organizations who have participated in finalizing this report. We express our gratitude to District Planning Officer Shri M.M. Kapadya for providing all the statistical support for the project.

We also thank Ms Khushboo Patel SPAC, GSIDS, Ms Namrata Kansara SPAC, Patan and Mr Krunal Rajput SPA, Patan for over-viewing the entire process and supporting in the preparation of the report.

The entire process of preparation involved close consultation with a large number of experts, line departments of Patan such as Education, Health and Family Welfare, Agriculture, Horticulture, Animal Husbandry, Women and Child Development, Social Welfare, Urban Local Bodies, District Industrial Center and others provided required data and participated actively in the deliberations of Core Committee. We would like to express my sincere thanks to all of them for their assistance and contribution.

Finally, we thank all those directly or indirectly involved in giving the Report its final shape. We sincerely hope that the Report would be of great policy relevance and provide basis for preparing district planning process from human development perspective and resource allocation by the State Government.

Prof. SA Bhatt

Dr. Manoj Kumar Lodha

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Conceptual Note

Background

In the past, development was measured in terms of country's economic growth or increase in per capita income. But the problem of this approach was that it overlooked certain facts which are relevant such as people's quality of life and their choices of the way of life. In this approach, the people are considered only as a channel through which the productive progress is brought about rather than considering them as the ultimate aspect for which the production and prosperity is meant for. But the economic growth need not always necessarily lead to human progress. A country with high per capita income may have a population suffering from malnutrition, illiteracy, social exclusion, high mortality rates etc. People having no access to income, or enjoying only limited access will feel their choices being fairly constrained. Can an economic growth devoid of job opportunities and without people's participation and equity be called development? Here is the relevance of human development concept. Human development approach focuses on the expansion of people's capabilities and freedom. In this approach, rise of income is treated only as a path to development.

Development must not only be enhancing income but should also be expanding the range of things that a person can choose. The concept of human development was a 'paradigm shift' in development discourse as it drew attention to the more direct and important aspects of human life than growth in income. As stated in the HDR, 1990, Human Development is something more than GNP growth and even more than producing commodities and accumulating capital, which facilitates the expansion of people's choices. (UNDP, 1990) Mahbub al Haq said, "The objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives"(UNDP, 2009).

Shift from Gross Domestic Product to Human Development

Gross Domestic Product (GDP), which is the standard measure of a nation's economy, had been a dominant measure of a country's level of development for a long time. The economic paradigm, though important, does not capture adequately the multi-dimensionality of development like income inequality, unemployment and disparities in access to public goods and services like health and education. To judge the overall well-being of a country or State, mere estimation of the economic growth or the production of goods and services is not enough. National income figures, though useful, do not reveal the composition of income or the real beneficiaries of economic growth. Other aspects affecting human development such as long and healthy life, literacy and the standard of living of people also must be quantified and included for estimating various dimensions of human development. The human development concept was evolved by a group of Economists and thinkers led by Mahbub ul Haq and Amartya Sen during the eighties.

Mahbub ul Haq said: "The basic purpose of development is to enlarge people's choices. In principle, these choices can be infinite and can change over time. People often value achievements that do not show up at all, or not immediately, in income or growth figures: greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities. The objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives." (UNDP, 2009).

The human development paradigm according to Mahub ul Haq essentially entails the following features

- Development must put people at the center of its concern.

- The purpose of development is to enlarge all human choices, not just income.
- It is concerned both with building up human capabilities and using the capabilities fully.
- Human development has four essential pillars – equality, sustainability, productivity and empowerment.
- It defines the ends of development and analyses sensible options for achieving them. (UNDP, 2009)

Thus the basic difference between the Gross Domestic Income approach and Human Development approach is that the former focuses exclusively on the expansion of only one choice that is income, where as the latter gives more importance to the expansion of all human choices whether they are economic, social, cultural or political.

Definition of Human Development

The term 'Human Development' connotes an expansion of human capabilities, a widening of choices, an enhancement of freedom and a fulfillment of human rights (UNDP, 1990). The choices are:

- A healthy and long lasting existence,
- Access to knowledge in its different expressions,
- Material resources for a decent standard of living,
- Free participation in community life and collective affairs.

According to UNDP "Human development is about putting people at the centre of development. It is about making people realize their potential by increasing their choices and allowing them to enjoy the freedom to lead their lives as they wish." According to Amaritya Sen, "Human Development is an expansion of human capabilities and human freedoms" (College of Agricultural Banking, 2008).

Human Development approach is a holistic approach which places human beings at the core of development and emphasizes that people's development is not just a channel for the nation's development but is the most important aim of a country's development itself. The main concern of human development is the participation, especially of the vulnerable sections in the process of change and equity in development gains. As stated in the HDR, 1990, Human Development is about more than GNP growth, more than producing commodities and accumulating capital, which is only a means of enlarging people's choices (UNDP, 1990). Human Development is about people, about expanding their choices to live full, creative lives with freedom and dignity.

Economic growth, increase in trade and investment, technological growth – are all very important. The fundamental thing to expand human choices is building human capabilities. The basic objectives of human development are providing a long and healthy life, good education, a decent standard of living and the opportunity to enjoy political and civil freedom to participate in the social life. By putting the people at the centre of development, through emphasizing that development is of the people, for the people and should be carried out by the people, the HDRs have offered ground-breaking analysis on a wide range of issues (UNDP, 2003).

This analysis does not suggest that economic growth is unnecessary for human development. No sustained improvement in human well being is possible without economic growth. But it is also wrong to suggest that the high economic growth rates will automatically translate into high level of human development (UNDP, 2009). Gustav Ranis and Frances Stewart by using a growth vs. HD grid have classified countries into four categories (College of Agricultural Banking, 2008).

- HD Lopsided – Countries that have more than average attainment in HD but low level of economic growth.
- Vicious – countries that have low economic growth and low HD.
- EG Lopsided – Countries that have a high growth rate but a low capacity to convert growth into improvements in human conditions.
- Virtuous – Countries that have a high growth rate leading to high HD and HD favorably impacting growth.

HD Lopsided Low Income High HD Unsustainable	**Virtuous** Growth and High HD impact each other beneficially
Vicious Low HD Low income and each pulling other down	**EG Lopsided** Low conversion of GNP growth into HD

India during the three periods of 1960-70, 1970-80 and 1980-92 have been categorized as Vicious, Vicious and EG lopsided respectively. Madhusudan Ghosh has constructed a similar table for Indian states and Kerala has been categorized in it as HD lopsided – high HD with low economic growth – during all the three periods of 1981, 1991 and 2001 (Ghosh M, 2005).

Indices

Four new composite indices for human development have been developed — the Human Development Index, the Human Poverty Index, the Gender-related Development Index, and the Gender Empowerment Measure.

Human Development Index (HDI)

The Human Development Index (HDI) envisaged by UNDP looks beyond GDP to a broader definition of well-being. The HDI serves as a frame of reference for both social and economic development. The three dimensions of HDI calculated by UN:

- Health attainment, a long and healthy life (measured by life expectancy at birth),
- Educational attainment (measured by the adult literacy [with two-thirds weighting] and the combined primary, secondary and tertiary gross enrollment ratio [with one-third weighting]), and
- Economic attainment (measured by GDP per capita in US dollars at Purchasing Power Parity).

Human Poverty Index (HPI)

The HDR, 1997 introduced a Human Poverty Index (HPI) as an attempt to bring together in a composite index the different features of deprivation in the quality of life to arrive at an aggregate judgment on the extent of poverty (UNDP, 1997). HPI uses three indicators of deprivation:

- The first deprivation relates to survival: the likeness of death at a relatively early age and is represented by the probability of not surviving to ages 40 and 50
- The second relates to knowledge: being excluded from the world of reading and communication and is measured by the percentage of adults who are illiterate
- The third relates to a decent standard of living, in particular, over economic provision.

Gender Development and Empowerment

The shift towards human development approach streamlined further by incorporating the concepts of gender development and gender empowerment. The two most commonly used

gender related indices are the Gender Development Index (GDI) and the Gender Empowerment Index (GEM).

(a) Gender related Development Index (GDI)

This index is an indication of the standard of living in a country by gender. It aims to show the inequalities between men and women in the area of long and healthy life, knowledge and a decent standard of living.

(b) Gender Empowerment Measure (GEM)

This is a measure of inequalities in opportunity between men and women. It combines inequalities in three areas: (i) political participation and decision making, (ii) economic participation and decision making, and (iii) power over economic resources.

District Human Development Report (DHDR) - Relevance and Scope

While the national and state level HDRs provides inputs for central and state level plans, the District Human Development Reports (DHDRs) provide an opportunity for ensuring that human development is mainstreamed in district plans. Preparation of DHDR would help to gain a deeper understanding of the issues at the district level and also intra-district disparities. The purpose of preparation of a DHDR is to ensure that district plans are designed and implemented through a human development prism. It does so by analyzing the status of human development attainment and key human development challenges faced with a special focus on efficiency of delivery systems and financial allocations.

The scope of the preparation of DHDR mainly lies in the decentralized planning process of local governments. The objective of DHDR as envisaged in the Guideline of UNDP is that the preparation of DHDR helps in preparing, designing and implementing district plans from a human development perspective. Special themes which are addressed during the preparation and implementation of district plans form the base of DHDR. Sub-district level analysis gives better insight to the issues to be addressed at grass root level through decentralized planning.

There are even more important reasons why DHDRs ought to have a place in the overall strategy to improve human development in the state. It can be argued that the problems of various services that are directly related to different dimensions of human development, such as health care and education, can be better diagnosed at the district level than at the state level. Programmes such as the District Primary Education Programme (DPEP) have explicit focus on districts as the relevant unit for implementation of the programme. Districts are also the basic implementation units of the state's health care programmes.

A District Human Development Report is therefore expected to

- Chart the progress the district has so far made on the human development front, in terms of various indicators;
- Reckon intra-district disparities of different kinds – between rural and urban areas, across development blocks, among social and community groups, between men and women;
- Analyse the evolution and current state of human development by linking them to the social, economic and demographic processes that characterize the district;
- Identify the possible strategies for human development in the district.

The report would focus on such basic dimensions of human development as education, health, and access to basic resources (as indicated by income and assets). However, in each of these areas district-specific factors will have to be identified and analysed. In the present report emphasis was laid on block-wise comparison of the attainment of welfare indicators expressed in terms of human development index in the district. Apart from quantitative analysis, in terms of income health and education indices, an attempt has also been made to analyze qualitatively the evolution of decentralized planning and its effectiveness in each block; with special reference to the extent of people's participation, enabling environment and institutional set up.

Executive Summary

Patan district is situated in the northern part of Gujarat state. The district is carved from Banaskantha and Mahesana district. The district occupies 5792 sq. km. area between 23°55′ and 24°41′ north latitudes and 71°31′ and 72°20′ east longitudes. It's headquarter is the city of Patan, Gujarat. It is bounded by Banaskantha in north, Little Rann of Kachcch in west, Mahesana district in the east and by Surendranagar and Ahmedabad districts in the south.

The district has semi arid climate. Extreme temperatures, erratic rainfall and high evaporation are the characteristic features of the climate. There is little forest in the district, covering an area of 465.26 sq. km. There is only minor forest product like gum and firewood. There is no plantation and no industrial use of the forest products.

Patan district comprises of nine talukas viz. Patan, Saraswati, Chanasma, Harij, Sami, Shankeshwar, Sidhpur, Radhanpur and Santalpur. The headquarter of district is Patan taluka. The district collector is the overall administrative head. There are various district level officers of the state government to perform, execute the various regulatory and development functions assigned to them.

In 2011, Patan had population of 13,43,734 of which male and female were 6,94,397 and 6,49,337 respectively. In 2001, Patan had a population of 11,82,709 of which males were 6,12,100 and remaining 5,70,609 were females. There was change of 13.61 percent in the population compared to population as per 2001. Density of Patan district for 2011 is 232 people per sq. km. Patan district administer 5792 sq. km. of area. With regards to sex ratio in district, it stood at 935 per 1000 males compared to 932 in 2001. In 2011, child sex ratio is 890 girls per 1000 boys compared to 865 girls per 1000 boys in 2001. Out of the total Patan population for 2011, 20.92 percent lives in urban regions of district, in total 2,81,081 people lives in urban areas of which males are 1,46,073 and females are 1,35,008.

Literacy and Education

Education is a basic ingredient for human capability building and functional empowerment. It is in fact important input indicator influencing other human development dimensions such as health, standard of living, income, choices and freedom. The literacy status of Patan district is not so good. It ranks 20th in both the census year 2001 and 2011 although district has achieved a remarkable progress in literacy rate. District reported 60.4 percent overall literacy rate in 2001 whereas it increases to 72.3 percent in 2011, although the female literacy rate also increases to 61.1 percent in the year 2011 from 46.3 percent in 2001 census year.

The gender-wise, the male population has literacy rate of 82.9 percent and female 61.0 percent. The gender disparity in literacy rate works out to 21.9 percent. There is also wide inter – taluka variation in the literacy rates. Santalpur taluka has the lowest literacy rate with 58.3 percent followed by Radhanpur with 64.2 percent. Chanasma taluka has the highest literacy rate of 81.5 percent. In rural areas, 69.3 percent of people are literate and in urban areas 83.2 percent are literates. The rural/urban disparity in literacy rate in the district works out to 13.8 percent.

In education, the performance is analyzed at primary, secondary and higher levels in terms of access, enrolment, retention, teacher-student ratio, quality, equity, educational attainments and infrastructure. The achievement of the district in most of these indicators, as shown in this

study, is quite impressive. It is almost on the way to universal in primary and secondary education. Even in the education attainment in terms of pass percentage in various examinations, the district has 71.1 percent. In the area of physical amenities out of total 962 schools, all has electricity facility, 457 schools have computer lab, 943 schools have compound wall and 713 schools have playground. The programmes such as Vidyalaxmi bond scheme, Vidyadeep insurance scheme, Model school scheme, ICT @ schools scheme, distribution of cost free text books, etc. have contributed significantly to this achievement.

Health and Nutrition

Health is another important ingredient of human development. It determines both the longevity and the quality of life. Health also impacts learning outcomes, functioning capability and earning capacity of the people. Public sector health care infrastructure through PHCs, CHCs and taluka and district level hospitals renders health care services mainly to the weaker section of the community throughout the district. In rural areas, the government through PHCs/CHCs is the main provider of health care services. 210 sub centers, 38 public health centers and 15 community centers are running in the Patan district. These are the important health services providing medical facilities in the rural areas. Although many private practitioners have also started operating in rural areas, yet their number is relatively small and they are located mainly in the main business centers.

Malaria is a potentially life threatening parasitic disease in India. The public health department has been spraying DDT to contain the incidence of malaria. The cases of acute diarrhoeal diseae and respiratory infection are increasing. On the other hand cases of measles, malaria falciparum, malaria vivax and bacillary dysentery decreasing. Early antenatal registrations play an important role in improving the health of the expectant mothers and child. This helps the state to tract the health status of the expectant mothers with regards to timely immunization, nutrient supplements, handling emergencies, pregnancy related complications etc. Further an important measure of safe motherhood. The percentage of ANC registration was 91.5 percent in 2014-15. One of the important thrusts of the Reproductive and Child Health Programme is to encourage deliveries under proper hygienic conditions under the supervision of trained health professionals. During the year 2009-10, total 93.6 percent deliveries registered in institutes whereas it increased to 99.2 percent in the year 2014-15.

The immunization of children against six serious but preventable diseases namely, tuberculosis, diphtheria, pertusis, tetanus, poliomyelitis and measles is the main component of the child survival programme. As part of the National Health Policy, the National Immunization Programme is being implemented on a priority basis. The percentage of fully immunized increased to 90.1 percent in the year 2013-14 from 88.7 percent in the year 2012-13 in the Patan district.

ICDS is an important state sponsored programme meant for strengthening nutrition among 0-6 year age group children and pregnant women/lactating mothers. It is a major effort to not only strengthen childhood it is also an important anti-poverty programme. In Patan district 8 post was sanctioned for CDPO, 6 posts for ACDPO, 53 for supervisor, 1427 posts for AW-Worker and 1393 posts for AW-Helper. Against this 8 CDPO was appointed, 2 ACDPO, 36 supervisors, 1390 anganwadi workers and 1307 anganwadi helpers was appointed. There is thus, a growing rural – urban divide in the access and provision of quality healthcare services which creates

stumbling blocks towards achieving the dream of "health for all" and universal comprehensive quality health coverage.

Agriculture, Animal Husbandry and Livelihood

Patan describes as arid and semi-arid region with temperature and limited growth period of less than 100 days. The rainy season being short (July - August), the biggest problem in both agriculture and daily life is water. The soil in Patan District in general pH is Neutral. Some parts of the Santalpur and Sami Talukas adjoining to Kachchh district have saline soil. Electricity conductivity is medium. Organic carbon is low. Nitrogen and phosphorus content of the soil is low & medium respectively. Potash is high. So, overall, the soil fertility indices are satisfactory from the point of view of agriculture.

Agriculture is highly diversified in the district. Pearl millet is the most dominant crop followed by cotton, rapeseed, mustard, wheat, castor, guar, mungbean, maize, sesamum and cumin. Isabgul is the main source of natural fibre. The productivity of castor, potato, guar, cotton and wheat have envisaged significant enhancement. Animal husbandry is a supplementary activity with agriculture as well as it is adopted as sole activity by many castes and communities in Patan district. According to 19th livestock census during the year 2012, the total livestock is 625724. Out of this cow, buffaloes, sheep and goat are 20.82 percent, 59.52 percent, 6.03 percent and 12.84 percent respectively.

As regards employment, the major area of concern is the significant decline in the work participation rate (WPR) among women and increase in women non-workers. Men dominate in the workforce and the gap between men and women in WPR is very wide. Though poverty incidence in the district is considered, 219511 were APL card holders and 87149 were BPL card holders.

Patan district has made significant progress in basic livelihood amenities such as housing, safe drinking water, electrification and sanitation. The percentage of households with good condition houses in the district is 61.9 percent. The quality of housing in terms of materials used for roofing and walls and quality is better. Similarly, 83 percent houses in the district are electrified. In regard to safe drinking water, it is available from treated source to 23.9 percent households and from untreated source to 62.7 percent. The total 3.4 percent households depend on wells and 7.9 percent households are getting drinking water from handpumps and tubewells. In the area of sanitation, the district has made a remarkable progress in both rural and urban areas. The majority of households including weaker sections have flush toilets in their own premises

Industry and Tourism

The Oil & Gas Commission of India had successfully explored many mineral, oil and natural gas in Patan district. Major minerals are white clay, boll clay, red okhar and china clay and the minor minerals which found in Patan district are sand, brick sand and ordinary sand. Regional and sectoral analysis of large scale industrial employment indicates a clear concentration of employment in key sectors. Santalpur and Siddhpur talukas account for a majority share of employment in this category. Infrastructure and agro processing are major employment generating segments within the district.

Charanka Village of Patan district making Gujarat, shine like a Sun in the map of the world. 2000 hectare 'barren and useless' land of Charanka village was used to develop Solar Park. The park is already generating 214 MW solar power out of its total power generation capacity of 600 MW. The solar park is expected to save around 8 million tonnes of carbon dioxide from being released into the atmosphere and save around 900,000 tonns of natural gas per year. Gujarat has been a leader in solar power generation and contributes 2/3rd of the 900 MW power generated in the country.

The road infrastructure of Patan comprises of National Highway 14, 15 and State Highway 7, 8 and 10 which connect the district with the major cities of Gujarat and India. The rail network is part of the western railways connecting Patan with major cities in India such as Delhi and Mumbai via Ahmadabad. The nearest airport to Patan is located at Ahmadabad.

The tourism sector of the district is one of sectors which have attracted major investment. There are many places of tourism delight like Queen's Stepwell or Rani ki Vav, Sahastralinga Talav, Panchasara Parasvanath Jain Temple. The district is famous for the patola saree. The temples of the Jains in Patan are said to number over a hundred, among which the one dedicated to Panchasara Parasvanath is the largest. It has a famous white marble image of Vanaraja and in the vicinity of the temple is the Hemchandracharya Jain Gyan Mandir that contains valuable Jain manuscripts, some of which were written in ink made of gold. A number of civic as well as religious buildings were constructed in the city, including many Hindu, Muslim and Jain religious places. However, the Jain temples outnumber the others. They are about 122 in number and more than 100 years old. Besides, there are 9 Hindu temples and 12 Mosques in the city. These monuments are a major attraction from travel and tourism point of view. The foreign tourists throng the city, to view the amazing monuments adorned with intricate carvings and sculptures.

Abbreviations

AAY	:	Antodaya Cards
AIDS	:	Acquired Immune Deficiency Syndrome
ANC	:	Antenatal Check-up
ANM	:	Auxiliary Nursing and Mid-Wifery
APL	:	Above Poverty Line
BCG	:	Bacille Calmette Guerin
BPL	:	Below Poverty Line
BSY	:	Balika Samriddhi Yojana
CHC	:	Community Health Centre
CIC	:	Community Information Centre
DC	:	Deputy Commissioner
DPT	:	Diphtheria, Pertussis and Tetanus (Vaccine)
DHDR	:	District human Development Report
EAI	:	Economic Achievement Index
EDI	:	Education Development Index
ELI	:	Effective Literacy Index
EPI	:	Expanded Programme on Immunization
GAD	:	Gender and Development
GDI	:	Gender Development Index
GDM	:	Gender Development Measure
GDP	:	Gross Domestic Product
GEI	:	Gender Equity Index
GER	:	Gross Enrolment Ratio
GPI	:	Gender Parity Index
GSDP	:	Gross State Domestic Product
HDI	:	Health Development Index
HDM	:	Human Development Measure
HDR	:	Human Development Report
HHs	:	Households
HPI	:	Human Poverty Index
HRVD	:	Health Rate on Various Disease
HS	:	Higher Secondary
ICDS	:	Integrated Child Development Scheme
ICT	:	Information and Communication Technology
JSY	:	Janani Suraksha Yojana
IMR	:	Infant Mortality Rate
KM	:	Kilometre
MGNREGA	:	Mahatama Gandhi National Rural Employment Guarantee Act
MMR	:	Maternal Mortality Rate
MSME	:	Micro, Small & Medium Enterprises

MoU	:	Memorandum of Understanding
MRVD	:	Morbidity Rate based on Various Disease
NER	:	Net Enrolment Ratio
NFHS	:	National Family & Health Survey
NGO	:	Non Governmental Organization
NLEP	:	National Leprosy Eradication Programme
NREGS	:	National Rural Employment Guarantee Scheme
NRHM	:	National Rural Health mission
OBC	:	Other Backward Classes
OES	:	Overall Education Score
OHS	:	Overall Health Score
OLS	:	Overall Livelihood Score
OP	:	Only Primary
OPS	:	Overall Positional Score
OPV	:	Oral Polio Vaccine
OUP	:	Only Upper Primary
PD	:	Public Distribution
PHC	:	Primary Health Centre
PTR	:	Pupil Teacher Ratio
R&D	:	Research and Development
SC	:	Sub-Centre
SC	:	Scheduled Caste
SEI	:	School Enrolment Index
SE Ratio	:	School Enrolment Ratio
SHC	:	Sub-Health Centre
SHDR	:	State Human Development Report
SHG	:	Self Help Group
SSA	:	Sarva Shiksha Abhiyan
SSI	:	Small Scale Industries
ST	:	Scheduled Tribe
STR	:	Student Teacher Ratio
SWOC	:	Strength, Weakness, Opportunity, Challenges
TB	:	Tuberculosis
TFR	:	Total Fertility Rate
TSC	:	Total Sanitation Campaign
UIP	:	Universal Immunization Programme
UNDP	:	United Nations Development Programme
UNICEF	:	United Nations Children Fund
UNO	:	United Nations Organization
UP	:	Upper Primary
WHO	:	World Health Organization
WPR	:	Work Participation Rate

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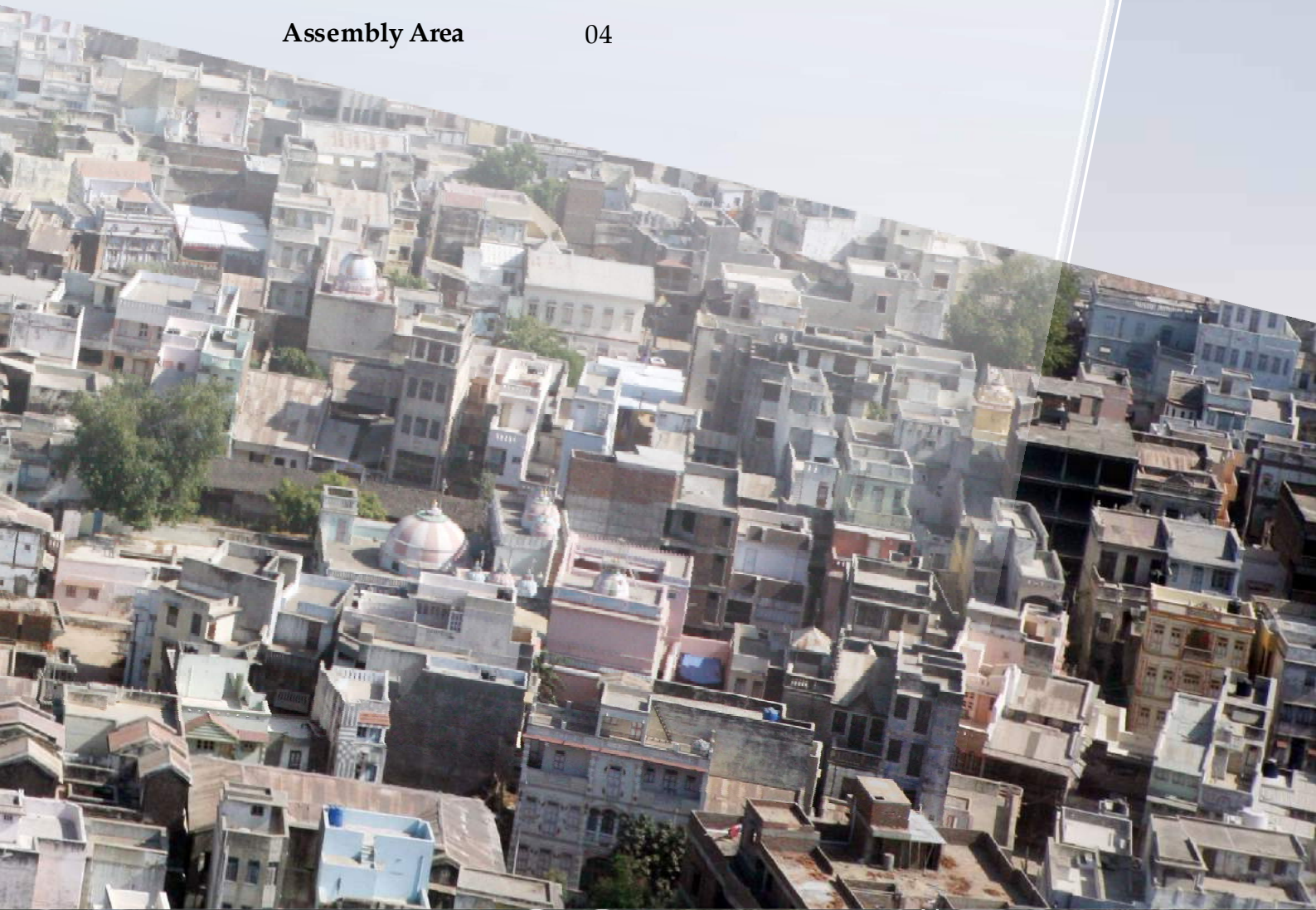
CHAPTER - I

Introduction

Location	**71.31° to 72.20° East (Longitude)**
	23.55° to 24.41° North (Latitude)
Area (Sq. Kms.)	5740 Sq.Km.
Sub Division	04
Towns	05
No. of Talukas	09
Patwar Circle	09
Municipality	5
Panchayat Samities	09
Gram Panchayats	466
Revenue Villages	517
Assembly Area	04



Chapter 1

Introduction

Patan district is situated in the northern part of Gujarat state. The district is carved from Banaskantha and Mahesana district. The district occupies 5740 sq. km. area between 23°55′ and 24°41′ north latitudes and 71°31′ and 72°20′ east longitudes. It's headquarter is the city of Patan, Gujarat. Patan is an ancient fortified town, situated on the banks of the sacred Saraswati River. This town was founded by the Vanraj Chavda in 746 AD and enjoyed a privileged status of the capital of Gujarat, for about 600 years from 746 AD to 1411 AD, after the center of power moved from Saurashtra around the same time and before being sacked by Mahmud of Ghazni in 1024. It was administratively important since earliest time as it was the capital of the Gujarat and had attained prosperity under Chavda and Solanki period.

It was ruled by a series of dynasties: the Chavda, Solanki, and finally Vaghela. Many kings like Bhimdev, Kumarpal and Siddharaj ruled the state. The glory of Patan reached its highest point during the Solanki period. Under the Solanki rule 942-1244, Anahilvada shown as a center of trade, learning, and architectural achievements. The rulers were great patrons of fine arts and architecture and thus constructed various religious and historical places in the Patan. It was also a thriving center for Jainism, and the Solanki rulers commissioned a large number of Hindu and Jain temples, as well as other civic and religious constructions.

During the Vaghela rule towards the end of the 13th century, Ulugh Khan,commander under Alauddin Khilji, plundered the town and destroyed it completely. In 1411 the capital shifted to the newly founded Ahemdabad, leaving Patan as a shadow of its former glory.The urban structure of the town is made of several places known as 'Pols'. These towns contain old beautiful houses with carved wooden facades in traditional Gujarati architectural style.

Patan is also described in the Jain text "Kumarpala Rasa" as a prosperous fortified town, about 18 miles in circumference with 84 town squares, bazaars, mints of gold and silver, well laid out gardens with fountains and trees, grammar school of Sanskrit and Prakrit, Hindu and Jain temples.

After last Vaghela ruler, Karan Ghelo lost to Ulugh Khan in 1289 AD, the Muslims raided the town, destroyed various temples and ruined the entire city.This city was also taken over by Alau-ud-din Khalji's brother Alaf Khan in 1306. Today, one can barely find the traces of such a magnificent town. Since the rule of King Kumarpal, Patan was the only center of unique weaving craft of 'Patola'. Even today some of the families in Patan are involved in weaving of this traditional craft.

Two historical monuments of Patan, having important place in Gujarat's history, Sahashtraling Sarovar (lake) and Rani ki Vaav built in the memory of queen Udaymati, wife of king Bheemdev. Sidhpur city, one of the taluka of Patan, is famous for Rudramahal and Matra

Shradh. The Jain temple of Parshvanath dada at Shankheshvar village of Sami taluka have prominent importance.

During the Solanki period, under the reign of Karandev and Siddharaj, Patan attained its greatest splendour and highest prosperity. The prosperous rule of the Solanki dynasty cause to an end in the period of Bhim Dev II which was succeeded by the Vaghelas. TheVaghelas were over powered in 1289 by Ulughkhan. In 1304 Muslims captured power in Gujarat and Patan became the seat of the provincial Governor.

During the Sultanate period the administrative and political importance of Patan was reduced as Sultan Ahmad Shah founded the city of Amdavad. The Sultanate period came to an end in 1572. From 1572 to 1723 the district was ruled by the Viceroys appointed by Mughal Emperors. In Gujarat, the Mughal Empire was in the doldrums in the early part of the 18th Century and the Gaekwad who was one of chiefs constantly invading the plains of Gujarat got a foot hold. The former Radhanpur state is known as a Radhanpur taluka at present, was the seat of the Babi ruler who was first class chief entitled to a guard of honor and a salute of 11 guns. After the independence all native states were merged in the Union of India and became part of Bombay state. In November, 1956 the bigger bilingual state of Bombay was formed Banaskantha district being part of it.

The Bombay state was bifurcated on 1st May, 1960 and separate state of Gujarat and Maharashtra were formed. Since that date the Mahesana district and the Banaskantha district became a part of the Gujarat State.Patan District was formed on 2nd October 1997 from the parts of Mahesana and Banaskantha districts. Patan District was formed including Patan, Sidhpur, Chanasma, Harij and Sami Talukas of Mahesana district and Radhanpur and Santalpur talukas of Banaskantha District. The head quarter of the district is Patan.

1.1 Administrative Set Up

The District Collector looks after the general administration, maintenance of collection of land revenue and settlement of law related disputes, civil supplies, district planning, mid-day meal scheme etc. at the district level. At the Taluka level, Mamlatdar looks after the land development and revenue collection and law and order.The Panchayati Raj institutions are fairly strong and most of the development works have been transferred to the District Panchayats and its subordinate bodies. The District Panchayat has an elected President and District Development Officer appointed by the Government, works as its Secretary, who looks after day-to-day work related to the development.Similarly, at the taluka level, taluka panchayats have been constituted which have an elected President. The Taluka Development Officer placed by the Government as Secretary of the Taluka Panchayats and he conducts the regular administrative work. Like-wise, an elected President heads the Municipality and the Chief Officer works as the Secretary of the Municipality, who looks after the day-to-day work.

At the Village level, the Sarpanch is the elected Chief and the Talati (Village Mantri) works as the Secretary to the Village Panchayat and looks after the day-to-day work. The administrative set up is shown in the table 1.1:

Table 1.1: Units of Administration in Patan District (2014)

Sr.	Heads	Nos.
1	Location	71.31° to 72.20° East (Longitude) 23.55° to 24.41° North (Latitude)
2	Area (Sq. Kms.)	5740 Sq.Km.
3	Sub Division	04
4	Towns	05
5	No. of Talukas	09
6	Patwar Circle	09
7	Municipality	5
8	Panchayat Samities	09
9	Gram Panchayats	466
10	Revenue Villages	517
11	Assembly Area	04

Source: Census of Gujarat, Government of India, 2011

The functions of administration of law and order and control and investigation of crime are done by the Superintendent of Police of the district with the help of police stations working under him. For the purpose of maintaining law and order, in the year 2014-15 there were 15 police stations and 14 outposts as per table 1.2:

Table 1.2: Taluka Wise Police Station and Out Post in Patan District (2013-14)

Sr	Taluka	Police Station	Out Post
1	Chanasma	1	2
2	Hariz	1	1
3	Patan	5	3
4	Saraswati	1	2
5	Radhanpur	1	1
6	Sami	1	1
7	Shankeshwar	1	2
8	Santalpur	2	2
9	Sidhpur	2	0
	Total	**15**	**14**

Source: Director General of Police, Patan, 2013-14

1.2 Land Utilization Pattern

Patan district has a total geographical area of 566772 hectares in its command. The land utilization pattern of district is shown in the table 1.3:

The table 1.3 shows that the land utilization feature of the district is distinctive. Of the total geographical area, 449001 hectares is cropped area which is 79.22 percent of the total land use. The land utilized for non agricultural purpose is 7.97 percent of total geographical area. However, permanent pastures and other grazing land is 28341 hectares which is 5 percent of

total land of the district and the forest area is also very low which is only 8.21 percent of the total geographical area of the district.

Table 1.3: Land Use Classification of Patan District (2014-15) (in hectares)

Sr	Particulars	Patan	% of Total Land
1	Total Land Use	566772	-
2	Forest Area	46526	8.21
3	Barren & uncultivable land	15538	2.74
4	Land put to non agricultural use	45167	7.97
5	Permanent pastures and other grazing land	28341	5.00
6	Land under Misc. tree crops & groves	46527	8.21
7	Cultivable waste	14048	2.48
8	Current and other fallow land	34002	6.00
9	Net area sown	383271	67.62
10	Area sown more than once	65730	11.60
11	Total cropped area	449001	79.22

Source: Agriculture Department, Patan (2014-15)

1.3 Irrigated Area

The crop wise irrigated area in the district is presented in the table 1.4:

Table 1.4: Crop Wise Total Irrigated Area in Patan District (2014-15)

Sr	Crop	Area in Hectares	% of Total Area
1	Foodgrains	49417	11.07
2	Cereals	44495	9.97
3	Oilseeds	145178	32.53
4	Non Food Crops	207202	46.43
	Total Area	**446292**	**100.00**

Source: Statistical Abstract, Patan, (2014-15)

The table 1.4 illustrates that the share of foodgrains in total irrigated area is 11.07 percent in the district. The irrigated area for cereals, oilseeds and non food crops was 44495, 145178 and 207202 hectares which accounted 9.97 percent, 32.53 percent and 46.43 percent of total irrigated area.

1.4 Rainfall Distribution

The average rainfall during 1984-2014 years has been in range of 538mm. The general weather conditions are conducive to good agriculture harvest. The rainfall distribution in Patan district is shown in the table 1.5:

Table 1.5: Rainfall Distribution in Patan District (2015)

Sr	Taluka	Average Rainfall in mm (1984 - 2014)	Rainfall in mm 2014	Current Year Rainfall in mm 2015	% of current year rainfall against average rainfall
1	Patan	614	842	769	125.24
2	Saraswati	614	839	766	124.75
3	Sidhpur	673	1015	777	115.45
4	Chanasma	500	483	431	86.20
5	Hariz	514	414	659	128.21
6	Sami	505	359	418	82.77
7	Sankheshwar	505	305	378	74.85
8	Radhanpur	528	418	892	168.93
9	Santalpur	448	301	506	112.94
	District	**538.0**	**552.89**	**621.77**	**113.26**

Source: Office of the District Agriculture Officer, Patan, 2014-15

1.5 Demographic Features

The major demographic characteristics are presented in the table 1.6:

Table 1.6: Demographic Characteristics of Patan District (2011)

Sr	Particulars	Patan			Gujarat		
		Male	Female	Total	Male	Female	Total
1	Total Population	694397	649337	1343734	31491260	28948432	60439692
	Rural	548324	514329	1062653	17799159	16895450	34694609
	Urban	146073	135008	281081	13692101	12052982	25745083
2	Total SC Popul.	64190	59218	123408	2110331	1964116	4074447
	Rural	50370	46553	96923	1176107	1105466	2281573
	Urban	13820	12665	26485	934224	858650	1792874
3	Total ST Popul.	6835	6468	13303	4501389	4415785	8917174
	Rural	3189	2993	6182	4042691	3979157	8021848
	Urban	3646	3475	7121	458698	436628	895326
4	Total Households		267633			12248428	
5	Density of Popul.		232			308	
6	Growth Rate (2001 - 2011)	13.4	13.8	13.6	19.4	19.2	19.3
7	Sex Ratio		935			919	
8	Child Sex Ratio		890			890	
9	Literacy Rate	82.9	61.05	72.3	85.75	69.68	78.03

Source: Census of India, Gujarat, 2011

The table 1.6 shows that the district shares 2.2 percent of population of the state total. The share of urban population is 1.09 percent and that of rural population is 6.29 percent of the state total.

The total SC population in the district is 3.02 percent and that of the ST population is 0.15 percent of the state total.

The scheduled caste population in rural area is higher by 4.25 percent to their counterparts living in urban Patan. But when it comes to the ST population there is a very less difference between the rural and urban population. 46.47 percent of district's ST population lives in the rural areas.

The household trend too is almost identical with the population; total households in the district are 2.19 percent of the state. The district population growth rate is 13.6 and that of the state is 19.3 (2001-2011).

The sex ratio of Patan district is 935 which is higher than the state sex ratio with 919 and the child sex ratio is 890 which is equal to state child sex ratio. The literacy rate of district is 72.3 percent which is lower than the state literacy rate with 78.03 percent. The literacy rate shows a marginal 5.73 percent less of the state and also 2.85 and 8.63 percent less respectively in male and female literacy levels.Patan district has 232 density of population where the state has 308 which is higher than the district's density of population.

1.6 Labour Force

Of the total workers population in the state which is 18000914, the district has 554830 workers. The total workforce in the district is shown in the table 1.7:

The table 1.7 illustrates that the percentage of total workers in Patan district is 41.3 percent of the total population whereas the percentage of total workers in the state is 41.0 percent of the total population. The female work participation rate is 26.5 percent in the district and the male work participation rate is 55.2 percent which is higher than the female work participation rate but in state male work participation rate is 57.2 percent and the female work participation rate is 23.4 percent.

1.7 Major Occupations

Type of major occupation is represented through the category of workers engaged in the occupation. Accordingly, workers linked to major occupations in the district are; cultivators, agricultural labour, workers in household industry and a broad category termed as other workers. The category of workers is presented in the table 1.8:

The table 1.8 shows that the percentage of cultivators, agricultural labourers, household workers and other workers is 24.6 percent, 40.9 percent, 1.15 percent and 33.3 percent respectively in the Patan district whereas the state percentage is 21.9 percent, 27.6 percent, 1.4 percent and 49.0 percent respectively.

Table 1.7: Total Workforce in Patan District (2011)

Category	Patan						Gujarat					
	Total	**%**	**Male**	**%**	**Female**	**%**	**Total**	**%**	**Male**	**%**	**Female**	**%**
Total Workers	554830	41.3	383074	55.2	171756	26.5	24767747	41.0	18000914	57.2	6766833	23.4
Main Workers	446240	80.4	353815	92.4	92425	53.8	20365374	82.2	16567695	92	3797679	56.1
Marginal Workers	108590	19.6	29259	7.6	79331	46.2	4402373	17.8	1433219	8	2969154	43.9
Non Workers	788904	58.7	311323	44.8	477581	73.5	35671945	59	13490346	42.8	22181599	76.6

Source: Census of India, Gujarat, 2011

Table 1.8: Category Wise Distribution of Workers in Patan District (2011)

Category	Patan						Gujarat					
	Total	**%**	**Male**	**%**	**Female**	**%**	**Total**	**%**	**Male**	**%**	**Female**	**%**
Cultivators	136590	24.6	116007	84.9	20583	15.1	5447500	21.9	4244449	77.9	1203051	22.08
Agri. Labourers	227080	40.9	126749	55.8	100331	44.2	6839415	27.6	3649591	53.4	3189824	46.64
Ho. In. Workers	6392	1.15	3714	58.1	2678	41.9	343999	1.4	210561	61.2	133438	38.79
Other Workers	184768	33.3	136604	73.9	48164	26.1	12136833	49.0	9896313	81.5	2240520	18.46
Total Workers	**554830**	**100**	**383074**	**69.0**	**171756**	**30.9**	**24767747**	**100.0**	**18000914**	**72.7**	**6766833**	**27.32**

Source: Census of India, Gujarat, 2011

1.8 Housing Conditions

The housing conditions are described as good, livable and dilapidated. The distribution of households according to their housing condition in Patan district is shown in the table 1.9:

Table 1.9: Distribution of Households according to their Condition of Housesin Patan District (2011)

Condition	Patan		Gujarat	
	No	%	No	%
Good	166872	61.99	8193176	67.26
Livable	93468	34.72	3801407	31.21
Dilapidated	8834	3.28	187135	1.54
Total	**269174**	**100.00**	**12181718**	**100.00**

Sources: Housing Tables, Census of India, Gujarat, 2011

The table 1.9 shows that the percentage of households with good condition houses in the district is less than the state. The state has 67.26 percent while the district has 61.99 percent. But the livable condition of houses and dilapidated houses is 34.72 percent and 3.28 percent respectively which is higher than the state.

1.9 House Pattern

The distribution of households with different category of roof types of houses in the district is presented in the table 1.10:

Table 1.10: Distribution of Households by Type of Roof of their Houses in Patan District (2011)

Sr	Type of Roof	Patan	Gujarat	% of State
1	Grass/Thatch/Mud etc.	7089	186678	3.80
2	Plastic/Polythene	1790	59221	3.02
3	Handmade Tiles	27600	1088463	2.54
4	Machine made Tiles	58581	2747275	2.13
5	Burnt Brick	990	62749	1.58
6	Stone/Slate	8799	377890	2.33
7	Metal Sheets	92078	2300893	4.00
8	Concrete	71931	5346603	1.35
9	Any Other	316	11946	2.65
Total		**269174**	**12181718**	**2.21**

Source: Housing Tables Census of India, Gujarat, 2011

The table 1.10 shows that 4.0 percent of total state households have houses with metal sheet. The percentage of households of handmade and machine made tiles of roof type is 2.54 percent and 2.13 percent of the state total. The households with concrete roof are only 1.35 percent of the state households.The percentage of grass / thatched /mud roof houses is 3.80 percent of the state households.

1.10 Source of Electricity

The source of electricity is shown in the table 1.11:

The table 1.11 describes that only 83.0 percent households of the total households in district are using electricity while it is 2.03 percent of the state total. The second main source of lighting is kerosene in the district which is 14.6 percent of the total households in the district and it is 3.98 percent of the state total households. It is noticed that 1.3 percent of households in the district and are not availing the facility of electricity.

Table 1.11: Distribution of Households by Source of Electricity (2011)

Sr	Source of Electricity	Patan	% of District	Gujarat	% of State
1	Electricity	223424	83.0	11013214	2.03
2	Kerosene	39171	14.6	983813	3.98
3	Solar Energy	328	0.1	16016	2.05
4	Other Oil	1805	0.7	26155	6.90
5	Any Other	873	0.3	25617	3.41
6	No Lighting	3573	1.3	116903	3.06
	Total	**269174**	**100.0**	**12181718**	**2.21**

Source: Housing Tables Census of India, Gujarat, 2011

1.11 Livestock

The livestock population in the district consists of cattle 130300, buffaloes 372440, sheep 37716 and goat with 80331 numbers. It is presented in the table 1.12:

Table 1.12: Livestock Population in Patan District (2012)

Sr	Livestock	Patan	% of District	Gujarat	% of State
1	Cattle	130300	1.3	9983953	20.8
2	Buffalo	372440	3.6	10385574	59.5
3	Sheep	37716	2.2	1707750	6.0
4	Goat	80331	1.6	4958972	12.8
5	Horses & Ponies	669	3.7	18264	0.1
6	Pigs	0	0.0	4279	0.0
7	Camel	2674	8.8	30415	0.4
8	Others	1594	4.1	38993	0.3
	Total	**625724**	**2.3**	**27128200**	**100.0**

Source: 19thLivestock Census, Patan, 2012

The table 1.12 describes that during the year 2012 the total livestock in state was 27128200 whereas in Patan district it was 625724 which was 2.3 percent of the state total. The percentage of cattle and buffalo was 1.3 percent and 3.6 percent respectively of the total district livestock. The percentage share of camel was highest in district.

1.12 Roads and Transport

Roads constitute the major chunk of transport infrastructure through a network of national highways, state highways and district roads. The road length is presented in the table 1.13:

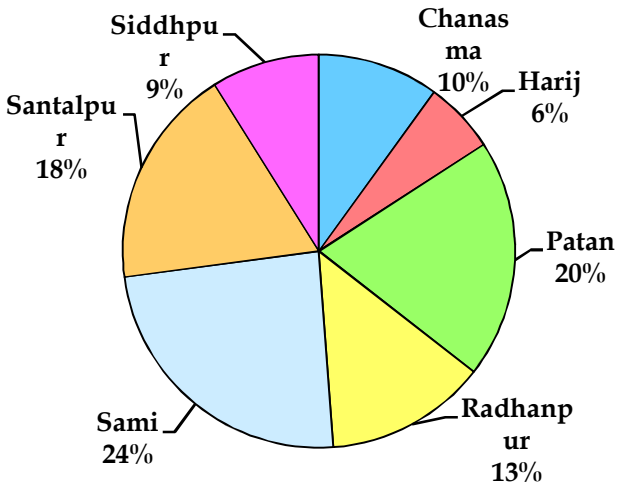
Table 1.13: Taluka Wise Road Length in Patan District (20114-15) (in km)

Sr.	Talukas	State Highway	District Highway	Other District Roads	Village Roads	Total Length of Roads
1	Chanasma	33.0	133.8	17.7	165.0	349.5
2	Harij	58.0	68.7	10.5	69.4	206.6
3	Patan	103.0	177.8	47.5	360.3	688.6
4	Radhanpur	40.0	61.6	36.7	328.1	466.4
5	Sami	82.0	218.4	50.7	492.2	843.3
6	Santalpur	31.0	24.9	119.8	461.5	637.2
7	Sidhpur	27.0	129.3	40.7	115.8	312.8
	District	**374.0**	**814.5**	**323.6**	**1992.3**	**3504.4**

Source: Statistical Abstract, Patan (2014-15)

The table 1.13 presents that the road length in Patan district is 3504.7 Km. In the total road length 374 Km is contributed by state government, 814.5 Km contributed by district. The total village approach roads are 1992.3 Km.The percentage of various roads is presented in the figure 1.1:

Figure 1.1: Taluka Wise Road Length in Patan District (2014-15) (in percentage)



Source: Source: Statistical Abstract, Patan (2014-15)

The figure 1.1 illustrated that out of total road length Sami shared highest percentage of road length with 24 percent. It is followed by Patan and Santalpur taluka with 20 percent and 18 percent respectively. The lowest contribution of road length is found of Harij taluka with only 6 percent.

1.13 Status of Educational Institutions

District has educational institutions of all categories; general education, professional colleges and teacher training schools. The number of educational institutions students and teachers are shown in the table 1.14:

The table 1.14 shows that the district represents 797 primary schools with 182946 students, 225 secondary and senior secondary schools with 59690students and 88 colleges with 25646 students. The number of teachers in primary, secondary and college level were 5733, 1601 and 697 respectively.

Table 1.14: Status of Educational Institutions in Patan District (2014-15)

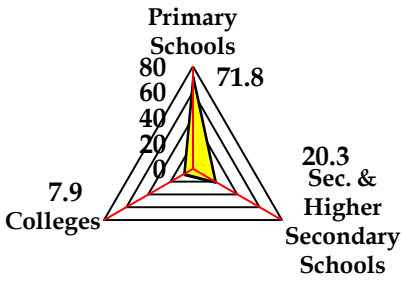
Sr	Particulars	Total Schools	Number of Students	Number of Teachers
1	Primary Schools	797	182946	5733
2	Sec. & Higher Secondary Schools	225	59690	1601
3	College	88	25646	697
	Total	**1110**	**268282**	**8031**

Source: Statistical Abstract, Gujarat, 2014-15

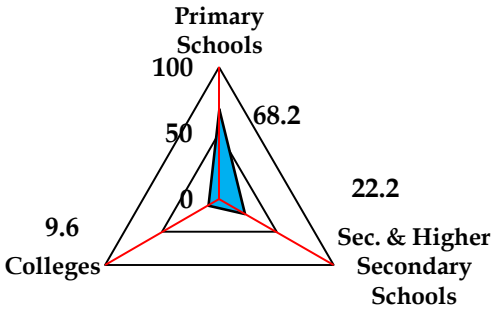
The status of educational institutions is presented by radars in figure 1.2:

Figure 1.2: Status of Educational Institutions in Patan District (2014-15)

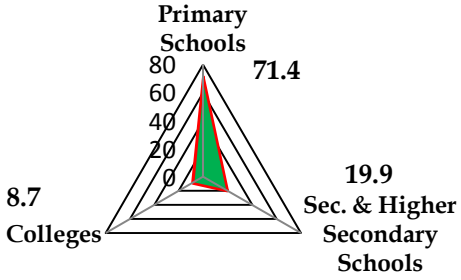
(A) Number of Institutions



(B) Number of Students



(C)Number of Teachers



Source: Source: Statistical Abstract, Gujarat, 2014-15

1.14 Health Related Institutions

Health related institutions in the district are mainly 2 government hospitals, 15 community health centers, 38 primary health centers, 210 sub centers and 12 ayurvedic hospitals. The health institutions are shown in the table 1.15:

The table 1.15 illustrates that the share of community health center in Patan district is 4.72 percent of the state total whereas the share of public health center is 3.28 percent of state total. The district consists of 2 government hospitals, 12 ayurvedic hospitals and 5 homeopathic hospitals which is 2.35 percent, 3.90 percent and 2.48 percent of state total.

Table 1.15: Number of Health Infrastructure in Patan District (2013-14)

Sr	Particulars	Patan	Gujarat	% of State
1	Community Health Centers	15	318	4.72
2	Primary Health Centers	38	1158	3.28
3	Sub Centers	210	7274	2.89
4	Government Hospitals	2	85	2.35
5	Ayurvedic Hospitals (Govt.)	12	308	3.90
6	Homeopathic Hospitals (Govt.)	5	202	2.48

Source: Statistical Abstract, Gujarat, 2013-14

1.15 Population and Decadal Change (2001-2011)

Gender wise and residence wise population of the census year 2001 and 2011 is presented in the table 1.16:

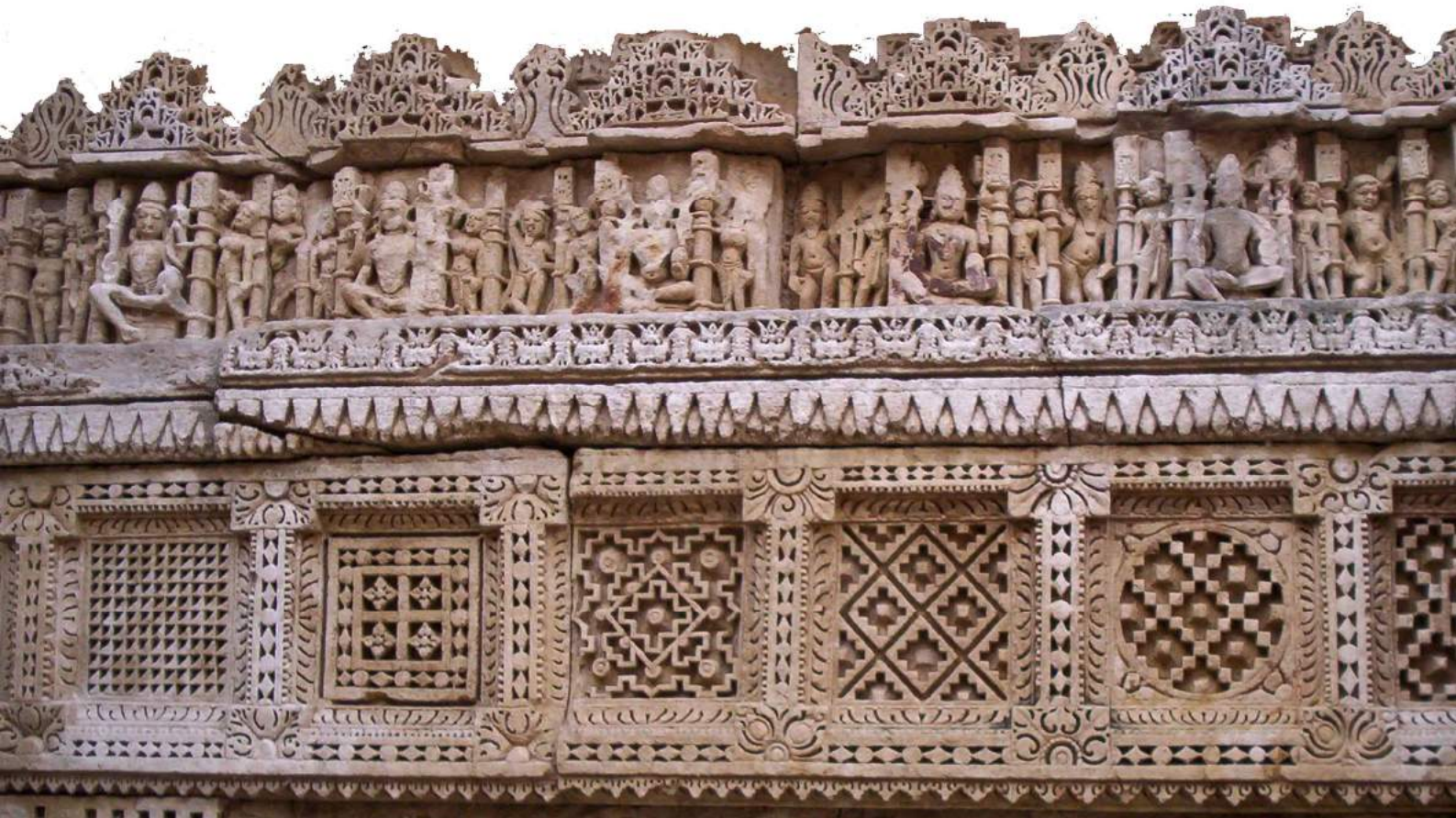


Table 1.16: Sex Wise and Residence Wise Population and Decadal Change of population in Patan District (2001-2011)

State/District/ Taluka	T/ M/ F	Total Population						% of Decadal Change		
		Total		Male		Female		T	M	F
		2001	2011	2001	2011	2001	2011	2001-2011		
GUJARAT	T	50671017	60439692	26385577	31491260	24285440	28948432	19.3	19.4	19.2
	R	31740767	34694609	16317771	17799159	15422996	16895450	9.31	9.1	9.6
	U	18930250	25745083	10067806	13692101	8862444	12052982	36.0	36.0	36.0
District	**T**	**1182709**	**1343734**	**612100**	**694397**	**570609**	**649337**	**13.6**	**13.4**	**13.8**
	R	**944281**	**1062653**	**487266**	**548324**	**457015**	**514329**	**12.5**	**12.5**	**12.5**
	U	**238428**	**281081**	**124834**	**146073**	**113594**	**135008**	**17.9**	**17**	**18.9**
Chanasma	T	128629	130743	66484	67752	62145	62991	1.6	1.9	1.4
	R	112807	114811	58240	59407	54567	55404	1.8	2	1.5
	U	15822	15932	8244	8345	7578	7587	0.7	1.2	0.1
Harij	T	84813	94562	44402	48994	40411	45568	11.5	10.3	12.8
	R	66341	74309	34674	38545	31667	35764	12	11.2	12.9
	U	18472	20253	9728	10449	8744	9804	9.6	7.4	12.1
Patan	T	383961	449480	199833	233211	184128	216269	17.1	16.7	17.5
	R	270212	315743	139878	163313	130334	152430	16.9	16.8	17
	U	113749	133737	59955	69898	53794	63839	17.6	16.6	18.7
Radhanpur	T	120177	144266	62122	74083	58055	70183	20	19.3	20.9
	R	87986	104708	45353	53675	42633	51033	19	18.3	19.7
	U	32191	39558	16769	20408	15422	19150	22.9	21.7	24.2
Sami	T	164705	182805	84606	94050	80099	88755	11	11.2	10.8
	R	164705	182805	84606	94050	80099	88755	11	11.2	10.8
	U	0	0	0	0	0	0	0	0	0
Santalpur	T	109487	128791	56590	66720	52897	62071	17.6	17.9	17.3
	R	109487	128791	56590	66720	52897	62071	17.6	17.9	17.3
	U	0	0	0	0	0	0	0	0	0
Sidhpur	T	190937	213087	98063	109587	92874	103500	11.6	11.8	11.4
	R	132743	141486	67925	72614	64818	68872	6.6	6.9	6.3
	U	58194	71601	30138	36973	28056	34628	23	22.7	23.4

Source: Census of India, Gujarat, 2011

It is evident from the table 1.16 that female population is less than the male population in the district. Female population forms 48.32 percent of the total population of the total district. Similarly, rural female population accounted for 48.40 percent of the total rural population in 2011.

Taluka wise changes in male and female population in 2011, over the census of 2001, shows that the female population increased by about 20.9 percent in Radhanpur taluka followed by 17.5 percent in Patan taluka. The increase in total population is highest in Radhanpur taluka with 19.3 percent in 2011 census over the census of 2001.

Other prominent taluka with regard to increase in male population are Santalpur (17.9 percent), Patan (16.7 percent) and Sidhpur (11.8 percent). In case of urban population the increase over census recorded was 18.9 percent in case of female and 17 percent in case of male population.

The gender wise and by residence, the 0-6 year population is shown in the table 1.17:

Table 1.17: Sex Wise and Residence Wise Child Population (0-6 years) and Decadal Change in Child Population (2001-2011)

State/ District/ Taluka	P/ M/ F	0-6 Years Population						% of Decadal Change		
		Total		Rural		Urban		T	R	U
		2001	2011	2001	2011	2001	2011	2001-2011		
GUJARAT	P	7532404	7777262	4000148	4115384	3532256	3661878	3.3	2.9	3.7
	M	5085941	4824903	2668527	2521455	2417414	2303448	-5.1	-5.51	-4.7
	F	2446463	2952359	1331621	1593929	1114842	1358430	20.7	19.7	21.9
District	**P**	**190192**	**184779**	**159495**	**153011**	**30697**	**31768**	**-2.8**	**-4.1**	**3.5**
	M	**101968**	**153011**	**84847**	**80705**	**17121**	**17057**	**50.1**	**-4.9**	**-0.4**
	F	**88224**	**87017**	**74648**	**72306**	**13576**	**14711**	**-1.4**	**-3.1**	**8.4**
Chanasma	P	17774	14868	16048	13290	1726	1578	-16.3	-17.2	-8.6
	M	9860	8015	8873	7129	987	886	-18.7	-19.7	-10.2
	F	7914	6853	7175	6161	739	692	-13.4	-14.1	-6.4
Harij	P	13949	13127	11188	10495	2761	2632	-5.9	-6.2	-4.7
	M	7407	6857	5887	5492	1520	1365	-7.4	-6.7	-10.2
	F	6542	6270	5301	5003	1241	1267	-4.2	-5.6	2.1
Patan	P	57790	58359	44142	44640	13648	13719	1.0	1.1	0.5
	M	31490	31156	23726	23759	7764	7397	-1.1	0.1	-4.7
	F	26300	27203	20416	20881	5884	6322	3.4	2.3	7.4
Radhanpur	P	21909	22416	16793	17055	5116	5361	2.3	1.6	4.8
	M	11464	11685	8742	8808	2722	2877	1.9	0.8	5.7
	F	10445	10731	8051	8247	2394	2484	2.7	2.4	3.8
Sami	P	29485	26560	29485	26560	0	0	-9.9	-9.9	0.0
	M	15453	13952	15453	13952	0	0	-9.7	-9.7	0.0
	F	14032	12608	14032	12608	0	0	-10.1	-10.1	0.0
Santalpur	P	20001	22074	20001	22074	0	0	10.4	10.4	0.0
	M	10425	11548	10425	11548	0	0	10.8	10.8	0.0
	F	9576	10526	9576	10526	0	0	9.9	9.9	0.0
Sidhpur	P	29284	27375	21838	18897	7446	8478	-6.5	-13.5	13.9
	M	15869	14549	11741	10017	4128	4532	-8.3	-14.7	9.8
	F	13415	12826	10097	8880	3318	3946	-4.4	-12.1	18.9

Source: Census of India, Gujarat, 2011

It is evident from the table 1.17 that the population of 0-6 year children decreased to 184779 during the year 2011 from 190192 during the year 2001. It is shown from the table 1.17 that female child population is 46.39 percent of total 0-6 year population whereas rural 0-6 year

female population accounted for 46.80 percent during the year 2001 but in 2011, it is respectively 47.09 percent and 47.26 percent of the district. The table also shows the taluka wise changes in male female population in 2011 over the census of 2001.It is shown from the table 1.17 that the highest decadal change in child population is found in Sidhpur taluka with 13.9 percent and it is followed by Radhanpur taluka with 4.8 percent decadal change.

1.16 Scheduled Caste and Scheduled Tribe Population

The changes in scheduled caste and scheduled tribe population by gender wise and by residence of the different taluka in the district is presented in the table 1.18:

Table 1.18: Scheduled Caste Population Patan District (2001-2011)

State/District /Taluka	P/ M/ F	SC Population						% of Decadal Change		
		Total		Rural		Urban		T	R	U
		2001	2011	2001	2011	2001	2011	2001-2011		
GUJARAT	P	3592715	4074447	1866283	2110331	1726432	1964116	13.4	13.1	13.8
	M	2180441	2281573	1127423	1176107	1053018	1105466	4.6	4.3	4.98
	F	1412274	1792874	738860	934224	673414	858650	26.9	26.4	27.5
District	**P**	**116879**	**123408**	**91956**	**96923**	**24925**	**26485**	**5.6**	**5.4**	**6.3**
	M	**61023**	**64190**	**48011**	**50370**	**13012**	**13820**	**5.2**	**4.9**	**6.2**
	F	**55856**	**59218**	**43945**	**46553**	**11911**	**12665**	**6.0**	**5.9**	**6.3**
Chanasma	P	12362	11879	10449	10147	1913	1732	-3.9	-2.9	-9.5
	M	6507	6175	5508	5281	999	894	-5.1	-4.1	-10.5
	F	5855	5704	4941	4866	914	838	-2.6	-1.5	-8.3
Harij	P	8036	8353	6438	7035	1598	1318	3.9	9.3	-17.5
	M	4200	4296	3331	3597	869	699	2.3	8.0	-19.6
	F	3836	4057	3107	3438	729	619	5.8	10.7	-15.1
Patan	P	39840	45301	28426	32459	11414	12842	13.7	14.2	12.5
	M	20970	23775	14991	17030	5979	6745	13.4	13.6	12.8
	F	18870	21526	13435	15429	5435	6097	14.1	14.8	12.2
Radhanpur	P	9660	9947	6513	6443	3147	3504	3.0	-1.1	11.3
	M	4931	5124	3321	3306	1610	1818	3.9	-0.5	12.9
	F	4729	4823	3192	3137	1537	1686	2.0	-1.7	9.7
Sami	P	17234	16345	17234	16345	0	0	-5.2	-5.2	0.0
	M	8876	8373	8876	8373	0	0	-5.7	-5.7	0.0
	F	8358	7972	8358	7972	0	0	-4.6	-4.6	0.0
Santalpur	P	7384	8545	7384	8545	0	0	15.7	15.7	0.0
	M	3835	4419	3835	4419	0	0	15.2	15.2	0.0
	F	3549	4126	3549	4126	0	0	16.3	16.3	0.0
Sidhpur	P	22363	23038	15512	15949	8851	7089	3.0	2.8	-19.9
	M	11704	12028	8149	8364	3555	3664	2.8	2.6	3.1
	F	10659	11010	7363	7585	3296	3425	3.3	3.0	3.9

Source: Census of India, Gujarat, 2011

A perusal of the table 1.18 reveals that Patan taluka has the highest SC population with 36.71 percent during 2011 and it is followed by Sidhpur and Sami taluka with 18.67 percent and 13.24 percent respectively.

So far as gender wise changes in scheduled caste population in different talukas are concerned it can be noted from the table 1.18 that highest SC female population increased by 16.3 percent in Santalpur taluka and it is followed by Patan and Harij with 14.1 percent and 5.8 percent respectively. On the other side the highest increase in SC male population was found in Santalpur taluka with 15.2 percent and it is followed by Patan taluka with 13.4 percent.

The total scheduled caste population in the district is noted to have increased by 5.6 percent in 2011, over the data 2001 census. The decadal growth of SC population in urban area was recorded 6.3 percent.

The taluka wise percentage share of SC population to total population of the district and taluka is shown in the table 1.19:

Table 1.19: Taluka Wise Percentage Share of Scheduled Caste to TotalPopulation of theDistrict and Taluka (2001-2011)

Sr	Talukas	% share of SC Pop.to Total SC Pop. of the District		% share of SC Pop. to Total Pop. of the Taluka	
		2001	2011	2001	2011
1	Chanasma	10.58	9.63	9.61	9.09
2	Harij	6.88	6.77	9.47	8.83
3	Patan	34.09	36.71	10.38	10.08
4	Radhanpur	8.26	8.06	8.04	6.89
5	Sami	14.75	13.24	10.46	8.94
6	Santalpur	6.32	6.92	6.74	6.63
7	Sidhpur	19.13	18.67	11.71	10.81
	Total	**100**	**100**	**9.88**	**9.8**

Source: Census of India, Gujarat, 2011

It is evident from the table 1.19 that the highest SC population is found in Patan taluka with 34.09 percent of the total population of district during 2001 and it is followed by Sidhpur and Sami taluka accounted 19.13 percent and 14.75 percent respectively. During the year 2011, the highest SC population is also found in Patan taluka with 36.71 percent of the total population of district and followed by Sidhpur and Sami taluka with 18.67 percent and 13.24 percent respectively.

On the other side the highest SC population from the total population of taluka is found in Sidhpur taluka with 11.71 percent during the year 2001 and it is followed by Sami and Patan taluka with 10.46 percent and 10.38 percent respectively. But the population in Sidhpur taluka is decreased to 10.81 percent during the year 2011.

Similar information with regard to the scheduled tribe (ST) population in different taluka of the district is presented in the table 1.20:

Table 1.20: Scheduled Tribe Population in Patan District (2001-2011)

State/District/ Taluka	P/ M/ F	ST Population						% of Decadal Change		
		Total		Rural		Urban		T	R	U
		2001	2011	2001	2011	2001	2011	2001-2011		
GUJARAT	P	3592715	4074447	1866283	2110331	1726432	1964116	13.4	13.1	13.8
	M	2180441	2281573	1127423	1176107	1053018	1105466	4.6	4.3	4.9
	F	1412274	1792874	738860	934224	673414	858650	26.9	26.4	27.5
District	**P**	**12637**	**13303**	**6679**	**6182**	**5958**	**7121**	**5.3**	**-7.4**	**19.5**
	M	**6722**	**6835**	**3528**	**3189**	**3194**	**3646**	**1.7**	**-9.6**	**14.2**
	F	**5915**	**6468**	**3151**	**2993**	**2764**	**3475**	**9.3**	**-5.0**	**25.7**
Chanasma	P	543	347	477	222	66	125	-36.1	-53.5	89.4
	M	311	188	268	117	43	71	-39.5	-56.3	65.1
	F	232	159	209	105	23	54	-31.5	-49.8	134.8
Harij	P	974	565	355	24	619	541	-42.0	-93.2	-12.6
	M	567	298	211	15	356	283	-47.4	-92.9	-20.5
	F	407	267	144	9	263	258	-34.4	-93.8	-1.9
Patan	P	4401	5073	1047	1085	3354	3988	15.3	3.6	18.9
	M	2352	2598	562	570	1790	2028	10.5	1.4	13.3
	F	2049	2475	485	515	1564	1960	20.8	6.2	25.3
Radhanpur	P	3191	3551	2270	2537	921	1014	11.3	11.8	10.1
	M	1594	1781	1136	1286	458	495	11.7	13.2	8.1
	F	1597	1770	1134	1251	463	519	10.8	10.3	12.1
Sami	P	545	383	545	383	0	0	-29.7	-29.7	0.0
	M	301	191	301	191	0	0	-36.5	-36.5	0.0
	F	244	192	244	192	0	0	-21.3	-21.3	0.0
Santalpur	P	1344	1350	1344	1350	0	0	0.4	0.4	0.0
	M	713	696	713	696	0	0	-2.4	-2.4	0.0
	F	631	654	631	654	0	0	3.6	3.6	0.0
Sidhpur	P	1639	2034	641	581	998	1453	24.1	-9.4	45.6
	M	884	1083	337	314	547	769	22.5	-6.8	40.6
	F	755	951	304	267	451	684	26.0	-12.2	51.7

Source: Census of India, Gujarat, 2011

A cursory glance at the table 1.20 reveals that scheduled tribe population in district has increased to 5.3 percent during the year 2011. The table reveals that Patan taluka has the highest ST population with 38.13 percent followed by Radhanpur and Sidhpur taluka with 26.69 percent and 15.29 percent respectively during the year 2011.

It is also noticed that the rural ST population decreased with 7.4 percent whereas the ST urban population increased with 19.5 percent during the year 2011. The male and female population in the district was also increased with 1.7 percent and 9.3 percent respectively.

The taluka wise percentage share of ST population to total population of the district and taluka is shown in the table 1.21:

Table 1.21: Taluka Wise Percentage Share of Scheduled Tribe to Total Population of theDistrict and Taluka (2001-2011)

Sr	Talukas	% Share of ST Pop. to Total ST Pop. of the District		% Share of ST Pop. To Total Pop. of the Taluka	
		2001	2011	2001	2011
1	Chanasma	4.3	2.61	0.42	0.27
2	Harij	7.71	4.25	1.15	0.6
3	Patan	34.83	38.13	1.15	1.13
4	Radhanpur	25.25	26.69	2.66	2.46
5	Sami	4.31	2.88	0.33	0.21
6	Santalpur	10.64	10.15	1.23	1.05
7	Sidhpur	12.97	15.29	0.86	0.95
	Total	**100**	**100**	**1.07**	**0.99**

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

It is evident from the table 1.21 that the highest ST population is found in Patan taluka with 34.83 percent of the total population of district during 2001 and it is followed by Radhanpur and Sidhpur taluka accounted 25.25 percent and 12.97 percent respectively. During the year 2011, the highest ST population is found in Patan taluka with 38.13 percent of the total population of district and followed by Radhanpur and Sidhpur respectively with 26.69 percent and 15.29 percent. It is noticed that decrease in ST population is found in Chanasma, Harij, Sami and Santalpur taluka.On the other side the highest ST population from the total population of taluka is found in Radhanpur taluka with 2.66 percent during the year 2001 and it is followed by Santalpur with 0.86 percent whereas in the year 2011, the highest ST population was found in Radhanpur taluka with 2.46 percent for the total population of taluka and it is followed by Santalpur with 1.05 percent of the taluka.

1.17 Urbanization

In the light of rapid industrialization in the state it is shown from the table 1.22 that the share of urban population in Gujarat is increased to 42.6 percent in 2011 from 37.4 percent during the year 2001. Patan district has low industrialization but it may lead to rapid urbanization and therefore the urban population of district increased to 20.9 percent during 2011 from 20.2 percent during the year 2001.

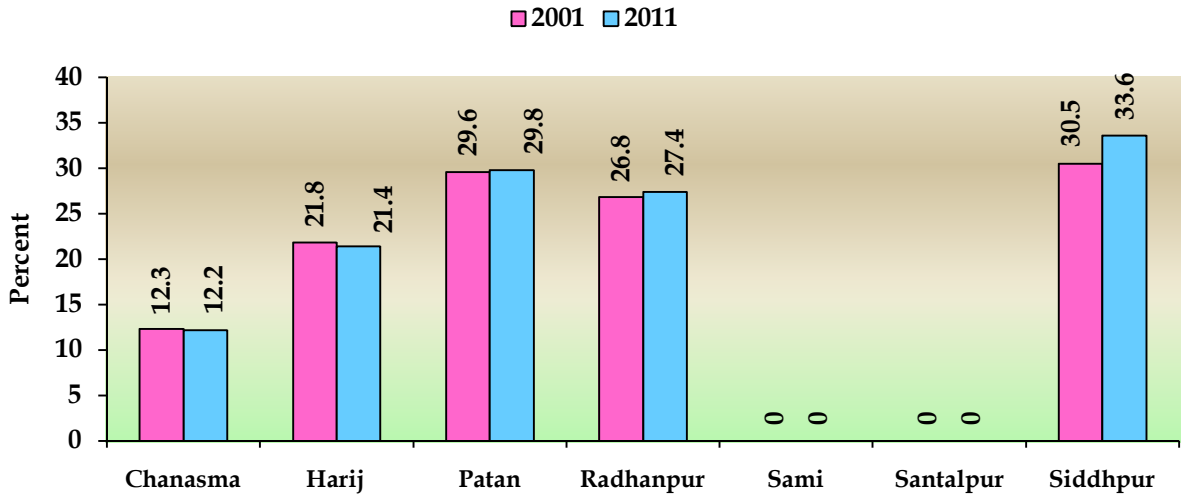
Table 1.22: Urbanization in Patan District (%) (2001-2011)

Sr	Taluka	2001	2011
1	Chanasma	12.3	12.2
2	Harij	21.8	21.4
3	Patan	29.6	29.8
4	Radhanpur	26.8	27.4
5	Sami	0	0
6	Santalpur	0	0
7	Sidhpur	30.5	33.6
	Patan	**20.2**	**20.9**
	Gujarat	**37.4**	**42.6**

Source: Census of India, Gujarat, 2011

The increasing trend of urbanization in various taluka is presented in the figure 1.3:

Figure 1.3: Urbanization in Patan District (2001-2011)



Source: Registrar General of India, Census - 2011

The figure 1.3 illustrated that urbanization is increasing in Patan, Radhanpur and Sidhpur talukas. Sami and Santalpur taluka are completely rural area.

1.18 Sex Ratio

Sex ratio in the region has been higher than the sex ratio in Gujarat. The sex ratio for the year 2001 and 2011 is shown in the table 1.23:

The table 1.23 shows that during the year 2001, the highest sex ratio is found in both the taluka Sami and Sidhpur with 947 females per 1000 males and it is followed by Chanasma, Radhanpur and Santalpur taluka which has 935 sex - ratio in each taluka. But in 2011 the highest sex ratio is found in Radhanpur taluka with 947 sex - ratio and followed by Sami and Sidhpur taluka with 944 sex - ratio.

Table 1.23: Taluka Wise Sex Ratio of Patan District (2001-2011)

Sr	Taluka	2001			2011		
		Total	Rural	Urban	Total	Rural	Urban
	Gujarat	920	945	880	919	949	880
1	Chanasma	935	937	919	**930**	933	909
2	Harij	910	913	899	**930**	928	938
3	Patan	**921**	932	897	**927**	933	913
4	Radhanpur	**935**	940	920	947	951	938
5	Sami	947	947	0	944	944	0
6	Santalpur	935	935	0	**930**	930	0
7	Sidhpur	947	954	931	944	948	937
	District	**932**	**938**	**910**	**935**	**938**	**924**

Source: Census of India, Gujarat, 2001 & 2011, Registrar General of India
**orange color depicts that the respective talukas is having sex ratio less than district's sex ratio.*

It is also noticed that rural sex ratio is highest than urban sex ratio. The rural sex ratio was same as 938 in both the year but the urban sex ratio was increased to 924 during the year 2011 from 910 in the year 2001. But still it is lower than rural sex ratio. The highest rural sex ratio was found in Sidhpur with 948 sex - ratio in 2011 whereas the urban sex ratio was highest in Harij and Radhanpur taluka with 938 – 938 sex ratio in each district.The table illustrates that Harij and Patan taluka has less than district sex ratio during the year 2001 where as Chanasma, Harij, Patan and Santalpur taluka has less than district sex ratio in the year 2011. It seems that sex ratio is continuously decreasing than district sex ratio.The child sex ratio for 0-6 year age group is shown in the table 1.24:

Table 1.24:Taluka Wise Child Sex Ratio of 0-6 Years Age-group in Patan District (2001-2011)

Sr	Taluka	2001			2011		
		Total	Rural	Urban	Total	Rural	Urban
	Gujarat	883	906	837	890	914	852
1	Chanasma	803	809	749	855	864	781
2	Harij	883	900	816	914	911	928
3	Patan	835	860	758	873	879	855
4	Radhanpur	911	921	880	918	936	863
5	Sami	908	908	0	904	904	0
6	Santalpur	919	919	0	911	911	0
7	Sidhpur	845	860	804	882	886	871
	Total	**865**	**880**	**793**	**890**	**896**	**862**

Source: Census of India, Gujarat, 2001 & 2011, Registrar General of India
** orange color depicts that the respective talukas is having sex ratio less than district's sex ratio.*

The table 1.24 shows that during the year 2001, the highest 0-6 year sex ratio is found in Santalpur with 919 females per 1000 males and it is followed by Radhanpur and Sami taluka

with 911 and 908 sex ratio respectively. But in 2011 the highest sex ratio is found in Radhanpur taluka with 918 sex - ratio and it is followed by Harij and Santalpur with 914 and 911 sex ratio.

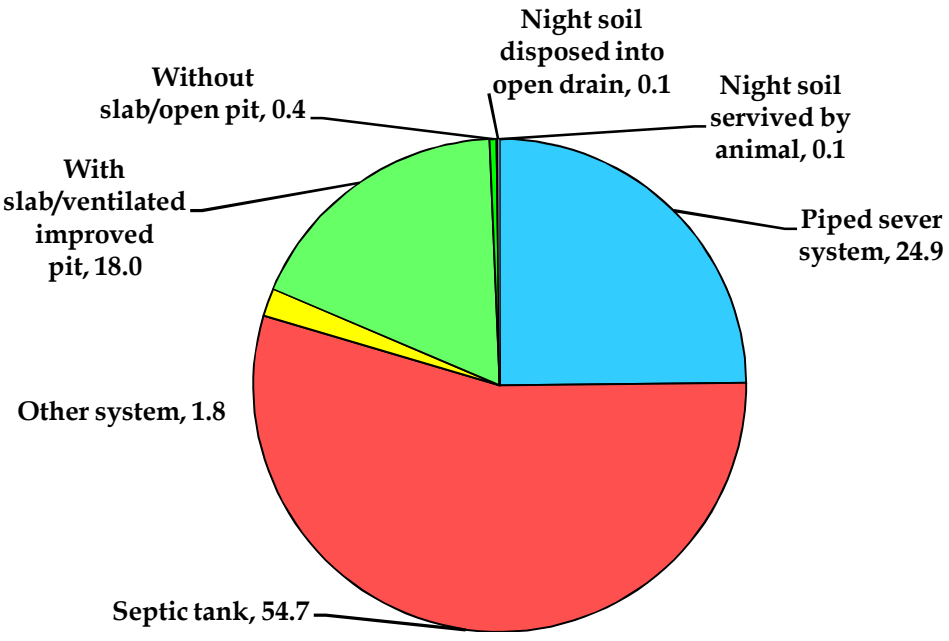
The table illustrates that Chanasma, Sidhpur and Patan taluka has less than district child sex ratio during the year 2001 where as Chanasma, Sidhpur and taluka has less than district child sex ratio in the year 2011. It seems that child ratio in talukas is still stagnant.

1.19 Sanitation

Premises have been defined as a building along with the lands and/or common places attached to it. A premise may not always have a compound wall or fencing. In such cases, the land or the common places as the case may be, available to the household is treated as 'Premises'.The latrine facility is available to only 46.01% households within the premises. The categories of latrine facility available to households within premises are shown in the figure 1.4:

It is stated from figure 1.4 that 79.6 percent households have flush/pour latrine connected to piped sewer, septic tank and other system. If the pour flush latrine was connected to a system of sewer pipes that collected both human excreta and waste water and removed them from the household environment. Sewerage system consisted of facilities for collection, pumping, treated and disposing of human excreta and waste water. This system is usually underground and is maintained by the public authorities.

Figure 1.4: Percentage of Households having Latrine Facilities within the Premises (2011)

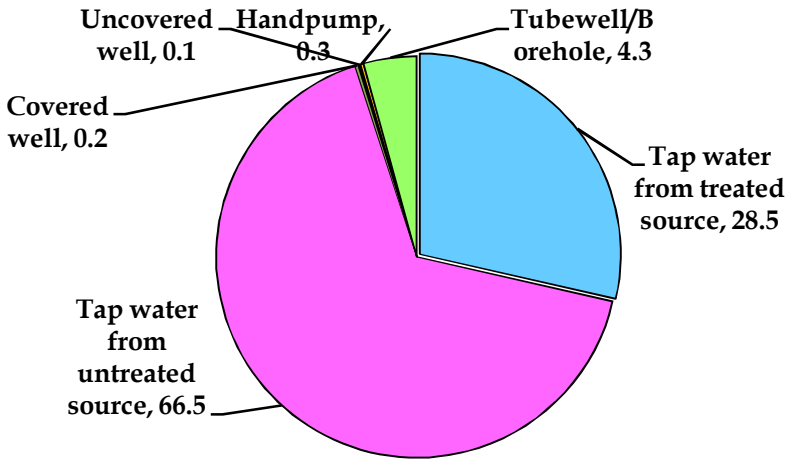


Source: Registrar General of India, Census - 2011

1.20 Drinking Water Facility within Premises

The main source of water for Gujarat is surface water. The state has 185 river basins and the available quota of water in the state is 55608 million cubic meters, out of which 38100 million cubic meters is surface water, which is only 2% of the entire quota of surface water of the country. Moreover, the available quota of surface water is also not distributed properly. Gujarat, Saurashtra and Kachchh have water resources of 89%, 9% and 2% respectively, against the total geographical area of these regions which is 45%, 31% and 24% respectively. The underground water resources of state are 17508 million cubic meters.The source of drinking water for households within the premises in Patan district is given in the figure 1.5:

Figure 1.5: Drinking Water Facility within Premises in Patan District (2011)



Source: Registrar General of India, Census - 2011

It is evident from the figure 1.2 that out of total 269174 households, only 67.84 percent households are having facility of drinking water within their premises. Only 28.5 percent households have the tap water from treated source while 66.5 percent household depends on untreated source. The taluka wise source of drinking water is presented in the table 1.25:

Table 1.25: Taluka Wise Main Source of Drinking Water Available to Households (2011) in percentage

Sr	Taluka	Treated Source	Untreated Source	Covered & Uncovered Wells	Hand Pumps & Tubewells	Other Sources
1	Chanasma	46.7	46.2	1.7	4.6	0.9
2	Harij	25.8	59.2	3.7	7.8	3.5
3	Patan	18.6	67.5	0.7	11.9	1.4
4	Radhanpur	19.1	73.2	0.8	5.3	1.6
5	Sami	7.1	65.9	13.4	7.4	6.2
6	Santalpur	13.0	75.9	7.3	2.0	1.8
7	Sidhpur	43.7	47.2	0.7	7.5	0.8
	District	23.9	62.7	3.4	7.9	2.1

Source: Registrar General of India, Gujarat, 2011

The table 1.25 illustrated that drinking water from treated source is available to 23.9 percent households and from untreated source to 62.7 percent. The total 3.4 percent households depend on wells for drinking water and 7.9 percent households are getting drinking water from hand pumps and tubewells. The rural households with drinking water connectivity are shown in the table 1.26:

Table 1.26 : Households with Drinking water connectivity (Rural) (as on March 2015)

Sr.	District / Taluka	Total no. of households	Household Connectivity Up to march 2015	Connectivity in %
1	Chanasma	24782	23693	95.61
2	Harij	16842	16520	98.09
3	Patan	27518	25135	91.34
4	Radhanpur	19386	17945	92.57
5	Sami	20233	18189	89.90
6	Satalpur	24913	23751	95.34
7	Sarswati	34371	30712	89.35
8	Shankheswar	13942	12143	87.10
9	Sidhpur	29747	27708	93.15
	Patan District	**211734**	**195796**	**92.47**

Source: WASMO, Gandhianagar

The table 1.26 shows that 92.4 percent households of rural area in Patan district has drinking water connectivity in their houses. The total rural households in Patan district are 211734 out of which 195796 have water connection.

1.21 Position of Patan District in Human Development

Human Development Report, Gujarat, published in 2004, illustrated the position of districts of the state. Human development index is a summary measure of human development that measures the average achievement in a country or in a state. It comprises of four measures viz. (1) Human Development Measure – 1 (HDM-1) that measures opportunities/capabilities of individuals; (2) Gender Development Measure – 1 (GDM-1) that measures the level of opportunities/capabilities available to women in relation to men; (3) Gender Equity Index (GEI) that measures gender inequality; and (4) Human Development Measure -2 (HDM-2) that measures macro level capabilities and opportunities available to both men and women and includes macro capabilities relating to macro processes and structures.

Table 1.27: Human Development Measure-1 (HDM-1)

Indicators	Income	Education	Health	Housing	Participation	HDM-1	HDI
Patan Index	0.032	0.630	0.664	0.278	0.468	0.414	0.442
Gujarat Index	0.241	0.744	0.710	0.266	0.434	0.479	0.565
Patan Rank	**18**	**18**	**15**	**20**	**10**	**20**	**20**
Gujarat Rank	6	6	9	2	10	6	6

Source: Human Development Report, Gujarat, 2004

According to Gujarat Human Development Report, 2004; Patan ranked 20th in human development index with 0.442 value out of 25 districts (as in 2004) in Gujarat as per table 1.27. In terms of Human Development Measure (HDM-1), Patan ranked 20th in the state with 0.414 index value. Patan ranked 18th in income as well as in education with 0.032 and 0.630 index values respectively. The condition of housing is not so good in 2004 as it ranked 20th with only 0.278 index value but Patan ranked 15th in health with 0.664 index value. The position of Patan is much better though it ranked 10th in state with 0.468 value.

Table 1.28: Gender Development Measure-1 (GDM-1)

Indicators	Income	Education	Health	Housing	Participation	GDM-1	GDI
Patan Index	0.210	0.610	0.512	0.278	0.380	0.398	0.444
Gujarat Index	0.208	0.736	0.710	0.266	0.348	0.454	0.551
Patan Rank	**12**	**19**	**22**	**20**	**13**	**21**	**21**
Gujarat Rank	4	6	9	2	12	6	6

Source: Human Development Report, Gujarat, 2004

As per table 1.28, Gender Development Measure-1 (GDM-1) Patan ranked 21st in the state with 0.398 index value which is far behind from state index value 0.454. Patan which is from bottom of districts in overall GDM-1 is 19th in education index, 22nd in health and 20th in housing index.

Table 1.29: Gender Empowerment Index (GEI)

Indicators	Income	Education	Health	Participation	GEI
Patan Index 2001	0.813	0.697	0.780	0.363	0.663
Gujarat Index 2001	0.509	0.804	1.055	0.358	0.682
Patan Rank 2001	**8**	**22**	**23**	**16**	**22**
Gujarat Rank 2001	4	9	8	10	8

Source: Human Development Report, Gujarat, 2004

As per table 1.29, Gender Empowerment Index (GEI) Patan ranked 22nd in the state with 0.663 index value which is less than state index value 0.682. Patan ranked 8th in income index with 0.813 but it ranked 22nd in education and 23rd in health with 0.697 and 0.780 index value respectively.

Table 1.30: Human Development Measure-2 (HDM-2)

Indicators	Environment	Basic Services	Regional Equality	Patriarchy	HDM-2
Patan Index	0.426	0.294	0.737	0.487	0.486
Gujarat Index	0.315	0.692	0.769	0.563	0.585
Patan Rank	**18**	**19**	**6**	**21**	**18**
Gujarat Rank	13	2	9	9	6

Source: Human Development Report, Gujarat, 2004

As per table 1.30, Human Development Measure-2 (HDM-2) Patan ranked 18th in the state with 0.486 index value. In environment Patan ranked 18th and 19th in basic services with 0.426 and 0.294 value, however Patan ranked 6th in regional equality with 0.737 index value.

1.22 Success Stories

The success stories of Patan district is mentioned in box 1.1:

BOX 1.1

Success Story – I

Village – Jesagpura Taluka – Patan District – Patan

Jesagpura village of Patan taluka is located 32 km far away from headquarter of Patan district. In the year, 2011-12, the village was awarded by the award of "Nirmal Gram". The total population of this village is 513 and the total 110 households are residing in the village. The large part of the population belongs to Brahmin's. The main occupation of the village is agriculture and animal husbandry.

Economic, social and educational conditions of village

The people of the village are economically sound, socially they are well behavioured and educationally they are in a good condition.

Various basic facilities in village

(1) ***Gram Panchayat:****Gram Panchayat plays an important role in the basic facilities of the village. The elected representatives of the gram panchayat are the base of village development. Shri Joshi Jammuben Ramabhai is the sarpanch of the village and the sarpanch with its team is implementing various development schemes in the village.*

(2) ***Primary School:****There is one primary school in the village with 1 to 7 standards. There is a tank of drinking water, two separate toilets and also underground water tank for collection of rain water. School organizes various regular activities along with juvenile court can be seen every month.*

(3) ***Middle School:****Middle school with 8 to 10 standard is located nearby the village Wayed. The students can avail middle level study from the village and for higher study they go to Patan city.*

(4) ***Anganwadi:****In the village there are two anganwadi centers. The building of one of the anganwadi is built by Reliance. Both anganwadi gives the facility of toilets and the maintenance of toilets is done by anganwadi. Presently, children are using them.*

(5) ***Milk Co-operative Society :*** *There is one cooperative milk society which is working with the help of villagers and collecting daily 400 Lt to 500 Lt milk from the people of village and the women are becoming economic self-reliant.*

(6) ***Drinking Water:*** *With the help of public partnership, a tank is constructed of one lakh litre capacity. Pumping machinery is also developed for regular supply of water. It is helpful for drinking water supply for the villagers.*

(7) ***Severage Line:****Previously, people of the village were using toilet pits but from the last four years, severage line is underlying under the various schemes. In the year 2010-11, under the TASC scheme with 1.50 lakh rupees expenditure, severage line is underlined and also toilets of all the houses in village are connected with the severage line. The best liquid waste management is seen in the village by gram panchayat. Dirty water cannot be seen in the village.*

(8) ***CC Road:****The village is located on the highway between Patan to Sirohi. However the village is*

connected from the approach road while entering in the village. All the houses and colonies are availing the facility CC road in village.

(9) ***Toilet Facility:****Presently 110 families are residing in the village. All the families are availing toilet facility and all the toilets are connected with severe line.*

(10) ***Disposal of Solid Waste:****Best management of disposal of solid waste by gram panchayat is seen in the village. Five sweepers are appointed for cleanliness in the village. Every Wednesday and Sunday, they clean all the colonies and roads regularly. Two cycles are arranged for collection of waste and dustbins are also arranged by panchayat. Gram panchayat is collecting 50/- per year from all the households. Sweepers are paid from the income of this deposit of households.*

(11) ***Street Light:****The village is connected with approach road to highway while entering in the village. There is a facility of street light in the center of road. Street light is available in all the colonies and roads of the village. Under the "Jyotigram" electricity supply is available for 24 hours. Electricity bill of street light is paid by gram panchayat.*

(12) ***Bus Stand:****The village is located between Chanasma – Mehasana highway and a bus stand with facility of drinking water is available on the highway.*

(13) ***Other Amenities:Pond -*** *Many years old a pond was located in the village and now it is developed under the NEREGA scheme which is recognized with a name Abhutkunj.****Panchwati:*** *A beautiful panchwati is built with the help of public partnership which is used for seating in the evening.****Condition of village before the award of "Nirmal Gram":*** *There was lack of awareness about cleanliness among the people of village before getting the award of "Nirmal Gram". The main reason was that they were not aware of IEC activities but transparent administration and good management by sarpanch and members of panchayat and to take benefit of nirmal gram scheme, toilets has been constructed in each home and if anyone should go outside for toilets they should be punished strictly. After this a meeting is held under the scheme TASC.*

Specific work done in the village

- *Door-to-door solid waste collection*
- *Regularly village dusting*
- *Dustbins at every home*
- *All houses are connected with severage line*
- *All houses have water connection*
- *All the solid waste of houses is thrown in a particular pit far away from the village*
- *Regular meetings of gram panchayat is held in the village*
- *All the rural development schemes in the village is implemented and targets are achieved.*

Success Story – II

Village – Pimple ***Taluka – Chanasma*** ***District – Patan***

Pimple village of Chanasma taluka is located 12 km far away from headquarter of Patan district. In the year, 2009-10, the village was awarded by the award of "Nirmal Gram". The total population of this village is 2145 and the total 471 households are residing in the village. The large part of the population belongs to Patel, Thakur, Harijan and Brahmin's. The main occupation of the village is agriculture and animal husbandry.

Economic, social and educational conditions of village

The people of the village are economically sound, socially they are well behavioured and educationally they are in a good condition.

Various basic facilities in village

(1) Gram Panchayat:*Gram Panchayat plays an important role in the basic facilities of the village. The elected representatives of the gram panchayat are the base of village development. Shri Kirti Bhai Patel is the sarpanch of the village and the sarpanch with its team is implementing various development schemes in the village.*

(2) Primary School: *There is one primary school in the village with 1 to 7 standards. There is a tank of drinking water, two separate toilets and also underground water tank for collection of rain water. School organizes various regular activities along with juvenile court can be seen every month.*

(3) Middle School:*Middle school with 8 to 10 standard is located nearby the village Wayed. The students can avail middle level study from the village and for higher study they go to Patan city.*

(4) Anganwadi:*In the village there are two anganwadi centers. The building of one of the anganwadi is built by Reliance. Both anganwadi gives the facility of toilets and the maintenance of toilets is done by anganwadi. Presently, children are using them.*

(5) Milk Co-operative Society : *There is one cooperative milk society which is working with the help of villagers and collecting daily 400 Lt to 500 Lt milk from the people of village and the women are becoming economic self-reliant.*

(6) Drinking Water:*With the help of public partnership, a tank is constructed of one lakh litre capacity. Pumping machinery is also developed for regular supply of water. It is helpful for drinking water supply for the villagers.*

(7) Severage Line:*Previously, people of the village were using toilet pits but from the last four years, severage line is underlying under the various schemes. In the year 2009-10, under the TASC scheme of Rs. 1.50 lakh expenditure, severage line is underlined and also toilets of all the houses in village are connected with severage line. The best liquid waste management is seen in the village by gram panchayat. Dirty water can't be seen in the village.*

(8) CC Road: *The village is located on the highway between Chanasma – Mehasana. However the village is connected from the approach road while entering in the village. All the houses and colonies are availing the facility CC road in village.*

(9) Toilet Facility:*Presently 471 families are residing in the village. All the families are availing toilet facility and all the toilets are connected with severe line.*

(10) Disposal of Solid Waste:*Best management of disposal of solid waste by gram panchayat is seen in the village. Five sweepers are appointed for cleanliness in the village. Every Wednesday and Sunday, they clean all the colonies and roads regularly. Two cycles are arranged for collection of waste and dustbins are also arranged by panchayat. Gram panchayat is collecting 50/- per year from all the households. Sweepers are paid from the income of this deposit of households.*

(11) Street Light:*The village is connected with approach road to highway while entering in the village. There is a facility of street light in the center of road. Street light is available in all the colonies and roads of the village. Under the "Jyotigram" electricity supply is available for 24 hours. Electricity bill of street light is paid by gram panchayat.*

(12) Bus Stand:*The village is located between Chanasma – Mehasana highway and a bus stand with facility of drinking water is available on the highway.*

(13) Telephone Exchange:*Telephone exchange facility is available in the village for the better communication.*

(14) Primary Health Center: *There is one primary health center in a village and nearby people of 15 villages are benefitted from the center. The primary health center is neat and clean and it is well managed.*

(15) Veternery Hospital:*There is one veternery hospital in the village and the people of nearby villages are benefitting by taking treatment of their animals.*

(16) Bank Facility:*"Dena Gramin Bank" exists in the village for financial transactions.*

(17) Other Amenities:Pond: *Many years old a pond was located in the village and now it is developed under the NEREGA scheme which is recognized with a name Abhutkunj.*

Panchwati: *A beautiful panchwati is built with the help of public partnership which is used for seating in the evening.****Work done in village after the award of "Swarnim Gram":*** *There was lack of awareness about cleanliness among the people of village before getting the award of "Swarnim Gram". The main reason was that they were not aware of IEC activities but transparent administration and good management by sarpanch and members of panchayat and to take benefit of swarnim gram scheme, toilets has been constructed in each home and if anyone should go outside for toilets they should be punished strictly. After this a meeting is held under the scheme TASC.*

Specific work done in the village

- *Door-to-door solid waste collection*
- *Regularly village dusting*
- *Dustbins at every home*
- *All houses are connected with severage line*
- *All houses have water connection*
- *All the solid waste of houses is thrown in a particular pit far away from the village*
- *Regular meetings of gram panchayat is held in the village*
- *All the rural development schemes in the village are implemented and targets are achieved.*
- *100 percent birth and death registration by gram panchayat*
- *Dropout rate is zero in the village and 100 percent vaccination in the village.*

OOOO

CHAPTER - II

Literacy and Education

Facts

Literacy Rate	2011	72.3
SC Literacy Rate	2011	76.0
ST Literacy Rate	2011	62.89
Gender Gap in Literacy Rate	2011	21.9
Gross enrolment ratio (Class I - VIII)	2014-15	99.59
Net enrolment ratio (Class I - VIII)	2014-15	91.23
Dropout Rate (I-V)	2014-15	0.97
Student Teacher Ratio	2014-15	24.6

Chapter 2

Literacy and Education

"Education is the basic tool for the development of consciousness and reconstitution of society."
- Mahatma Gandhi

2.1 Introduction

Education is an investment in human resource, plays an important role among the factors which contribute to economic growth (Kothari, 1966). Government of India has recognized the crucial and vital role of education in development. The Constitution of India (Article 45) states that the state shall endeavour to provide, within a period of ten years from the commencement of the constitution, for free and compulsory education for all children until they complete the age of fourteen years. Several policies lay emphasis on the role and importance of education as a means of development and consider education sector for investment for the development of the country (Government of India, 1986).

Education plays an important role in shaping an individual's career. The level of education helps people to earn recognition and respect in the society. Undoubtedly education is both socially and personally an indispensible part of human life. However the inequalities in the standards of education are still a major issue that needs to be solved as early as it could be. The importance of education in our life cannot be ignored at any cost. Education is the only way to get knowledge.

Education also helps in developing healthy surroundings. Every object that a mankind creates is based over the knowledge that he attains through education. The more the society develops the more life becomes dependent over education. Though education plays a major role in shaping our society still on an average it is seen that education is not the same in different areas. Every year government is taking huge efforts and plan strategies to maintain the quality of education everywhere because the development of a nation depends directly upon the standard of its education.

Educational policies and programmes lay stress on the promotion of mass education; comprising of universal primary and upper primary education and adult education. Equity in education by gender, caste and socio-economic groups and reduction in regional disparities in educational development remains the thrust of educational planning and policy in the country (Tilak, 2006). Generally education is considered as a powerful means to reduce poverty and achieve economic growth. It increases individual earning potential and productivity of residents, enhances capacity to participate in development process, promotes a healthy population which is a major determinant of democracy and builds competitive economy (World Bank, 2006 UNESCO, 2007). Education also reduces the incidence of social problems, all which can weigh heavily on the economy.

The education system in India attempts to impart ability to read, write and count through a formal system. It also imparts knowledge and skills primarily to increase productivity of workers in the formal economy. Those earning their livelihood from unskilled work, mainly in the informal sector, find little utility for this education and get discouraged. Thus, the current education system has created a wide gap between the formal and the unskilled informal system of the economy. Education when viewed more broadly, imparts values, ideas, attitudes and aspirations that are in the best interests of a nation, a community, an individual and above all, in the interests of human kind. Education is considered as an empowerment and a key to poverty eradication.

BOX 2.1
Widening Horizans

"I'm learning how to read, so that I can read my own destiny."
"I'm learning how to write, so that I can write my own destiny."
"I'm learning how to count, so that I can keep an account of my rights."

Ministry of Human Resource Development (1993a)

The recent 83rd constitutional amendment establishes elementary education as fundamental right of all citizens of India.The Yashpal Committee, which was set up to look at reducing the burden of schooling in children, states that the problem in Indian education started with the mixing up of the terms 'knowledge' and 'information'. When one says that the child has knowledge about something then it can mean that (a) the child has information about something, or (b) the child has information and can reproduce the information about something, or (c) the child has understood something and can apply this understanding in a different context. Since understanding is confused with 'acquisition of facts' (Ministry ofHuman Resource Development 1993b), neither the curriculum nor the examination system provides any scope for understanding and application of concepts learnt.

BOX 2.2: Education in the Indian Constitution

Education is in the concurrent list of the Indian Constitution. This concurrency gives an operational meaning to the National Policy on Education (NPE), 1986, which envisages "a meaningful partnership between the Centre and the states." NPE places clear responsibility regarding the national and integrative character of education, quality and standards, human resource planning, research and advanced study, culture, and international aspects of education on the central government.

Article 45 of the Constitution enjoins that "the State shall endeavour to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years." Article 46 states that, "the State shall promote with special care the educational and economic interests of the weaker sections of the people, and in particular, of the Scheduled Castes and the Scheduled Tribes and shall protect them from social injustice and all forms of exploitation."

Education is to achieve knowledge; knowledge is understanding and not acquisition of facts and repeating them. Education is not just amassing skills, but acquisition of critical skills to address life concerns. Education should empower the vast majority of the population in their struggle against deprivation. Education in India is mistaken for literacy, whereas the latter is only a stepping stone, and in the context of India, an important one, to the former.

2.2 Literacy: Levels, Differences and Trends

Literacy is one of the important indicators of social development. Knowledge is linked with literacy and a formal education. And economic growth is related to degree of literacy. Thus literacy is one of the important needs of life as well as future development of a particular region. It is 78.03 percent as per 2011 population census compared to the situation from 2001 census which is 69.14 percent.

Table 2.1:District wise Literacy Rate of Gujarat (2001 & 2011)

Sr.	Districts	2001		2011	
		Literacy Rate	Rank	Literacy Rate	Rank
	Gujarat	**69.14**	**-**	**78.03**	**-**
1	Kachchh	59.79	22	70.59	23
2	Banaskantha	50.97	25	65.32	25
3	**Patan**	**60.36**	**20**	**72.30**	**20**
4	Mehsana	75.22	5	83.61	6
5	Sabarkantha	66.65	14	75.79	13
6	Gandhinagar	76.59	3	84.16	4
7	Ahmedabad	79.50	1	85.31	2
8	Surendranagar	61.61	18	72.13	21
9	Rajkot	74.16	8	80.96	9
10	Jamnagar	66.48	15	73.65	18
11	Porbandar	68.62	12	75.78	14
12	Junagadh	67.78	13	75.80	12
13	Amreli	66.09	17	74.25	17
14	Bhavnagar	66.20	16	75.52	15
15	Anand	74.51	6	84.37	3
16	Kheda	71.96	9	82.65	7
17	Panchmahals	60.92	19	70.99	22
18	Dohad	45.15	26	58.82	26
19	Vadodara	70.76	10	78.92	10
20	Narmada	59.86	21	72.31	19
21	Bharuch	74.41	7	81.51	8
22	The Dangs	59.65	23	75.16	16
23	Navsari	75.83	4	83.88	5
24	Valsad	69.15	11	78.55	11
25	Surat	77.60	2	85.53	1
26	Tapi	57.00	24	68.26	24

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

There are some of the districts in Gujarat have comparatively higher literacy rate such as Surat (85.53 percent), Ahmadabad (85.31 percent), Anand (84.37 percent), Gandhinagar (84.16 percent) and Navsari (83.88 percent). Dahod is the district which has the literacy rate of 58.82 percent and stands last among all the districts. The district wise literacy rate of Gujarat is shown in the table 2.1:

The table 2.1 shows that the literacy status of Patan district is not so good. It ranks 20th in both the census year 2001 and 2011. An attempt has been made to analyze taluka wise male-female literacy rates, overall literacy rates and rural-urban gaps in literacy in Patan district of Gujarat. The gender gap and regional gap is shown in the table 2.2:

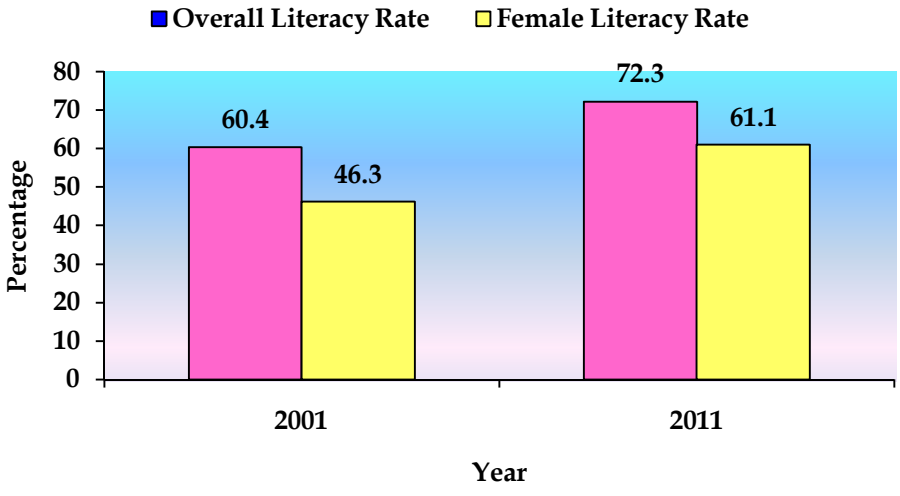
Table 2.2: Status of Literacy Rate in Patan District (2001-2011)

	2001				2011			
	Total	Rural	Urban	Regional Gap	Total	Rural	Urban	Regional Gap
Person	60.36	55.85	77.41	21.56	72.30	69.33	83.15	13.82
Male	73.63	70.28	86.11	15.83	82.90	80.96	89.96	9.00
Female	46.33	40.65	68.04	27.39	61.05	57.02	75.84	18.82
Gender Gap	27.3	29.63	18.07	-	21.85	23.94	14.12	-

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

The table 2.2 shows that Patan is educationally backward because of high rural urban gap of 13.82 percent and high male female gap of 21.85 percent in the year 2011. Although the regional gap and gender gap reduces from 21.56 percent and 27.3 percent respectively from the year 2001. It is also shows that high gender gap is found in rural area (23.94 percent) in comparison with urban area (14.12 percent) in the year 2011. The overall literacy rate and female literacy rate in Patan district of the year 2001 and 2011 is shown in the figure 2.1:

Figure 2.1: Overall Literacy Rate and Female Literacy Rate in Patan District (2001-11)



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

The figure 2.1 reported 60.4 percent overall literacy rate in 2001 whereas it increases to 72.3 percent in 2011, although the female literacy rate also increases to 61.1 percent in the year 2011 from 46.3 percent in 2001 census year.

The quality of population is intimately connected with education. Education plays a vital role in the betterment of socio-economic conditions, cultural life of the people and in empowering a person to better face challenges of life. Literacy rate thus serves the purpose of a handy and ready indication of development. The taluka wise literacy rate and gender gap in literacy level in the district have been presented in table 2.3 and gender gap in male female literacy is presented in the figure 2.2.

Table 2.3: Taluka Wise Literacy Rate in Patan District (2001 & 2011)

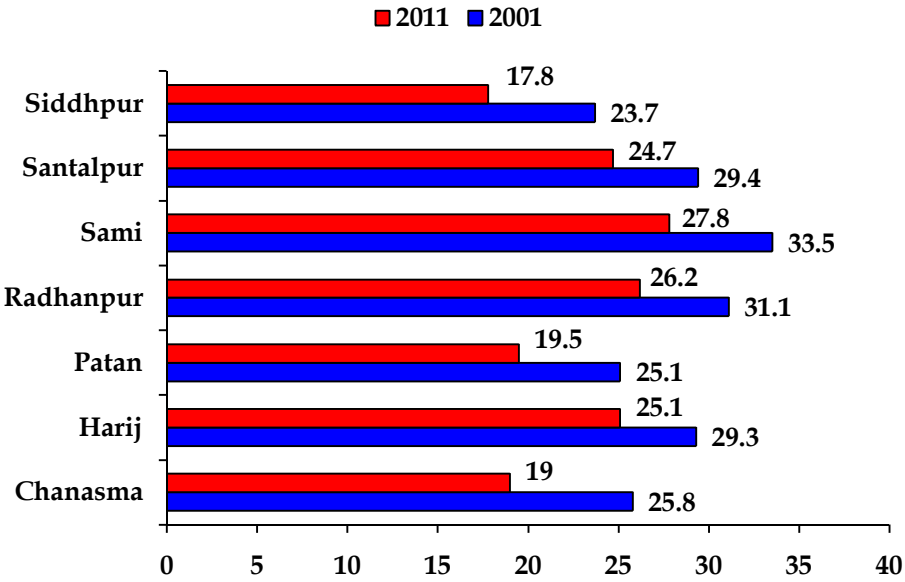
Sr	Talukas	2001				2011			
		Male	Female	Total	GAP	Male	Female	Total	GAP
1	Chanasma	86.2	60.4	73.6	25.8	90.7	71.7	81.5	19.0
2	Harij	66.8	37.5	52.8	29.3	78.5	53.4	66.4	25.1
3	Patan	78.2	53.1	66.0	25.1	85.6	66.1	76.2	19.5
4	Radhanpur	66.0	34.9	50.9	31.1	77.0	50.8	64.2	26.2
5	Sami	64.1	30.6	47.7	33.5	77.8	50.0	64.3	27.8
6	Santalpur	51.7	22.3	37.4	29.4	70.3	45.6	58.3	24.7
7	Sidhpur	83.8	60.1	72.1	23.7	89.8	72.0	81.1	17.8
	District	**73.6**	**46.3**	**60.4**	**27.3**	**82.9**	**61.0**	**72.3**	**21.9**
	Gujarat	**79.7**	**57.8**	**69.1**	**21.9**	**85.8**	**69.7**	**78.0**	**16.1**

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

The table 2.3 shows that educational attainment level in the district is lower than the state average. As per the 2011 census, district registered 72.3 percent overall literacy rates while state registered 78.0 percent literacy rate. Similarly, district has a male – female literacy gap of 21.9 percent as against 16.1 percent for Gujarat state. As per census 2001, Santalpur district has the lowest literacy rate with 37.4 percent while Chanasma taluka has the highest literacy rate with 73.6 percent. But in the year 2011, literacy rate of Santalpur taluka has increased to 58.3 percent of Santalpur taluka and also the highest literacy rate is again in Chanasma taluka with 81.5 percent.

A cursory glance on the table 2.3 reveals significant progresses in the literacy status of the people in Patan district during 2001-2011 periods. In fact between these two censuses the literacy rate in Patan district has gone up to 72.3 percent in 2011 from 60.4 percent in 2001 census. The status of female remains educationally backward as compared to males. The situation of women seems to be disturbing in some of the taluka of the district. The female male literacy gap has reduced by 5.4 percent in Patan district during the period of ten years. The taluka wise gender gap in male female literacy is presented in the figure 2.2:

Figure 2.2: Taluka Wise Gender Gap in Male Female Literacy Rate (2001 & 2011)



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

The figure 2.2 analysized the male female literacy gap across talukas showed wide variations. This gap worked out to be highest with 27.8 percent in Sami taluka followed by Radhanpur, Harij and Santalpur with 26.2 percent, 25.1 percent and 24.7 percent respectively in the year 2011.

It is worth mentioning here that the gap in male female literacy rate has reduced considerably in almost all the taluka of the district between 2001 and 2011census period. This gap in male female literacy has notably narrowed down to the highest extent by 6.8 percentage points in Chanasma taluka, 5.9 percentage points in Sidhpur taluka and 5.7 percentage points in Sami taluka. This implies that the maximum improvement in female literacy was observed in these taluka. The general improvement in female literacy status has been made possible on account of favourable government policy for female education, general awareness for female literacy and growth in educational infrastructure and increased educational outlays. Some of the government schemes are shown in the box 2.3:

BOX 2.3: Programmes for Education

Schemes Adopted to Enhance Education

- *Primary Education*
- *Vidhyalaxmi Bond Yojna*
- *Vidhyadeep Yojna*
- *Hon. Chief Minister's The Girl Child Development Program*
- *School-Health Check-up Program*
- *Computer Training at the Primary Educational level*

Secondary and Higher Secondary Department

- *Diploma for the teachers to improve their teaching skills*
- *Common Entrance Test for admission*
- *Teleconference for the students of Std. 10th and 12th.*

Technical Education

- *Self employment programs for the women*

2.3 Rural Urban Differences

The literacy rates for rural and urban areas are different for different districts and one can observe a large variation in the gap of literacy rates of rural urban area. The taluka wise the rural urban literacy rate is shown in the table 2.4:

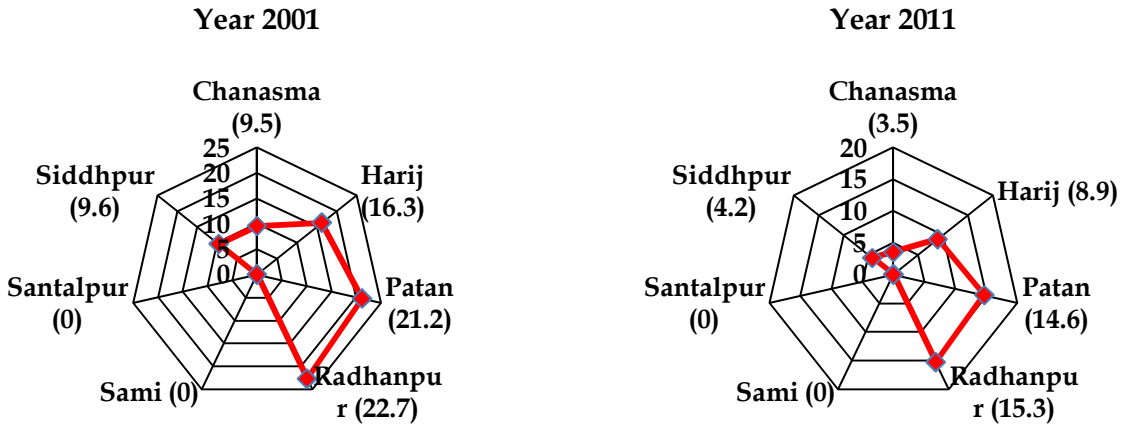
Table 2.4: Taluka Wise Rural Urban Literacy Rate in Patan District (2001 & 2011)

Sr.	Talukas	2001			2011		
		Rural	Urban	GAP	Rural	Urban	GAP
1	Chanasma	72.4	81.9	9.5	81.1	84.6	3.5
2	Harij	49.2	65.5	16.3	64.4	73.3	8.9
3	Patan	59.5	80.7	21.2	71.7	86.3	14.6
4	Radhanpur	44.7	67.4	22.7	59.9	75.2	15.3
5	Sami	47.7	0	0	64.3	0	0
6	Santalpur	37.4	0	0	58.3	0	0
7	Sidhpur	69.1	78.7	9.6	79.7	83.9	4.2
	District	**55.8**	**77.4**	**21.6**	**69.3**	**83.1**	**13.8**
	Gujarat	**61.3**	**81.8**	**20.5**	**71.7**	**86.3**	**14.6**

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

The table 2.4 exhibits that the district's rural urban literacy rate is less than the state's rural urban literacy rate in both the census year. In 2001 the rural literacy rate of Patan district was 55.8 percent and the urban literacy rate was 77.4 percent as compared to state rural literacy with 61.3 percent and the urban literacy rate with 81.8 percent. In 2011 the rural and urban literacy rate of district is 69.3 percent and 83.1 percent respectively while state rural urban literacy is 71.7 percent and 86.3 percent respectively. The rural urban gender gap is presented in the figure 2.3:

Figure 2.3:Rural Urban Literacy Gap (2001 & 2011)



The figure 2.3 shows that the rural urban literacy gap of Patan district was 21.2 percent in the year 2001 but in 2011 these gap reduces to 14.6 percent. The highest rural urban literacy gap is

noticed in Radhanpur taluka in both the year with 22.7percent in 2001 and during the year 2011 it was 15.3 percent.

2.4 Literacy Rate by Social Groups

The scheduled caste and scheduled tribe literacy rate by sex and residence is presented in the table 2.5:

Table 2.5: Scheduled Caste and Scheduled Tribe Literacy Rate by Sex and Residence, (2001-2011)

	Scheduled Caste						Scheduled Tribe					
	2001			2011			2001			2011		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	68.3	81.5	54.2	78.4	88.2	67.9	52.2	67.2	35.4	67.7	79.9	54.7
Rural	64.8	78.9	49.7	76.0	86.6	64.6	46.4	61.3	29.9	62.9	76.4	48.6
Urban	80.8	90.7	70.2	87.1	93.9	79.8	58.3	73.4	41.3	71.7	82.9	59.7

Source: Census of India, Gujarat, 2001 & 2011

The table 2.5 shows the increasing trend of literacy rate among scheduled caste and scheduled tribes. In 2011 the literacy rate of SC males increased to 88.17 percent from 81.45 percent in 2001. On the other side the SC female literacy increased to 67.95 percent in 2011 from 54.19 percent in 2001 whereas the ST male literacy rate increased to 79.98 percent in 2011 from 67.22 percent in 2001. On the other side the ST female literacy increased to 54.67 percent in 2011 from 35.43 percent in 2001. It reveals that although the literacy rate is increasing among both the groups but still the female literacy rate is low in both the social groups.

2.5 Number of Schools

Our development experience very clearly suggests the importance of and the role played by education in socio economic upliftment of the people. However in the changing times, the emphasis on the type and pattern of education has changed a lot. As a result different new fields have emerges in this sphere.There has been a spectacular increase in elementary education in the post independence period in Patan district of the state Gujarat. The brief account of total number of schools is given in the table 2.6:

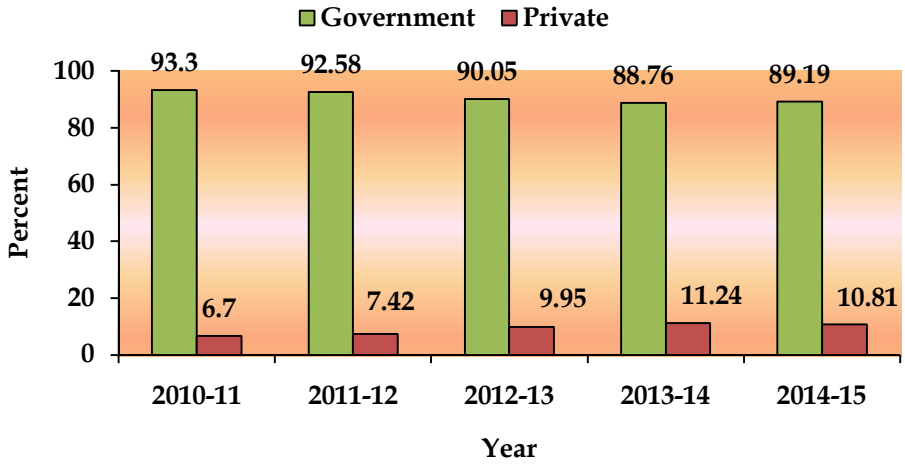
Table 2.6: Category Wise Number of Schools in Patan District (2010-11 to 2014-15)

School	2010-11		2011-12		2012-13		2013-14		2014-15	
Category	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private	Govt.	Private
Primary upper primary and secondary only	0	0	0	0	0	2	0	1	0	2
Primary with upper primary secondary and higher secondary	3	4	0	0	2	7	0	6	0	5
Primary	153	9	164	8	163	9	182	19	186	18
Primary with upper primary	687	45	680	57	680	64	663	67	652	63
Upper primary secondary and higher secondary	1	0	0	0	3	4	1	1	4	1
Upper primary and secondary	0	0	0	0	6	3	0	2	4	1
Upper primary only	6	3	5	3	7	3	7	12	12	14
Sub Total	**850**	**61**	**849**	**68**	**861**	**92**	**853**	**108**	**858**	**104**
Total	**911**		**917**		**953**		**961**		**962**	

Source: Gujarat Council of Elementary (SSA), Gandhinagar

The table 2.6 reported that there were 911 total schools in 2010-11. Of the total schools 93.3 percent was government schools whereas 6.7 percent was private schools. But in 2014-15 the number of schools increased to 962 schools. Out of the total schools 858 were government schools where as 104 were private schools. It seems that the district depends largely on government schooling. Private efforts are not forthcoming. The percentage classification of schools in Patan district is shown in the figure 2.4:

Figure 2.4: Percentage Classification of Schools in Patan District (2010-11 to 2014-15)



Source: Gujarat Council of Elementary (SSA), Gandhinaga

The figure 2.4 illustrates that the percentage of government schools is 93.3 percent in 2010-11 which decreased to 89.19 percent in 2014-15. On the other side the percentage of private schools was 6.7 percent in 2010-11 which increased to 10.81 percent. Thus, the percentage of private schools is very low when compared to government schools in Patan district.The taluka wise number of educational institutions is shown in the table 2.7:

Table 2.7: Taluka Wise Number of Educational Institutions in Patan District (2010-11 to 2014-15)

		2010-11				2014-15			
Sr	**Taluka**	**Primary**	**Hr Sec.**	**College**	**Total**	**Primary**	**Hr Sec.**	**College**	**Total**
1	Chanasma	79	31	1	111	79	30	9	118
2	Harij	66	14	0	80	71	14	0	85
3	Patan	255	72	44	371	255	78	51	384
4	Radhanpur	98	20	4	122	101	22	6	129
5	Sami	126	39	4	169	124	37	6	167
6	Santalpur	96	18	0	114	92	17	0	109
7	Sidhpur	75	26	2	103	75	27	16	118
	District	**795**	**220**	**55**	**1070**	797	225	88	1110

Source: District Statistical Outline, 2010-11 & 2014-15

The table 2.7 reveals that during the year 2010-11 there was total 1070 educational institutions. Out of these 795 was primary, 220 schools was higher secondary and 55 were colleges. These educational institutions increased to 1110 schools during 2014-15. Out of these 797 was primary, 255 was higher secondary schools and 88 were colleges. The highest educational institutions are found in Patan taluka in both the year, 371 institutions in 2010-11 which increased to 384 institutions in 2014-15.

Gunotsav: Patan district has being doing well as far as Gunotsav is concerned. The achievements of Gunotsav are shown in the table 2.7 (a):

Table 2.7 (a): Gunotsav at a Glance in Patan District

Year	Grade A+	Grade A	Grade B	Grade C	Grade D
2009	0	0	7	172	534
2010	0	0	10	492	369
2011	1	134	77	5	0
2013	33	510	263	24	15
2014	42	429	275	85	20
2015	76	508	221	29	6

Source: Gunotsav - Education Department, Gujarat.

The table 2.7 (a) shows that in the year 2009, there were no schools with A or A+ grade, whereas in 2015, there are 76 'A+' schools and 508 'A' grade schools. However, there are still

221 'B' grade schools. Proper steps needs to be taken for the 256 schools which falls in grade 'B', 'C' and 'D' to bring them in grade 'A' or 'A+'.

2.6 Number of Teachers

Teachers are perhaps the most important resource in a school. The number and quality of teachers have direct bearing on the educational output. The distribution of government and private teachers is shown in the table 2.8:

Table 2.8: Category Wise Number of Teachers in Patan District (2010-11 to 2014-15)

School	2010-11		2011-12		2012-13		2013-14		2014-15	
Category	**Govt**	**Pvt**	**Govt**	**Pvt**	**Govt**	**Pvt**	**Govt**	**Pvt**	**Govt**	**Pvt**
Primary upper primary and secondary only	0	0	0	0	0	23	0	29	0	34
Primary with upper primary secondary and higher sec.	11	55	0	0	15	101	0	100	0	91
Primary	414	37	457	40	500	45	527	117	535	100
Primary with upper primary	5863	463	5895	630	6170	843	5567	825	5716	783
Upper primary secondary and higher secondary	14	0	0	0	32	70	14	29	28	26
Upper primary and secondary	0	0	0	0	33	14	0	15	19	8
Upper primary only	27	12	29	12	22	21	23	61	65	71
Sub Total	**6329**	**567**	**6381**	**682**	**6772**	**1117**	**6131**	**1176**	**6363**	**1113**
Total	**6896**		**7063**		**7889**		**7307**		**7476**	

Source: Gujarat Council of Elementary (SSA), Gandhinagar

It is shown from the table 2.8 that during the year 2010-11 there was 6896 teachers. From this 6329 was government and 567 teachers were private. The number of teachers was increased to 7476 during the year 2014-15, from which 6363 was government and 1113 was private teachers. The highest number of teachers was found in primary and primary with upper primary schools. It is interesting to note that the percentage of government teachers was decreasing and the percentage of private teachers was increasing.

In 2010-2011 the percentage of government teachers was 93.0 percent while percentage of private teachers was 7.0 percent whereas the percentage of government teachers was 85.11 percent in the year 2014-15 and the percent of private teachers was 14.89 percent. The taluka wise number of teachers in Patan district is shown in the table 2.9:

Table 2.9: Taluka Wise Number of Teachers in Patan District (2010-11 to 2014-15)

		2010-11				2014-15			
Sr	**Taluka**	**Primary**	**Hr Sec.**	**College**	**Total**	**Primary**	**Hr Sec.**	**College**	**Total**
1	Chanasma	513	112	8	633	540	241	81	862
2	Harij	418	109	0	527	516	140	0	656
3	Patan	1661	698	251	2600	1786	512	376	2674
4	Radhanpur	681	191	31	903	685	210	52	947
5	Sami	923	200	27	1150	937	168	50	1155
6	Santalpur	627	87	0	714	582	96	0	678
7	Sidhpur	683	233	4	920	687	234	138	1059
	District	**5506**	**1630**	**311**	**7447**	5733	1601	697	8031

Source: District Statistical Outline, 2010-11 & 2014-15

The table 2.9 shows that during the year 2010-11 Patan district has 7447 government teachers. Out of these 5506 were primary, 1630 were middle and 31 teachers were higher secondary level teachers. These numbers of teachers were increased in the year 2014-15 to 8031 teachers. Out of these 5733 teachers were primary, 1601 were middle and 697 teachers were college level teachers.

2.7 Number of Students

The number of students at primary, secondary and college level is shown in the table 2.10:

Table 2.10: Taluka Wise Number of Students in Patan District (2010-11 to 2014-15)

		2010-11				2014-15			
Sr	**Taluka**	**Primary**	**Hr. Sec.**	**College**	**Total**	**Primary**	**Hr. Sec.**	**College**	**Total**
1	Chanasma	15811	5729	100	21640	15123	8253	2647	26023
2	Harij	13673	4140	0	17813	15568	5124	0	20692
3	Patan	53885	16235	9959	80079	55713	21354	13058	90125
4	Radhanpur	22257	5057	1986	29300	23255	6452	4080	33787
5	Sami	28897	4589	583	34069	28777	6832	3633	39242
6	Santalpur	20977	2647	0	23624	22624	3999	0	26623
7	Sidhpur	21922	9088	89	31099	21886	7676	2228	31790
	District	**177422**	**47485**	**12717**	**237624**	**182946**	**59690**	**25646**	**268282**

Source: District Statistical Outline, 2010-11 & 2014-15

The table 2.10 presents that during the year 2010-11, Patan district has 237624 students. Out of these 177422 were at primary level, 47485 were at higher secondary level and 12717 were at college level whereas during the year 2014-15 district has 268282 students which consist of 182946 students at primary, 59690 students at higher secondary and 25646 students at college level.

2.8 Teacher Student Ratio

The teacher student ratio is presented in the table 2.11:

Table 2.11: Taluka Wise Student Teacher Ratio in Patan District (2010-11 to 2014-15)

		2010-11			2014-15		
Sr	**Taluka**	**Primary**	**Hr Sec.**	**Total**	**Primary**	**Hr Sec.**	**Total**
1	Chanasma	1:31	1:51	1:34	1:28	1:34	1:30
2	Harij	1:33	1:38	1:34	1:30	1:37	1:32
3	Patan	1:32	1:23	1:31	1:31	1:42	1:34
4	Radhanpur	1:33	1:26	1:32	1:34	1:31	1:36
5	Sami	1:31	1:23	1:30	1:31	1:41	1:34
6	Santalpur	1:33	1:30	1:33	1:39	1:42	1:39
7	Sidhpur	1:32	1:39	1:34	1:32	1:33	1:30
	District	**1:32**	**1:29**	**1:32**	**1:32**	**1:37**	**1:33**

Computed by table 2.9 & 2.10

The table 2.11 reveals that Patan district has 1:32 teacher student ratio during the year 2010-11 which slightly increased to 1:33 during the year 2014-15. Chanasma, Harij and Sidhpur taluka has the same teacher student ratio with 1:34 but in 2014-15 it becomes respectively 1:30, 1:32 and 1:30. It seems that the student teacher ratio decreased in all the three talukas.It is also noticed that Patan district has 1:32 teacher student ratio at primary level and 1:29 at secondary level but during the year 2014-15 it becomes 1:31 and 1:42 respectively.

2.9 Gender Parity Index and Gender Gap

Gender equality in education and enhancing the access of girls to basic education are influences by three inter locking sets of issues – systematic, content and process of education and economy, society and culture. The gender parity index for primary and upper primary classes is presented in the table 2.12 for the year 2006-07 to 2014-15.

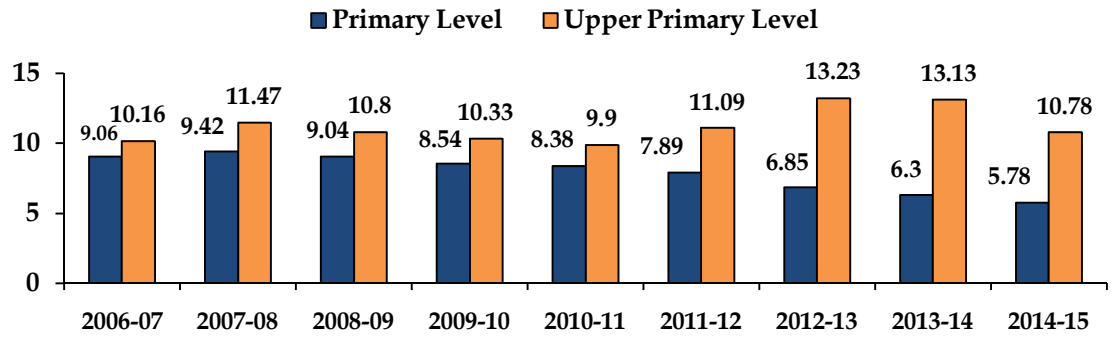
Table 2.12: Gender Parity Index (GPI) of Patan District

Year	GPI at Primary	GPI at Upper Primary
2006-07	0.83	0.82
2007-08	0.83	0.79
2008-09	0.83	0.81
2009-10	0.84	0.81
2010-11	0.85	0.82
2011-12	0.85	0.80
2012-13	0.87	0.77
2013-14	0.88	0.77
2014-15	0.89	0.81

Source: Gujarat Council of Elementary (SSA), Gandhinagar

The table 2.12 reveals that there is consistent improvement in gender parity index at primary level over the years. During the year 2006-07 the gender parity index was 0.83 but during the year 2014-15 it increased to 0.89. On the other side gender parity index at upper primary level the gender parity index reduced over the years. The index was 0.82 in 2006-07 but in the year 2014-15 it slightly reduced to 0.81.The year wise gender gap in education is shown in the figure 2.5:

Figure 2.5: Year Wise Gender Gap at primary & Upper Primary Level (2006-07 to 2014-15)



Source: Gujarat Council of Elementary (SSA), Gandhinagar

The figure 2.5 illustrated that gender gap is reducing at primary level. It was 9.06 in 2006-07 while in the year 2014-15 it reduced to 5.78. On the other side gender gap is increasing at upper primary level. The gender gap at upper primary level was 10.16 in the year 2006-07 but in 2014-15 it increased to 10.78.

2.10 Enrolment

The spread of education is measured by a combination of factors like adult literacy and the combined enrolment rate while computing human development index. As far as combined enrolment is concerned, this indicator was limited to the primary and secondary level. The enrolment in elementary class from 2005-06 to 2013-14 is presented in the table 2.13:

Table 2.13: Elementary Enrolment in Schools (in numbers)

Year	Elementary Enrolment	Change over previous year (%)
2005-06	169643	-
2006-07	175152	3.25
2007-08	193677	10.58
2008-09	191487	-1.13
2009-10	204069	6.57
2010-11	206774	1.33
2011-12	212654	2.84
2012-13	230573	8.43
2013-14	230415	-0.07
2014-15	225917	-1.95

Source: Gujarat Council of Elementary (SSA), Gandhinagar

It is reported from the table 2.13 that 169643 students were enrolled during the year 2005-06 whereas the enrolment of students increased to 225996 during the year 2014-15. The enrolment was decreased with 0.07 percent during 2013-14 also it decreased with 1.96 percent in the year 2014-15.The elementary enrolment of girls in school is shown in the table 2.14:

Table 2.14: Elementary Enrolment of Girls in Schools (in numbers)

Year	Elementary Enrolment	Change over previous year (%)
2005-06	76615	-
2006-07	79134	3.29
2007-08	85730	8.34
2008-09	85403	-0.38
2009-10	91498	7.14
2010-11	93151	1.81
2011-12	96011	3.07
2012-13	104643	8.99
2013-14	105172	0.51
2014-15	104263	-0.83

Source: Gujarat Council of Elementary (SSA), Gandhinagar

The table 2.14 describes that 76615 girls were enrolled during the year 2005-06 whereas the enrolment of girls increased to 104302 during the year 2014-15. The enrolment was increased with 8.99 during the year 2012-13 but in the year 2014-15 the enrolment of girls reduced to 0.85 percent.

The taluka wise enrolment in class 1 to 5 and class 1 to 8 for the year 2013-14 is presented in the table 2.15:

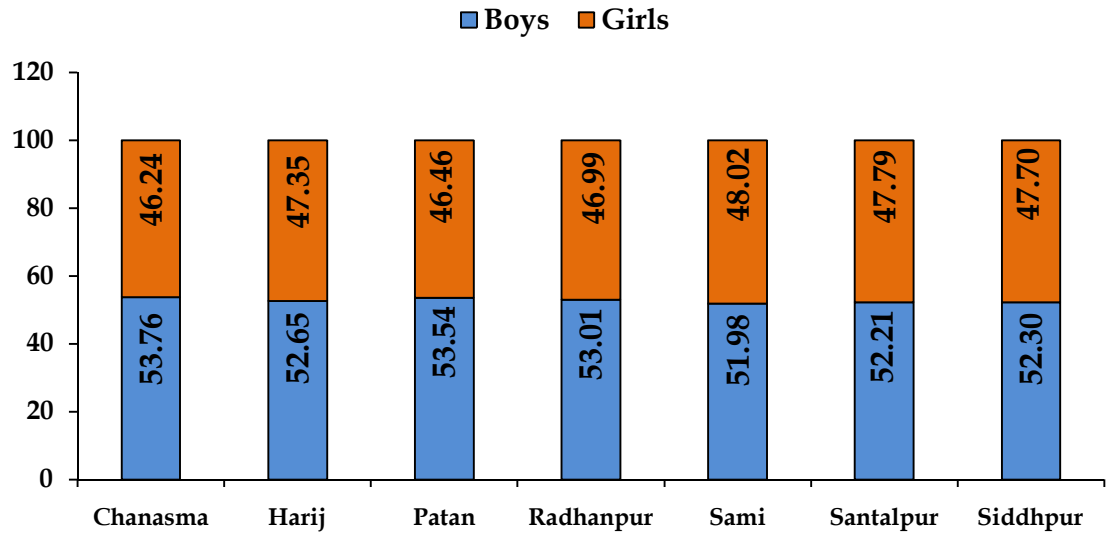
Table 2.15: Taluka Wise Enrolment in Patan District (2014-15)

Sr	Talukas	Class 1 to 5			Class 1 to 8		
		Boys	Girls	Total	Male	Female	Total
1	Chanasma	5692	4896	10588	9671	7996	17667
2	Harij	5776	5195	10971	9249	8269	17518
3	Patan	25077	21764	46841	41400	34231	75631
4	Radhanpur	9322	8262	17584	15448	12935	28383
5	Sami	9367	8654	18021	15465	13849	29314
6	Santalpur	8141	7453	15594	12844	11450	24215
7	Sidhpur	10632	9695	20327	17617	15572	33189
	District	**74007**	**65919**	**139926**	**121654**	**104263**	**225917**

Source: District Primary Education Office, Patan

The table 2.15 shows the enrolment of students in class 1 to 5 and class 1 to 8. The highest enrolment is found in Patan taluka with 46841 students in class 1 to 5 and 75631 students in class 1 to 8. The percentage of enrolment in class 1 to 5 is shown in the figure 2.6:

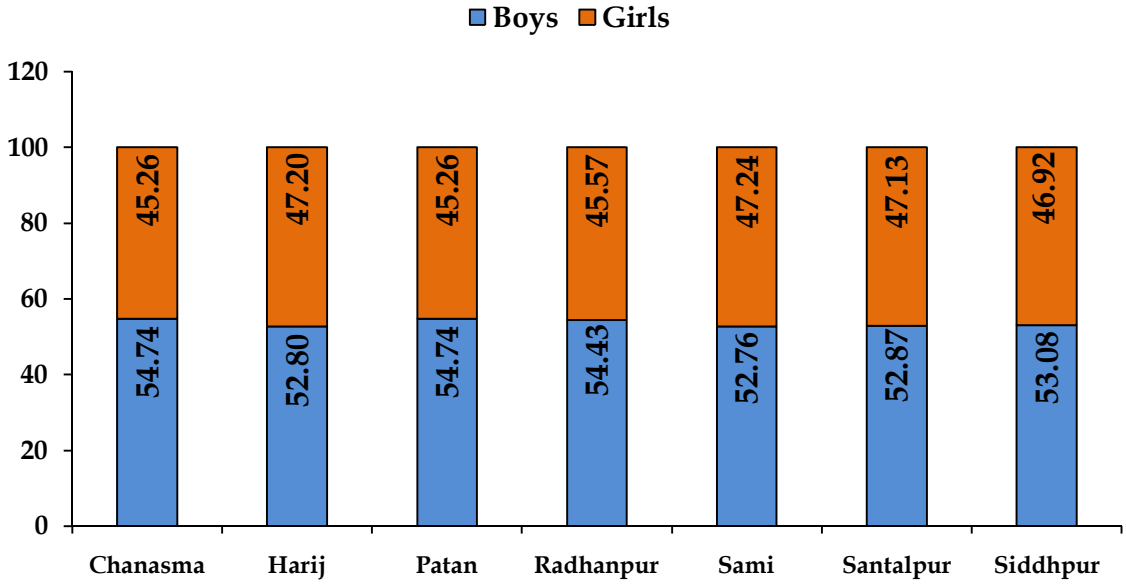
Figure 2.6: Percentage of Enrolment in Class 1 to 5 (2014-15)



Source: District Primary Education Office, Patan

The figure 2.6 illustrates that highest enrolment of girls was found in Sami taluka with 48.02 percent while the highest enrolment of boys was found in Chanasma taluka with 53.76 percent in class 1 to 5 during the year 2014-15.The percentage of enrolment in class 1 to 8 is shown in the figure 2.7:

Figure 2.7: Percentage of Enrolment in Class 1 to 8(2014-15)



Source: District Primary Education Office, Patan

The figure 2.7 illustrates that highest enrolment of girls was found in Sami taluka with 47.24 percent while the highest enrolment of boys was found in both Chanasma and Patan talukas with 54.74 percent in class 1 to 8 during the year 2014-15.

The enrolment in various standards is shown in the table 2.16:

Table 2.16: Taluka Wise Enrolment in Various Standards in Patan District (2014-15)

Sr	Talukas	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
1	Chanasma	1595	1870	2134	2493	2496	2419	2362	2298
2	Harij	1624	1897	2195	2678	2577	2378	2179	1990
3	Patan	7477	8261	9453	11052	10598	9917	9736	9137
4	Radhanpur	2902	3168	3393	4149	3972	3874	3511	3414
5	Sami	2850	3197	3450	4266	4258	4172	3713	3408
6	Santalpur	2727	2918	3061	3488	3321	3201	2919	2580
7	Sidhpur	3376	3733	4008	4600	4610	4573	4274	4015
	District	**22551**	**25044**	**27694**	**32726**	**31832**	**30534**	**28694**	**26842**

Source: District Primary Education Office, Patan

The table 2.16 shows the enrolment in various standards of Patan district. The highest enrolment was found in class 4 with 32766 students and the lowestenrolment was found in class 1 with 22551 students.The category wise enrolment of students from class 1 to 8 is shown in the table 2.17:

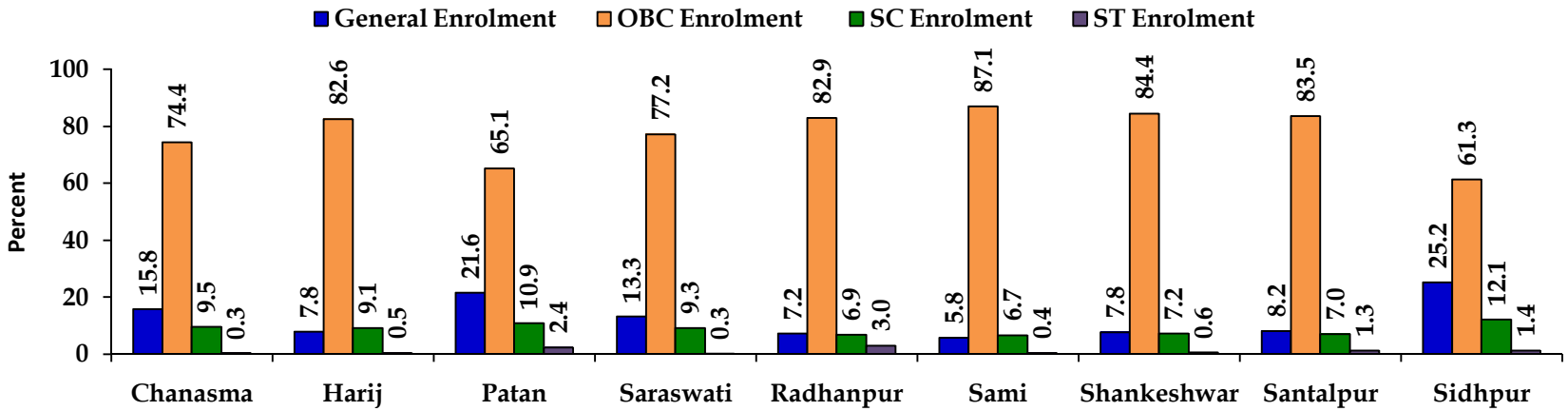
The table 2.17 shows that total enrolment of boys and girls was 121638 and 104279 respectively in the year 2014-15 from class 1 to 8. The OBC enrolment was highest than other castes and the lowest enrolment was of scheduled caste due to less population of scheduled tribes. The percentage distribution of enrolment of students from class 1 to 8 according to caste is shown in the table 2.18:

Table 2.17: Category Wise Students Enrolment in Patan District from Class 1 to 8 (2014-15)

Sr	Talukas	General Enrolment		OBC Enrolment		SC Enrolment		ST Enrolment		Total Enrolment	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	Chanasma	1589	1198	7183	5958	862	819	37	21	9671	7996
2	Harij	704	664	7676	6789	818	776	51	40	9249	8269
3	Patan	5339	4035	15619	12657	2612	2125	599	427	24169	19244
4	Saraswati	2232	2045	13372	11496	1580	1404	47	42	17231	14987
5	Radhanpur	1055	988	12824	10687	1065	889	481	367	15425	12931
6	Sami	552	498	8235	7497	614	599	38	39	9439	8633
7	Shankeshwar	508	424	5399	4698	420	443	70	2	6397	5567
8	Santalpur	1053	870	10386	9251	857	801	144	158	12440	11080
9	Sidhpur	4499	3863	10710	9645	2164	1852	244	212	17617	15572
	District	**17531**	**14585**	**91404**	**78678**	**10992**	**9708**	**1711**	**1308**	**121638**	**104279**

Source: SSA, Patan, 2014-15

Figure 2.8: Percentage Category Wise Total Enrolment of Students from Class 1 to 8



Source: SSA, Patan, 2014-15

Table 2.18: Percentage Category Wise Students Enrolment in Patan District fromClass 1 to 8 (2014-15)

Sr.	Talukas	General Enrolment		OBC Enrolment		SC Enrolment		ST Enrolment	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	Chanasma	16.4	15.0	74.3	74.5	8.9	10.2	0.4	0.3
2	Harij	7.6	8.0	83.0	82.1	8.8	9.4	0.6	0.5
3	Patan	22.1	21.0	64.6	65.8	10.8	11.0	2.5	2.2
4	Saraswati	13.0	13.6	77.6	76.7	9.2	9.4	0.3	0.3
5	Radhanpur	6.8	7.6	83.1	82.6	6.9	6.9	3.1	2.8
6	Sami	5.8	5.8	87.2	86.8	6.5	6.9	0.4	0.5
7	Shankeshwar	7.9	7.6	84.4	84.4	6.6	8.0	1.1	0.0
8	Santalpur	8.5	7.9	83.5	83.5	6.9	7.2	1.2	1.4
9	Sidhpur	25.5	24.8	60.8	61.9	12.3	11.9	1.4	1.4
	District	**14.4**	**14.0**	**75.1**	**75.4**	**9.0**	**9.3**	**1.4**	**1.3**

Source: Gujarat Council of Elementary (SSA), Gandhinagar

The table 2.18 describes the percentage enrolment of students from class 1 to 8 during the year 2014-15. Out of total enrolment of boys, the percentage of general, OBC, SC and ST boys was 14.4 percent, 75.1 percent, 9.0 percent and 1.4 percent respectively. On the other side out of total enrolment of girls, the percentage of general, OBC, SC and ST girls was 14.0 percent, 75.4 percent, 9.3 percent and 1.3 percent respectively.

The category wise total combined enrolment of students from class 1 to 8 during the year 2014-15 is shown in the figure 2.8:

The figure 2.8 illustrates that the highest enrolment of general students was found in Sidhpur taluka with 25.0 percent, enrolment of OBC students in Sami taluka with 87.1 percent, enrolment of SC students in Sidhpur taluka with 12.1 percent and enrolment of ST students in Radhanpur taluka with 3.0 percent.

2.11 Qualification of Teachers

The quality of a teacher is equally important aspect of school education. There are many indicators of quality of teachers but training is most important of them. Normally, it is expected that trained school teachers perform better than untrained school teachers. All primary and secondary school teachers were of good quality as in both the cases all the teachers were trained teachers. Similarly no rural urban differences were reported regarding the quality of teachers. The qualification of teachers is shown in the table 2.19:

The table 2.19 shows that during the year 2012-13, 435 teachers was qualified only below secondary, 3392 teachers was secondary, 2003 was higher secondary, 1050 teachers was graduate, 953 teachers was post graduated and 56 teachers was qualified upto M. Phil, PhD level and post doctoral. But during the year 2014-15, the below secondary, secondary and

higher secondary qualified teachers decreases to 286, 2824 and 1704 teachers respectively. On the other side qualified teacher's upto graduate and post graduated increases to 1261 and 171 respectively.

Table 2.19: Showing Qualification of Teachers in Patan District (2012-13 to 2014-15)

Qualification	2012-13			2013-14			2014-15		
	OP	P+UP	Total	OP	P+UP	Total	OP	P+UP	Total
Bel. Sec.	48	387	435	56	263	319	50	236	286
Sec.	267	3125	3392	306	2627	2933	296	2528	2824
Hgh. Sec.	156	1847	2003	174	1603	1777	179	1525	1704
Graduate	49	1001	1050	69	1039	1108	70	1191	1261
Po. Grad.	25	928	953	38	1092	1130	40	1318	1358
M. Phil.	0	19	19	1	27	28	0	32	32
Ph. D.	0	36	36	0	10	10	0	9	9
Po. Doct.	0	1	1	0	2	2	0	2	2
District	**545**	**7344**	**7889**	**644**	**6663**	**7307**	**635**	**6841**	**7476**

Source: Gujarat Council of Elementary (SSA), Gandhinagar

2.12 Trained Teachers at Secondary & Higher Secondary Level

The taluka wise trained teachers at secondary level are shown in the table 2.20:

Table 2.20: Taluka Wise Number of Trained Teachers at Secondary Level

Sr	Taluka	2010-11	2011-12	2012-13	2013-14	2014-15
1	Chanasma	121	119	117	147	138
2	Harij	65	63	60	74	83
3	Patan	304	301	297	407	288
4	Radhanpur	86	83	81	102	96
5	Sami	99	99	97	131	64
6	Santalpur	24	23	21	70	69
7	Sidhpur	128	126	122	-	-
	District	**827**	**814**	**795**	**931**	**738**

Source: District Education Office, Patan

The table 2.20 exhibits that during the year 2010-11, Patan had 827 trained teachers at secondary level. Among them 304 teachers was from Patan taluka and the lowest 24 teachers was from Santalpur taluka. During the year 2012-13, the trained teachers at secondary level decreases to 795 teachers. The number of trained teachers was also decreases in Patan and Santalpur taluka with 297 and 21 respectively. In 2014-15 the trained teachers decreased to 738 during the year 2014-15.

The taluka wise trained teacher at higher secondary level is shown in the table 2.21:

Table 2.21: Taluka Wise Number of Trained Teachers at Higher Secondary Level

Sr	Taluka	2010-11	2011-12	2012-13	2013-14	2014-15
1	Chanasma	60	59	61	81	99
2	Harij	21	20	20	42	45
3	Patan	143	139	142	337	84
4	Radhanpur	22	21	21	67	77
5	Sami	21	20	20	49	28
6	Santalpur	8	8	8	27	25
7	Sidhpur	54	53	54	73	88
	District	**329**	**320**	**326**	**676**	**446**

Source: District Education Office, Patan

The table 2.21 exhibits that there was 329 trained teachers at higher secondary level in Patan district during the year 2010-11. Among them 143 teachers was from Patan taluka and the lowest (8) from Santalpur taluka. During the year 2012-13 the trained teachers at higher secondary level decreases to 326 teachers. The number of trained teachers was also decreases in Patan with 142. In 2014-15 the trained teachers decreased to 446 teachers during the year 2014-15.

2.13 Bifurcation of Teachers by Management

The status of teachers in Schools at primary level in terms of school by management for the year 2013-14 is shown in the table 2.22:

Table 2.22: Bifurcation of Teachers in terms of School by Management at **Primary Level in Patan District (2014)**

Sr.	Taluka	Government Schools	Ashram Schools	Government Aided Schools	Government Unaided Schools	Total
1	Chanasma	372	6	0	27	405
2	Harij	353	2	10	0	365
3	Patan	1190	3	29	48	1270
4	Radhanpur	480	12	11	8	511
5	Sami	643	3	0	2	648
6	Santalpur	395	1	0	5	401
7	Sidhpur	536	2	0	10	548
	District	**3969**	**29**	**50**	**100**	**4148**

Source: District Education Office, Patan

The table 2.22 shows that 3969 teachers are in government schools, 29 are in ashram schools, 50 teachers are in government aided schools and 100 are in government unaided schools.The status of teachers in Schools at upper primary level in terms of school by management is shown in the table 2.23:

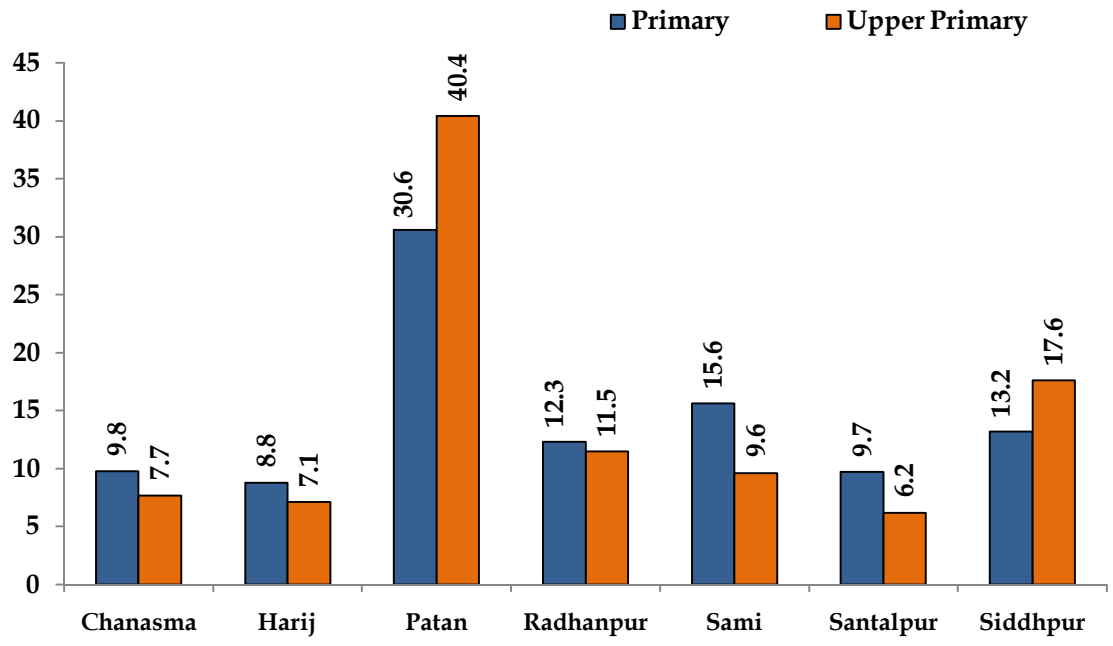
Table 2.23: Bifurcation of Teachers in terms of School by Managementat Upper Primary Level in Patan District (2014)

Sr	Taluka	Government Schools	Ashram Schools	Government Aided Schools	Government Unaided Schools	Total
1	Chanasma	201	6	17	51	275
2	Harij	186	1	11	54	252
3	Patan	747	3	31	655	1436
4	Radhanpur	229	13	6	160	408
5	Sami	286	5	0	49	340
6	Santalpur	187	1	0	32	220
7	Sidhpur	302	2	0	323	627
	District	**2138**	**31**	**65**	**1324**	**3558**

Source: District Education Office, Patan

The table 2.23 shows that 2138 teachers are in government schools, 31 are in ashram schools, 65 teachers are in government aided schools and 1324 are in government unaided schools at upper primary school.The percentage of teachers at primary and upper primary school is shown in the figure 2.9:

Figure 2.9: Percentage of Teachers at Primary and Upper Primary Level (2013-14)



Source: District Education Office, Patan

The figure 2.9 shows that the highest percentage of teachers at primary and upper primary level is found in Patan taluka with 30.6 percent at primary and 40.4 percent at upper primary level. The percent of teachers in government, ashram schools, government aided and unaided schools is shown in the figure 2.10, 2.11, 2.12 and 2.13:

Figure 2.10
Percentage of Government School Teachers

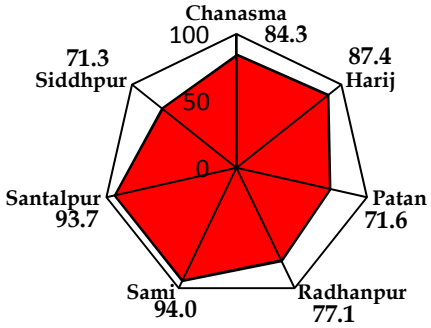


Figure 2.11
Percentage of Ashram School Teachers

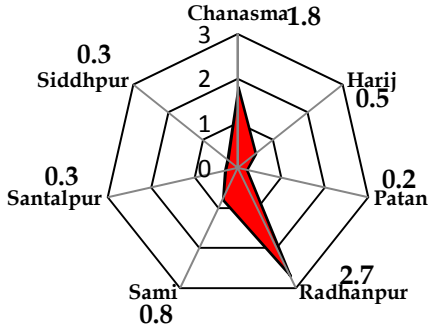


Figure 2.12
Percentage of Government Aided School Teachers

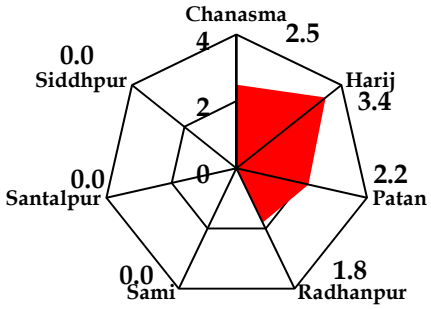
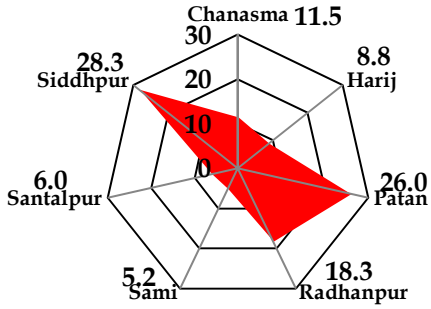


Figure 2.13
Percentage of Government Unaided School Teachers



2.14 Regular Male – Female Teachers

The regular male female teacher is shown in the table 2.24:

Table 2.24: Regular Male Female Teachers in Patan District (2014-15)

Year	Male	% of Male Teacher	Female	% of Female Teacher	Total
2007-08	3117	54.53	2599	45.47	5716
2008-09	3144	54.31	2645	45.69	5789
2009-10	3472	53.75	2988	46.25	6460
2010-11	3724	54.00	3172	46.00	6896
2011-12	3793	53.70	3270	46.30	7063
2012-13	4235	53.68	3654	46.32	7889
2013-14	3892	53.26	3415	46.74	7307
2014-15	3531	62.40	2131	37.60	5662

Source: District Education Office, Patan

The table 2.24 shows that the percentage of regular male teachers was 54.53 percent and percentage of regular female teachers was 45.47 percent during the year 2007-08. But in the year

2014-15, the percentage of male and female teachers decreased to 62.40 and 37.60 percent respectively.The taluka wise percentage of male and female teachers is shown in the table 2.25:

Table 2.25: Taluka Wise Percentage of Male and Female Teachers in Patan District (2014-15)

Sr.	Talukas	% of Male Teachers		% of Female Teachers		Total
		No.	%	No.	%	No.
1	Chanasma	349	60.9	224	39.1	573
2	Harij	332	61.7	206	38.3	538
3	Patan	366	42.1	504	57.9	870
4	Saraswati	478	67.7	228	32.3	706
5	Radhanpur	403	73.3	147	26.7	550
6	Sami	302	80.3	74	19.7	376
7	Shankeshwar	346	61.5	217	38.5	563
8	Santalpur	557	88.3	74	11.7	631
9	Sidhpur	398	46.5	457	53.5	855
	District	**3531**	**62.4**	**2131**	**37.6**	**5662**

Source: District Education Office, Patan

The table 2.25 describes that out of total teachers 62.4 percent were male teachers and 37.6 percent were female teachers. The highest percentage of male teachers was found in Santalpur taluka with 88.3 percent and it was followed by Sami taluka with 80.3 percent. The highest percentage of female teachers was found in Patan taluka with 57.9 percent and it was followed by Sidhpur taluka with 53.5 percent.

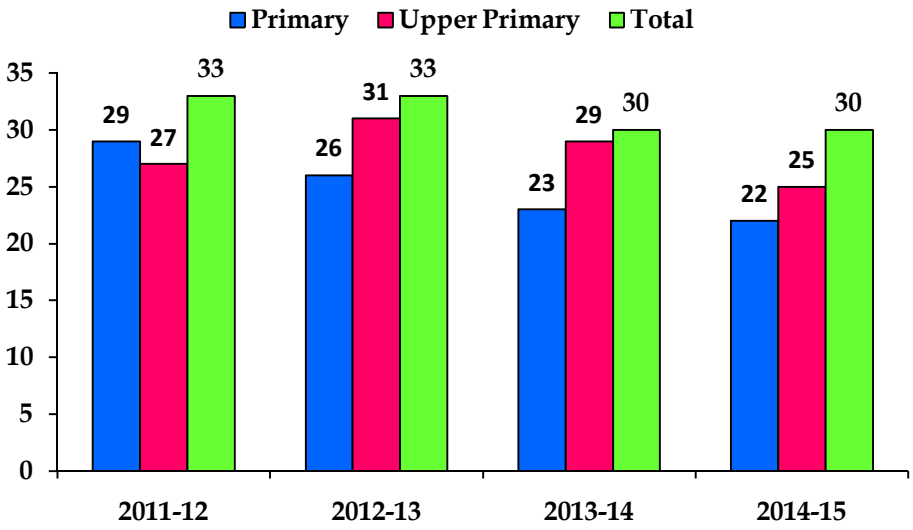
2.15 Student Classroom Ratio

The pupil-teacher ratio is the average number of pupils/students per classroom in elementary/secondary education in a given school year. Teachers are defined as persons whose professional activity involves the transmission of knowledge, attitudes, and skills that are stipulated in a formal curriculum program to students enrolled in a formal educational institution.

A high Student-classroom ratio means that each classroom is having large number of students. In other words, the higher the student classroom ratio, the lower student's relative access to proper education. However, if less, it enable the teacher to pay more attention to individual students, likely resulting in better student performance over the long run.The student classroom ratio is presented in the figure 2.14:

The figure 2.14 illustrates that student classroom ratio during the year 2011-12 was 33 but in 2014-15 it was 30. In primary class, it is 22 while in upper primary it is 25 which is relatively good for students for better access to education

Figure 2.14: Student Classroom Ratio (2011–12 to 2014-15)



Source: DISE report cards

2.16 Transition Rate

One of the important indicators on which the expansion of upper primary education depends is the transition rate from the primary to the upper primary level of education. In education the term transition typically refers to the three major transitional points in the public education system; when students move from elementary school to middle school, from middle school to high school and from high school to college. The transition rate is shown in the table 2.26:

Table 2.26: Transition Rate in Patan District (2006-07)

Year	Boys	Girls	Total
2006-07	100.62	98.96	99.83
2007-08	96.00	97.15	96.55
2008-09	92.17	93.88	93.00
2009-10	97.12	97.62	97.35
2010-11	89.76	87.22	88.62
2011-12	97.49	97.41	97.45
2012-13	98.09	95.03	96.72
2013-14	97.82	96.82	97.36
2014-15	98.08	99.14	98.57

Source: District Education Office, Patan

The table 2.26 shows as many as 98.57 percent children transited in the year 2014-15, primary to upper primary level of education compared to 97.36 in the previous year 2013-14. In 2006-07 the transition rate of boys was 100.62 percent but it decreases to 98.08 percent during the year 2014-15. On the other side the transition rate of girls was 98.96 percent in the year 2006-07 but during the year it increased to 99.14 percent.

2.17 Retention Rate

There are a number of ways through which dropout and retention rates can be measured. Retention rate is based on enrolment data over a period of five years. It is also known as survival rate. The survival rate is the percentage of a cohort of pupils enrolled in first grade of primary school in a given school year who are expected to reach a successive grade, typically fourth or fifth.

The indicator measures an education system's success in retaining students from one grade to the next, as well as its internal efficiency. Survival rate to fifth grade of primary education is of particular interest because it is commonly considered as prerequisite for sustainable literacy. Improvements in this indicator are interpreted as improvements in quality. However, this indicator does not address access issues. Countries with low enrollment rates may have high survival rates. If the goal is to increase access to quality education, this indicator should be used in conjunction with indicators of intake or enrolment rate.

This indicator is typically estimated based on enrollment and repetition by grade for two consecutive years, using a procedure called the reconstructed cohort method. A cohort's flow is constructed beginning in year one and assuming the existing pattern of repetition and enrollment by grade will carry forward. The survival rate to a particular grade is the percentage of the cohort that reaches the specified grade. When estimated from household survey data, the proportion is estimated as the product of the proportions of transition for each grade up to the given grade.The retention rate at primary level 1 to 5 std. and 1 to 7 std. is presented in the table 2.27:

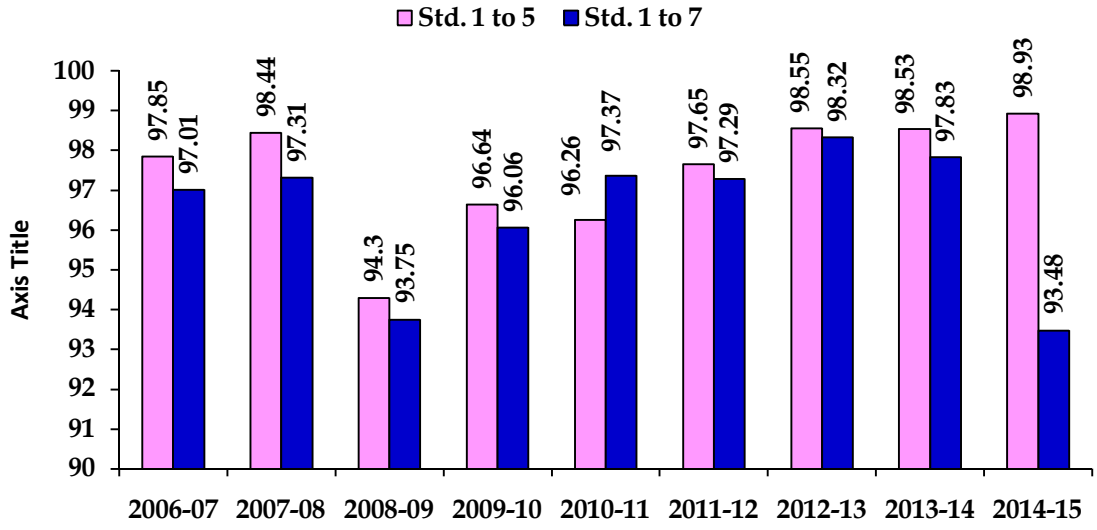
Table 2.27: Retention Rate (Primary Level) at Std. 1 to 5 and Std. 1 to 7(2006-07 & 20014-15)

Year	Std. 1 to 5			Std. 1 to 7		
	Boys	Girls	Total	Boys	Girls	Total
2006-07	97.59	98.14	97.85	97.07	96.94	97.01
2007-08	98.40	98.49	98.44	97.44	97.16	97.31
2008-09	94.69	93.83	94.30	94.38	92.97	93.75
2009-10	97.31	95.84	96.64	97.29	95.17	96.06
2010-11	97.01	95.37	96.26	97.89	96.74	97.37
2011-12	97.94	97.34	97.65	97.80	96.69	97.29
2012-13	99.05	97.96	98.55	98.99	97.46	98.32
2013-14	98.64	98.40	98.53	98.40	97.30	97.83
2014-15	98.99	98.86	98.93	93.82	93.13	93.48

Source: District Education Office, Patan

The table 2.27 shows a gradual improvement from 97.85 percent in the year 2006-07 to 98.93 percent in 2014-15 but the retention rate at 1 to 7th std. decreases from 97.01 percent in 2006-07 to 93.48 percent in the year 2014-15. The retention rate at std. 1 to 5 and std. 1 to 7 is presented in the figure 2.15:

Figure 2.15: Retention Rate at Std. 1 to 5 and Std. 1 to 7 in Patan District (2006-07 to 2014-15)



Source: District Education Office, Patan

The figure 2.15 illustrates the trend of retention rate at Std.1 to 5 and at Std. 1 to 7 in Patan district from 2006-07 to 2014-15. It seems ups and down in retention rate. The retention rate at std. 1 to 5 is increased to 98.9 in the year 2014-15 from 97.9 in the year 2006-07. But the retention rate at std. 1 to 7 is decreased to 93.5 in the year 2014-15 from 97.0 in the year 2006-07.

2.18 Repetition Rate

Repetition rate is the proportion of pupils from a cohort enrolled in a given grade who are enrolled in the same grade in the following school year. The repetition rate serves a number of purposes. It is commonly used as a measure of the internal efficiency of educational systems. Repetition rates ideally should approach zero percent—a high repetition rate reveals problems in the internal efficiency. In addition, it is one of the key indicators for analyzing and projecting pupil flows from grade to grade within the educational cycle. When compared across grades, the patterns can indicate specific grades for which there is higher repetition, hence requiring more in depth study of causes and possible remedies. Finally, increasing repetition rates serve as an early warning that the system is experiencing major capacity constraints.The repetition rate in Patan district for the year 2006-07 to 2013-14 is presented in the table 2.28:

Table 2.28: Repetition Rate in Patan District (2006-07 to 2013-14)

Year	Boys	Girls	Total
2006-07	16.78	16.7	16.74
2007-08	15.12	14.53	14.85
2008-09	13.64	15.07	14.29
2009-10	13.11	13.51	13.29
2010-11	16.55	16.18	16.38
2011-12	13.15	13.23	13.19
2012-13	5.96	5.77	5.87
2013-14	0.23	0.2	0.22

Source: District Education Office, Patan

The table 2.28 shows that the great differences in repetition rate from 2006-07 to 2013-14.During the year the repetition rate was 16.74 percent but as compared to the year 2013-14, it was only 0.22 percent. The repetition rate between boys and girls has no significant differences. As compared to previous year the repetition rate of boys was 0.23 percent in 2013-14 but it was 5.96 percent in 2006-07. The same differences can be noticed in the repetition rate of girls.

2.19 Promotion Rate

The promotion rate have been computed separately for boys and girls and presented in the table 2.29:

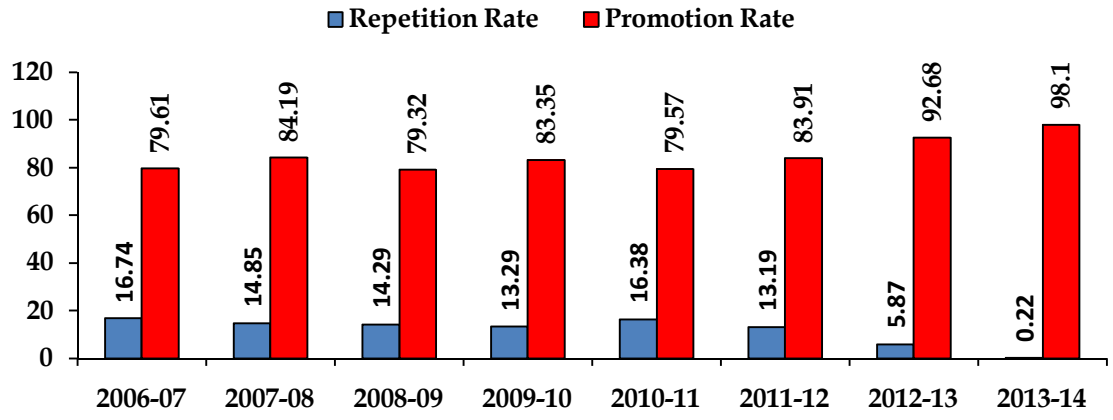
Table 2.29: Promotion Rate in Patan District (2006-07 to 2014-15)

Year	Boys	Girls	Total
2006-07	80.14	78.99	79.61
2007-08	87.82	79.99	84.19
2008-09	80.55	77.84	79.32
2009-10	84.21	82.32	83.35
2010-11	79.65	79.47	79.57
2011-12	85.01	82.61	83.91
2012-13	93.1	92.2	92.68
2013-14	98.27	97.9	98.1
2014-15	99.18	99.63	99.39

Source: District Education Office, Patan

The table 2.29 shows that the promotion rate was 79.61 percent during the year 2006-07 but in the year 2014-15 it increased to 99.39 percent. The promotional rate was higher in 2014-15 than the previous year 2013-14 (98.1 percent). The difference between promotional rates of boys and girls is not much noticed. The repetition rate and promotion rate for the year 2006-07 to 2013-14 is presented in the figure 2.16:

Figure 2.16: Repetition Rate and Promotional Rate (2006-07 to 2013-14)



Source: District Education Office, Patan

The figure 2.16 illustrates the trend of repetition and promotional rate from the year 2006-07 to 2013-14 in the Patan district. The repetition rate decreased from 16.7 in the year 2006-07 to 0.2 in

the year 2013-14. On the other side the promotional rate increased to 98.1 in the year 2013-14 from 79.6 in the year 2006-07.

2.20 Dropout Rate

The dropout rate in primary classes is still high to attain the status of universal retention at the primary level of education. The dropout rate for class 1 to 5 and class 1 to 7 is presented in the table 2.30:

Table 2.30: Dropout Rate at Std. 1 to 5 and Std. 1 to 7 (2009-10 to 2014-15)

Year	Std. 1 to 5			Std. 1 to 7		
	Boys	Girls	Total	Boys	Girls	Total
2009-10	2.69	4.16	3.36	2.71	4.83	3.94
2010-11	2.99	4.63	3.74	2.11	3.26	2.63
2011-12	2.06	2.66	2.35	2.20	3.31	2.71
2012-13	0.95	2.04	1.45	1.01	2.54	1.68
2013-14	1.36	1.60	1.47	1.60	2.70	2.17
2014-15	1.01	1.14	1.08	6.18	6.87	6.53

Source: District Education Office, Patan

The table 2.30 indicates that the dropout rate for std. 1 to 5 was 3.36 percent during the year 2009-10 and it decreased to 1.08 in the year 2014-15. On the other side the dropout rate for std. 1 to 7 was 3.94 during the year 2009-10 but it increased to 6.53 percent in the year 2014-15.

2.21 Gross Enrolment Ratio (GER) and Net Enrolment Ratio (NER)

Gross enrollment rate is the total enrollment in primary school, regardless of age, in a given year, expressed as a percentage of the official school-age population for primary school.The gross enrollment rate shows the general level of participation in formal schooling by the childhood population. A gross enrollment rate value of 100 percent indicates that a country is, in principle, able to accommodate all of its school-aged population.

The net primary enrollment rate is the ratio of official school-age children enrolled in primary school to the total population of children of official primary school age, as defined by the national education system.The net primary enrollment rate shows the proportion of children of primary school age who are enrolled in primary school. Net enrollment refers only to children of official school age, while gross enrollment includes children of any age. Net primary enrollment rates below 100 percent provide a measure of school-age children who are not enrolled at the primary level. This difference does not necessarily indicate the percentage of students who are not enrolled, since some children might be enrolled at other levels of education.

The gross enrolment ratio and net enrolment ratio of Patan district from 2006-07 to 2014-15 is shown in the table 2.31:

Table 2.31: Gross Enrolment Ratio & Net Enrolment Ratio in Patan district (2006-07 to 2014-15)

Year	Gross Enrolment Ratio			Net Enrolment Ratio		
	Boys	Girls	Total	Boys	Girls	Total
2006-07	107.63	103.23	105.43	97.10	95.33	96.22
2007-08	109.91	109.91	109.91	93.86	93.86	93.80
2008-09	101.98	102.87	102.43	98.94	98.94	98.94
2009-10	98.79	96.82	97.80	97.20	96.04	96.62
2010-11	101.47	99.45	100.46	97.22	95.28	96.25
2011-12	99.16	98.32	98.74	90.55	90.67	90.61
2012-13	103.21	100.03	101.62	99.25	98.42	98.84
2013-14	99.55	99.24	99.41	98.00	96.39	97.19
2014-15	101.61	100.85	101.23	98.49	97.74	98.11

Source: District Education Office, Patan

The table 2.31 describes that during the year 2006-07 gross enrolment ratio was 105.43 percent but in the year 2014-15 it was 101.23 percent. In the year 2006-07 the gross enrolment ratio for boys and girls was 107.63 and 103.23 percent respectively. But in the year 2014-15 the gross enrolment ratio for boys and girls decreased to 101.61 and 100.85 percent respectively.On the other side the net enrolment ratio was 96.22 percent during the year 2006-07 but in 2014-15 it increased to 98.11 percent.

2.22 Physical Amenities in Primary Schools

The physical amenities available in primary schools are presented in the table 2.32:

Table 2.32: Physical Amenities available at Primary Schools (2014-15)

Sr	Taluka	Total Schools (std. 1-8)	Electricity (std. 1-8)	Compound Wall (std. 1-8)	Play Ground (std. 1-8)	Total Schools (std. 5-8)	Computer Lab (std. 5-8)
1	Chanasma	96	96	95	79	67	66
2	Harij	81	81	79	51	58	44
3	Patan	157	157	153	126	75	70
4	Radhanpur	121	121	114	83	72	47
5	Sami	82	82	81	54	70	59
6	Santalpur	105	105	104	96	79	73
7	Saraswati	161	161	159	105	95	72
8	Shankeshwar	48	48	48	31	43	33
9	Sidhpur	111	111	110	88	79	73
	District	**962**	**962**	**943**	**713**	**638**	**537**

Source: DISE

The table 2.32 shows that out of 962 schools (having standards 1 to 8) all the 962 schools have electricity facility, 943 schools have compound wall and 713 schools have playground. While from 638 schools with std 5 to 8, around 537 schools have computer lab. The percentage share of school amenities is presented in the table 2.33:

Table 2.33: Physical amenities avalaible at primary Schools (2014-15) (in %)

Sr	Taluka	Electricity (std. 1-8)	Compound Wall (std. 1-8)	Play Ground (std. 1-8)	Schools with Toilet (std. 1-8)	Schools with Separate Girl's Toilet (std. 1-8)	Computer Lab (std. 5-8)
1	Chanasma	100	98.96	82.29	100	100	98.51
2	Harij	100	97.53	62.96	100	100	75.86
3	Patan	100	97.45	80.25	100	100	93.33
4	Radhanpur	100	94.21	68.6	100	100	65.28
5	Sami	100	98.78	65.85	100	100	84.29
6	Santalpur	100	99.05	91.43	100	100	92.41
7	Saraswati	100	98.76	65.22	100	100	75.79
8	Shankeshwar	100	100	64.58	100	100	76.74
9	Sidhpur	100	99.1	79.28	100	100	92.41
	District	**100**	**98.02**	**74.12**	**100**	**100**	**84.17**

Source: DISE

The table 2.33 shows that electricity is available in 100.00 percent schools, compound wall in 98.02 percent and play ground is available in only 74.12 percent schools during the year 2014-15. While in 84.17 percent schools (having standard 5 to 8) there is facility of computer lab. The table also states that all the schools have toilet facility and as well as separate girl's toilet facility.

2.23 Results of Various Examinations

The number of students appeared and qualified in various examinations is shown in the table 2.34:

Table 2.34: Number of Students Appeared and Qualified in Various Examinations

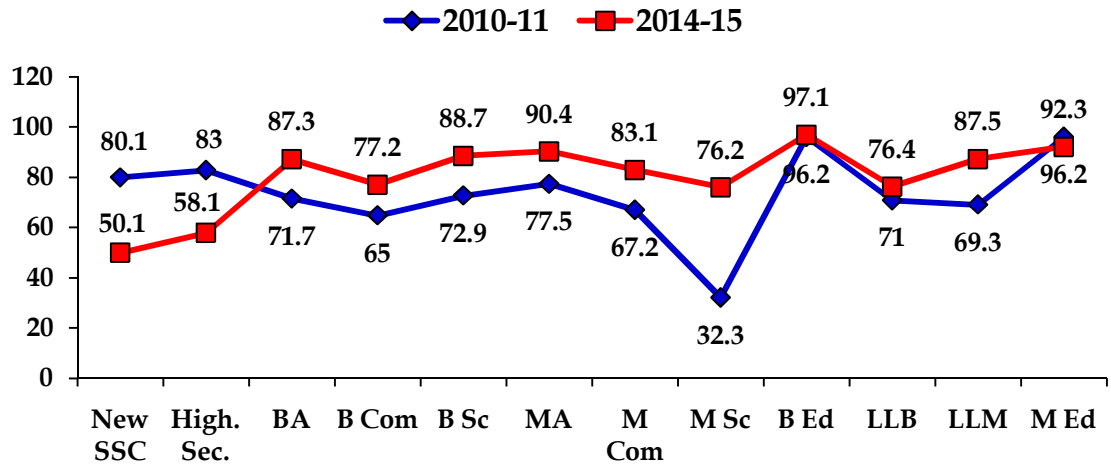
Sr	Examination	2010-11			2014-15		
		Appeared	Qualified	%	Appeared	Qualified	%
1	New SSC	17728	14197	80.1	22151	11097	50.1
2	High. Sec.	8826	7322	83.0	14344	8328	58.1
3	BA	48647	34874	71.7	18527	16180	87.3
4	B Com	10716	6965	65.0	4505	3476	77.2
5	B Sc	5529	4030	72.9	2104	1867	88.7
6	MA	13994	10840	77.5	4581	4141	90.4
7	M Com	1586	1065	67.2	847	704	83.1
8	M Sc	1123	363	32.3	529	403	76.2
9	B Ed	7696	7404	96.2	6396	6210	97.1
10	LLB	1762	1251	71.0	628	480	76.4
11	LLM	75	52	69.3	24	21	87.5
12	M Ed	740	712	96.2	651	601	92.3
	Total	**118422**	**89075**	**75.2**	**75287**	**53508**	**71.1**

Source: District Statistical Outline, 2010-11 & 2014-15

The table 2.34 describes that 118422 students appeared in various examination during the year 2010-11. Among them 89075 students was qualified which is the 75.2 percent of total students. But in 2014-15, 75287 students were appeared in various examinations and among them 53508 students were qualified which is 71.1 percent of total students. This shows the falling down the results in various examinations.

The table 2.34 also reveals that the highest percent of qualified students was found in B. Ed examination which is 96.2 percent in 2010-11 and during the year 2014-15 it was increased to 97.1 percent.The percentage of qualified students in various examinations is shown in the figure 2.17:

Figure 2.17: Percentage of Students Qualified in Various Examinations



The figure 2.17 illustrates the percentage of qualified students in various examinations in the year 2010-11 and 2014-15. In the both year the percentage of qualified students gets increased in all the examinations. Only the number of qualified students decreased in the SSC, Higher Secondary and M Ed. Examinations with 50.1 percent, 58.1 percent and 96.2 percent respectively in the year 2014-15 from 80.1 percent, 83.0 percent and 96.2 percent respectively in the year 2010-11.

2.24 Government Initiatives

It is necessary to lay emphasis on education for improving standard of living of the people of any nation. Due to education, other sectors like health, employment, child development, women's development etc. are also developed. In view of multiple benefits of the education, the investment made in this sector, are having capacity of giving manifold compensation. Education not only improves the standard of living of people but also provides opportunities of progress.

The state government has given priority to primary education. Primary education is the foundation of pyramid of education. It is the responsibility of state government to give free and compulsory education to all the children of 6 to 14 years age group. More emphasis is given on admission and retention schemes of primary education.

Guardian Education Board, Mother Education Board and Village Education Committee have been constituted in whole state. People's participation has increased by the programmes like Shala Praveshotsava, Kanya Kelvani Mahotsava. Further incentives schemes like Sarva Siksha Abhiyan, Kasturba Gandhi Balika Vidyalaya, Vidyadeep Insurance Scheme, Vidyalaxmi Bond Scheme, Distribution of Books Free of Cost, Vanche Gujarat, ICT @ School have been implemented successfully. In the state to improve the physical facilities and environment in the school, schemes like special helping schools and seasonal hostels for the children of Agaria and others, model schools, computerization project, compound wall have been started.

Some of the government initiatives taken in Patan district has been discussed below:

1. Vidyalaxmi Bond Scheme

With a purpose to encourage girl's education, "Vidyalaxmi Bond Scheme" has been implemented in primary school since the year 2002-03. Under this scheme, in the rural and urban area where the literacy rate is less than 35 percent, the girls admitted in first standard of that rural and urban area will be given bond of Rs. 2000 which is admissible after completing the education of standard VII.The physical achievement under the scheme is shown in the table 2.35:

The table 2.35 represents that during the year 2010-11, total 276 students was enrolled under the scheme and 5,52,000 Rs. expenditure was occurred while in the year 2014-15, the number of bonds were increased to 456 and the expenditure increased to9,12,000 Rs. under the Vidyalaxmi Bond Scheme.

Table 2.35: Physical Achievement under Vidyalaxmi Bond Scheme

Year	No. of Bonds	Amount of Bond @ 2000 Rs.
2010-11	276	5,52,000/-
2011-12	1442	28,84,000/-
2012-13	549	10,98,000/-
2013-14	317	6,34,000/-
2014-15	456	9,12,000/-

Source: District Education Officer, Patan

2. Vidyadeep Insurance Scheme

The state government has introduced "Vidyadeep Insurance Scheme" to provide insurance coverage for accidental death of students studying in primary schools. Government has decided to provide insurance coverage under the scheme in 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. Insurance has been increased to Rs. 50000 from 25000 Rs. All the students of primary schools or ashram shalas have been covered under the scheme. The information related to Vidyadeep Insurance Scheme is presented in the table 2.36:

Table 2.36: Vidyadeep Insurance Scheme

Sr.	Year	Application Received	Granted	In Process
1	2011	2	2	-
2	2012	7	7	-
3	2013	5	5	-
4	2014	4	4	-
5	2015	4	2	3
	Total	**22**	**20**	**3**

Source: District Education Officer, Patan

The table 2.36 shows that 22 applications received under the Vidyadeep Insurance scheme from 2011 to 2015. Out of this 20 insurance were granted and 2 applications were in process.

3. Model School Scheme

The Model School Scheme is aimed at providing very high quality of education in the uncovered areas of the State. These Schools are expected to develop students having all round personality with excellent scholastic records, which shall be measured in terms of pre-defined learning outcomes and key performance indicators. Student based annuity will be linked with a Model School achieving these parameters. This scheme is implemented by the both central and state government with 75:25 partnerships. Under the scheme total 5 model schools are developed in Patan district at Vagod, Harij, Sami, Radhanpur and Santalpur.

The scheme has the following objectives:

- To have at least one good quality senior secondary school in every block.
- To have a pace setting role
- To try out innovative curriculum and pedagogy
- To be a model in infrastructure, curriculum, evaluation and school governance

Facilities in Model Schools

- Mixed school from Standard 6 to 12,
- Facility of food and snackes in the interval for the students of Std. 6, 7 and Std. 9, 10
- One big hall with 40 students capacity, computer lab, science laboratory, library, support room, girl's room, principal office, staff room, administration office, separate toilets for boys and girls
- Trained teachers for Maths, Science, English, Social Science and Language
- Full time trained teacher for computer lab with internet connectivity
- Fully equipped library with life utility books
- Play ground of 20000 Sq.M.

Area for Construction of Building

The area of construction of building under the scheme is presented in the table 2.37:

Table 2.37: Area for Construction of Building

Sr.	Floor	Area
1	Ground Floor	1425.60 Sq. M
2	First Floor	1425.60 Sq. M
3	Stair Cabin	18.80 Sq. M
	Total	**2870.00 Sq. M**

Source: District Education Officer, Patan

Provision for Construction of Building

- 12 class rooms on ground floor, computer room, workshop, staff room, office room and construction of principal room
- 1 class room on first floor, maths room, arts room, laboratory – 3 (Biology, Chemistry, Physics), library, examination section, computer room, NCC – scout guide room, general store, activity room and construction of rooms for students.

4. ICT @ Schools Scheme

ICT in school (Information and Communication Technology in Schools) scheme was implemented in 2007-08 for computer training and training from computers. In the first and second stage of scheme, total 150 schools Patan district were provided facilities mentioned in the table 2.38:

Table 2.38: Facilities Provided to Schools under ICT @ Schools Scheme

Sr	Details	Per School
1	Computer with 17″ LED Monitor	10
2	Computer with 17″ LED Monitor & 42″ LCD Monitor & VGA Splitter	1
3	KU Band Dish Antena	1
4	A4 Size Scanner	1
5	Dot Matrix Printer	1
6	600 VA Line Interactive UPS	11
7	16 Port Switches with Line Cabling and Electrification	1
8	Plastic Model Chair	30
9	Computer Table	13

Source: District Education Officer, Patan

The detail of schools under ICT @ Scheme is shown in the table 2.39:

Table 2.39: Details of Schools under ICT @ Scheme

	Government Schools	Sanskrit Schools	Model Schools	Granted Schools	Total Schools
First Stage	02	01	-	84	87
Second Stage	03	-	01	59	63
Total	**05**	**01**	**01**	**143**	**150**

Source: District Education Officer, Patan

The ICT @ Scheme is implementing successfully.

5. Distribution of Cost Free Text Books Reports

Under the state government scheme "Indian Scheme" cost free text books was distributed to the students of government and granted schools. The physical achievement of the scheme is shown in the table 2.40:

Table 2.40: Number of Books Approved and Distributed to Students

Year	Standard	Number of Books Approved	Number of Books Distributed to Students
2010-11	8	260793	260793
	9	8925	8925
	10	6450	6450
	11	10710	10710
	12	12600	12600
	Total	**299478**	**299478**
2011-12	8	242294	242294
	9	8925	8925
	10	6450	6450
	11	9450	9450
	12	12600	12600
	Total	**279719**	**279719**
2012-13	9	7155	7155
	10	3500	3500
	11	12600	12600
	12	12600	12600
	Total	**35855**	**35855**
2013-14	9	70857	70857
	10	36100	36100
	11	24353	24353
	12	24629	24629
	Total	**155939**	**155939**
2014-15	9	141957	141957
	10	69045	69045
	11	34500	34500
	12	32528	32528
	Total	**278030**	**278030**

Source: District Education Officer, Patan

2.25 SWOC Analysis

The SWOC analysis of education sector in Patan district is presented in the box 2.4:

Strength	Weakness
• Literacy Rate of Patan District was 60.4% in 2001 which has been increased to 72.3% in 2011. There is an increase of 11.9%. • SC & ST Literacy rate have also been increased in Patan District. • Number of students in Primary, Higher Secondary Schools & colleges has increased in last five years. • Percentage of female teachers in Patan & Sidhpur Taluka is higher than the Male teachers in Patan & Sidhpur Talukas. • 100% of schools in all the talukas of Patan District are Electrified. • 100% of schools have Separate girl's Toilet. • Increase in Incentives (Distribution of cost free text books) to the students during last Five years.	• Wide literacy Gap between male & female literacy as well as social groups persist in Patan District. • Elementary Enrolment of girls in schools has decreased in year: 2014 – 15. • Percentage of female teachers in Chanasma, Harij, Saraswati, Radhanpur, Sami, Sankheshwar & Santalpur Talukas of Patan District is lower than Male teachers. • Percentage of students appeared & qualified in SSC & HSC has decreased in last five years. • Only 47.51% of schools have computer lab facility in Patan District. • Nearly 15% or more schools require play ground in Patan District. • Dropout rate of Boys & Girls (Std. 1 to 7) has been increased in last three years.
SWOC ANALYSIS	
• Recruitment of full time teachers (not contractual) in priority talukas facing teachers' retention problem. • School monitoring committees need to be strengthened and the PRIs should be involved in monitoring the school education. • Continuous professional development and school inspection are helping teachers to handle large classes. • Initiating of Secondary and Higher Secondary schools in Patan District for better excess of higher education. • Free transport (ST Bus Concession Pass) can be joined with Vidya Laxmi Bond Scheme to ensure the enrolment of girls is not cancelled after receiving the benefit of Vidya Laxmi Bond Scheme.	• Major challenge to retain the teachers employed on contract basis as such teachers are in search of full time jobs. • Decline in the trend of Vidya Laxmi Bond Scheme beneficiaries in the Year: 2014-15. • More focus should be given on reducing dropout rate among girls after standard 8th. • Major challenge to achieve SCR & PTR in priority talukas as per model school Criteria.
Opportunity	**Challenges**

OOOO

CHAPTER - III

Health and Nutrition

Facts

Birth Rate (Per 1000 Population)	2013	25.2
Death Rate (Per 1000 Population)	2013	5.0
Infant Mortality Rate (IMR) (Per 1000 live births)	2013	28.0
Children fully immunized %	2013-14	87.4
Total Number of PHCs	2013-14	35
Total Number of CHCs	2013-14	15
Total Number of Sub Centers	2013-14	210
Number of District Hospital	2013-14	1

Chapter 3

Health and Nutrition

3.1 Introduction

Since the Alma-Ata Conference of 1978, which declared health as a fundamental human right, health and nutrition have been accepted as important national concerns in the developing countries. In the Indian federal system, health is the concern of state governments, though some of the important health programmes are funded by the central government.

Health policies in developing countries, including India, have focused on the issues related to population growth, common diseases, nutrition, disability, newly emerging diseases such as AIDS, occupational diseases, mental diseases, and so on. Reducing population growth rates continues to be a very important goal of the health sector owing to the high fertility rates in many states. Malaria, tuberculosis, waterborne diseases, respiratory diseases, and diseases related to mal and under-nutrition continue to trouble the population. Nutritional deficiencies among women, children and the poor; particularly deficiencies of basic minerals, some vitamins, and proteins resulting in stunted growth of women and children, is a major concern. New health problems have emerged. For example, AIDS has become a threatening disease with its high incidence among migrants, particularly among single male migrants and circular migrants.

There are new challenges because of environmental pollution and increased exposure to toxic substances in everyday life. Increasing urbanization has thrown up new health challenges emanating from dense living conditions. Health is important for human welfare. As a Gujarati proverb says “the first happiness is health, the second is a full stomach”. One can’t enjoy food if one is not healthy (of course, one cannot be healthy if one doesn’t have enough food). To lead a productive life, one needs good health. As Viner (1953) observed “the first requirement of high labour productivity under modern conditions are that the masses of the population should be literate, healthy and sufficiently well-fed to be strong and energetic. Health, like education, is desirable in itself.

3.2 Importance of Health

Health is defined by the World Health Organization (WHO) as "a state of complete physical, mental, and social well-being and not merely absence of disease or infirmity." This definition was accepted by all the signatories to the Alma Ata Declaration on health adopted by the Thirty-first World Health Assembly in 1978. This declaration gave the call of 'Health for All by 2000 AD' and accepted that primary health care was a key to attaining this goal. The purpose of this definition was to bring the positive concept of general well-being into focus rather than a negative definition of absence of disease.

The human development concept of UNDP is based on the ethics of life claims. Good health is towards universalization of life claims (UNDP 1995). 'Health is wealth' goes the old saying in India. At the Alma Ata Conference the joint report of the Director - General of WHO and the Executive Director of UNICEF stated. "…health systems are all too often being devised outside

the mainstream of social and economic development. These systems frequently restrict themselves to medical care, although industrialization and deliberate alteration of the environment are creating health problems whose proper control lies far beyond the scope of medical care." (Tejada-de-Rivero 1981: 35). Keeping this in mind this report discusses the impact of macro level issues on health.

Health is important in three distinct ways: (a) it has intrinsic importance, (b) it has an instrumental importance at personal and social levels, and (c) it promotes empowerment of people. In the intrinsic sense health is important, because it is a direct measure of human wellbeing. It is a fulfillment of life. Being healthy is a valuable achievement in itself. The 'basic needs approach' considers health as a basic need along with food, clothing, shelter, and education. Starting with Pigou, the basic needs approach is utilitarian, "because and only because fulfillment" of basic needs "contributes to utility" (Sen 1985: 25). Sen, however, disagrees with this utilitarian approach. He argues that, "value of the living standard lies in the living" (1985, 25) and better health is better living. Health is important because it is better living and not because it is an instrument for better living or has a utility.

Better health can have interpersonal benefits. There are many externalities of morbidity. Continuous illness in a family can stifle the options for a family. More often than not, it is the woman, who is socially obliged to take the responsibility of a sick person in a family patriarchal. In the instrumental sense, good health has an economic rationale. It leads to reduced medical costs of the government and households. However, the public sector expenditure more on preventive health, the household sector expenditures less on curative health.

Ill health may lead to loss of income for poor families subsisting on daily income. This may push the family to hunger and malnutrition. It may also increase the debt burden of the family, which in turn can lead to distress selling of their assets. The limited budget of the family is usually spent on the treatment of male members neglecting female child and adult females. Improvement in health leads to gains in worker productivity. A healthy worker works more and increases the household income as well as GNP.

BOX 3.1
Factors Affecting Health Status

- *Health status is an outcome of a large number of factors*
- *Poverty, food security, food pricing and malnutrition*
- *Environmental pollution and degradation*
- *Occupational health problems Reproductive health problems*
- *Household economy and wages*
- *Economic development; represented by per capita income, urbanization and industrialization*
- *Social development; especially literacy rates*
- *Prices of private health care system*
- *Public health care delivery system.*

Better health status of the population also leads to reduced mortality and higher life expectancy. It leads to decline in infant and child mortality. With increase in chances of child survival, fertility rates tend to decline, which leads to lowering down of population growth rates. Thus, better health status leads to demographic transition steadying the population growth rate essential for sustainable development. Health therefore has many instrumental roles at personal and social level. In the case of children, better health leads to better attendance in school and to higher level of knowledge attainment, which leads to better paid jobs and larger benefits to future generations. Nutritional deficiency in children, on the other hand, leads to irreversible and long-term disabilities such as blindness, reduction in cognitive functions, mental retardation, etc.

Sickness or ill-health imposes a burden on other members of the family and also on society. Absenteeism from work, on account of ill-health, can result in a loss of production and productivity. Thus, to emerge as a wealthy nation, a healthy society is desirable. Health, however, cannot be ensured simply by individual efforts. Social action is needed for sanitation, water supply, clean air, waste disposal and an environment which does not breed diseases or result in epidemics. Public policy and action is critical in ensuring adequate infrastructure and follow-up for a healthy society. Factors affecting health status is illustrated in box 3.1:

3.3 Birth and Death Rate

The health status is generally measured in terms of life expectancy at birth, infant mortality rate, fertility rate, crude birth rate and crude death rate. The indicators of health status, the birth and death rates are more reflective of the demographic changes, taking place in the country. The life expectancy rate and the infant mortality rates are better indicators of health status of the population.

The Crude Birth Rate (CBR) and Crude Death Rate (CDR) are statistical values that can be utilized to measure the growth or decline of a population.
The crude birth rate and crude death rate are both measured by the rate of births or deaths respectively among a population of 1000. The CBR and CDR are determined by taking the total number of births and deaths in a population and dividing both values by a number to obtain the rate per 10000.The crude birth rate and crude death rate of Patan district is presented in the table 3.1:

Table 3.1: Crude Birth Rate and Crude Death Rate in Patan District (2013)

	Crude Birth Rate	Crude Death Rate
Patan District	25.2	5.0
Gujarat	20.8	5.6

Source: CRS – 2011, Gujarat

The table 3.1 reveals that crude birth rate of Patan district is 25.2 in the year 2011, which is high than the whole state i.e. 20.8. On the other side crude death rate of district is little low (5.0) than the whole state which is 5.6 in the year 2011.

The health care delivery system in Gujarat is presented in the box 3.2:

BOX 3.2: Health Care Delivery System in Gujarat

The health care delivery in Gujarat is organized in a three tier system: (i) At the primary level, there are primary health centers (PHCs) and sub-centers. (ii) At the intermediate level, there are community health centers (CHCs), taluka hospitals, and district hospitals. About 3-4 PHCs are affiliated to CHCs. It has been planned to develop CHCs as a first referral units (FRU), because they are scattered all over the state and can provide hospital services at the doorstep of the patient. Almost all CHCs are located in taluka headquarters or other important towns of a taluka. There is at least one operational hospital in each district headquarters. (iii) The tertiary or referral level facilities are affiliated to medical colleges and specialized hospitals.

Norms for health facilities are:

PHC	*all areas*	*one per 30,000 population*
PHC	*tribal, hilly & inaccessible areas*	*one per 20,000 population*
Sub-Centre	*all areas*	*one per 5,000 population*
Sub-Centre	*tribal, hilly & inaccessible*	*one per 3,000 population*
CHC	*areas all areas*	*one per 100,000 population*

Source: Health and Family Welfare Department (1998).

3.4 Health Infrastructure in Patan District

Physical health of the population is one of the important indicators of development. The health of the population, however, is determined by the level of medical infrastructure as well as the number of doctors, health workers per unit of population; of course, apart from the nutritional standards of food intake, type of environment etc. In this regard, analysis of health services related to infrastructure becomes important from the planning point of view. The taluka wise health infrastructure in Patan district is presented in the table 3.2:

Table 3.2: Health Infrastructure Facility (2014-15)

Sr	Taluka	SC	PHCs	CHCs	MC	DH	SDH	MH	AH	AD	HD	AC
1	Chanasma	27	6	2	0	0	0	0	0	3	0	180
2	Harij	18	3	1	0	0	0	0	0	1	0	106
3	Patan	24	5	1	1	1	0	0	1	5	2	222
4	Saraswati	30	6	3	0	0	0	0	0	0	0	194
5	Radhanpur	27	3	1	0	0	0	0	0	1	1	139
6	Sami	19	3	1	0	0	0	0	0	1	1	120
7	Shankheswar	14	3	1	0	0	0	0	0	2	0	104
8	Santalpur	28	4	2	0	0	0	0	0	1	0	160
9	Sidhpur	23	5	3	0	0	1	0	1	4	1	200
	District	**210**	**38**	**15**	**1**	**1**	**1**	**0**	**2**	**18**	**5**	**1425**

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

Note - SC: Sub Centers, DH: District Hospital, AD: Ayurvedic Dispensaries, PHCs: Primary Health Centers, SDH: Sub-District Hospital,HD: Homeopathic Dispensaries, CHCs: Community Health Centers, MH: Mental Hospital, AC: Anganwadies Centers, MC: Medical College, AH: Ayurvedic Hospital

The table 3.2 shows that 210 sub centers, 38 public health centers and 15 community centers are running in the Patan district. These are the important health services providing medical facilities in the rural areas. Although many private practitioners have also started operating in rural areas, yet their number is relatively small and they are located mainly in the main business centers.The table 3.2 also shows that 1 medical college, 1 district hospital, 2 ayurvedic hospital, 18 ayurvedic dispensaries, 5 homeopathic dispensaries and 1425 anganwadi centers are also running in Patan district.The taluka wise medical institutions and number of beds is presented in the table 3.3:

Table 3.3: Medical Institutions and Number of Beds (2010-11 & 2014-15) ***(in Nos.)***

Sr	Taluka	2010-11			2014-15		
		Hospitals	Dispensaries	Beds	Hospitals	Dispensaries	Beds
1	Chanasma	6	3	84	8	3	96
2	Harij	3	1	42	4	1	48
3	Patan	13	7	500	10	7	920
4	Saraswati	-	-	-	9	0	126
5	Radhanpur	4	2	94	5	2	118
6	Sami	2	2	90	4	2	72
7	Shankheswar	-	-	-	4	2	48
8	Santalpur	6	1	78	6	1	84
9	Sidhpur	5	5	260	10	5	280
	District	**39**	**21**	**1148**	**60**	**23**	**1792**

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

The table 3.3 illustrates that during the year 2010-11, there was 39 hospitals and 21 dispensaries in Patan district with 1148 beds whereas 60 hospitals and 23 dispensaries was running during the year 2014-15 with 1792 beds in hospitals.The beds per thousand of population are shown in the table 3.4:

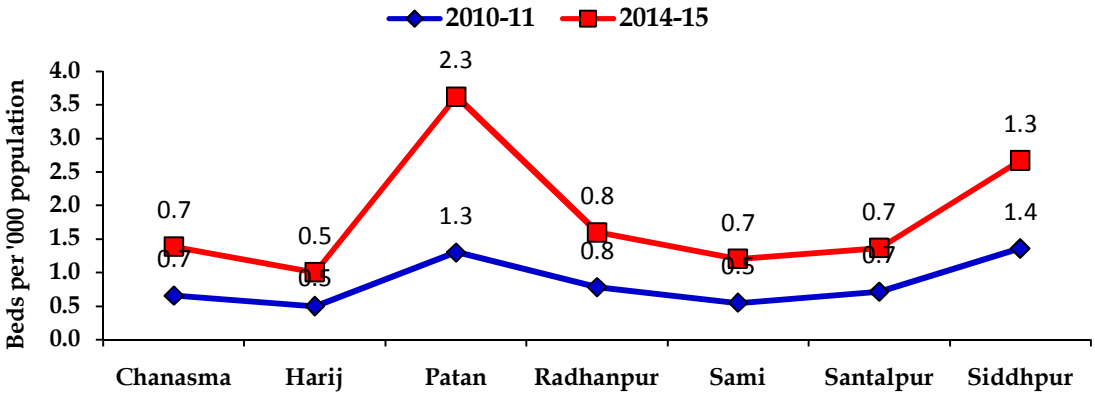
Table 3.4: Beds per thousand of Population in Patan District (2010-11 & 2014-15)

Sr	Taluka	2010-11			2014-15		
		Total Population	No. of Beds	Beds per '000 Population	Total Population	No. of Beds	Beds per '000 Population
1	Chanasma	128629	84	0.7	130743	96	0.7
2	Harij	84813	42	0.5	94562	48	0.5
3	Patan	383961	500	1.3	449480	1046	2.3
4	Radhanpur	120177	94	0.8	144266	118	0.8
5	Sami	164705	90	0.5	182805	120	0.7
6	Santalpur	109487	78	0.7	128791	84	0.7
7	Sidhpur	190937	260	1.4	213087	280	1.3
	District	**1182709**	**1148**	**1.0**	**1343734**	**1792**	**1.3**

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

The table 3.4 describes the number of beds per thousand of population. During the year 2010-11, the bed per thousand was 1.0 which increased to 1.3 during the year 2014-15. The taluka wise trend of beds per thousand is shown in the figure 3.1:

Figure 3.1: Beds per thousand of Population in Patan District (2010-11 & 2014-15)



The figure 3.1 illustrated that highest changes is found in Patan taluka. The number of beds increased to 2.3 beds per thousand of population in the year 2014-15 from 1.3 during the year 2010-11. The position of Chanasma, Harij, Radhanpur and Santalpur remained unchanged in the year 2014-15 from the previous year 2010-11.

3.5 Number of Doctors and Nurses

The taluka wise doctors and nurses are presented in the table 3.5:

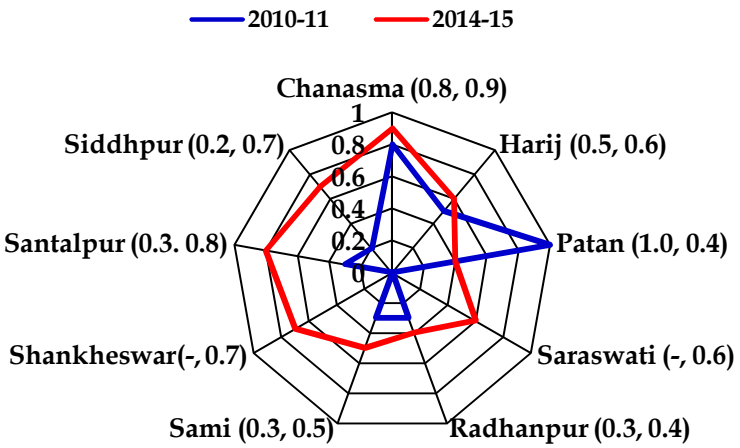
Table 3.5: Taluka Wise Doctors and Nurses (2014-15)

Sr.	Taluka	Doctors		Number of Doctors per 10000 Population		Nurses		Number of Nurses per 10000 Population	
		2010-11	2014-15	2010-11	2014-15	2010-11	2014-15	2010-11	2014-15
1	Chanasma	10	12	0.8	0.9	33	53	2.6	4.1
2	Harij	5	6	0.5	0.6	10	23	1.2	2.4
3	Patan	12	8	1.0	0.4	54	54	1.4	2.6
4	Saraswati	-	15	-	0.6	-	58	-	2.4
5	Radhanpur	4	6	0.3	0.4	27	52	2.2	3.6
6	Sami	3	5	0.3	0.5	34	36	2.1	3.9
7	Shankheswar	-	6	-	0.7	-	30	-	3.3
8	Santalpur	4	9	0.3	0.8	29	49	2.6	3.8
9	Sidhpur	4	15	0.2	0.7	23	43	1.2	2.0
	District	**42**	**82**	**0.4**	**0.6**	**210**	**398**	**1.8**	**3.0**

Source: Statistical Abstract, Patan 2010-11 & 2014-15

The table 3.5 shows that during the year 2010-11, there were 42 doctors and 210 nurses in Patan district whereas the number of doctors increased to 82 during the year 2014-15. The number of doctors per 10000 population increased to 0.6 in the year 2014-15 from 0.4 in the year 2010-11. On the other side nurses per 10000 population increased to 3.0 in the year 2014-15 from 1.8 in the year 2010-11. The taluka wise number of doctors and nurses per 10000 population is presented in the figure 3.2 and figure 3.3:

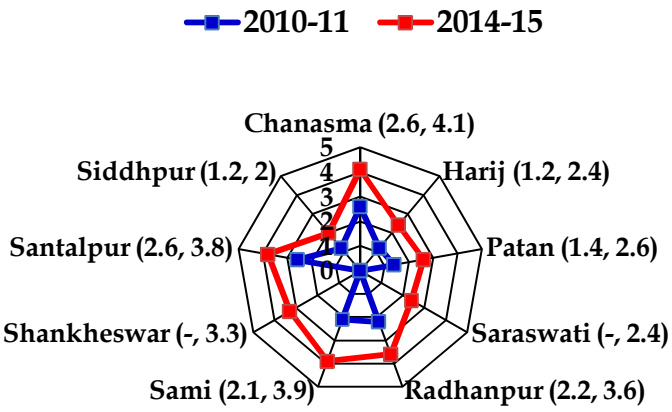
Figure 3.2: Number of Doctors per 10000 Population



Source: Statistical Abstract, Patan 2010-11 & 2014-15

The figure 3.2 illustrated the number of doctors per 10000 population. The highest number of doctors per 10000 population is found 0.9 in Chanasma taluka. It is followed by Santalpur, Sidhpur and Shankeshwar with 0.8, 0.7 and 0.7 respectively.

Figure 3.3: Number of Nurses per 10000 Population



Source: Statistical Abstract, Patan 2010-11 & 2014-15

The figure 3.3 exhibits the number of nurses per 10000 population. The highest 4.1 nurses per 10000 population is found in Chanasma taluka during the year 2014-15. It is followed by Sami and Santalpur with 3.9 and 3.8 nurses per 10000 population during the year 2014-15.

3.6 Health Personal at CHCs

The taluka wise health personal at community health centers was presented in the table 3.6:

Table 3.6:Taluka Wise Health Personnel at CHCs (2014-15)

Sr	Taluka		General Surgeon		Physician		Gynaecologist		Paediatrics		MO (MBBS)	
			2010-11	2014-15	2010-11	2014-15	2010-11	2014-15	2010-11	2014-15	2010-11	2014-15
1	Chanasma	S	0	0	0	0	0	0	0	0	8	12
		F	0	0	0	0	0	0	0	0	6	12
2	Harij	S	0	0	0	0	0	0	0	0	2	6
		F	0	0	0	0	0	0	0	0	2	6
3	Patan	S	0	0	0	0	0	0	0	0	19	8
		F	0	0	0	0	0	0	0	0	13	8
4	Radhanpur	S	1	1	0	0	0	1	0	0	7	9
		F	1	0	0	0	0	1	0	0	4	6
5	Sami	S	0	0	0	0	0	0	0	0	7	5
		F	0	0	0	0	0	0	0	0	7	5
6	Santalpur	S	0	0	0	0	0	0	0	0	4	10
		F	0	0	0	0	0	0	0	0	4	9
7	Sidhpur	S	0	1	0	1	0	1	0	1	5	17
		F	0	0	0	0	0	1	0	0	5	15
	District	**S**	**1**	**2**	**0**	**1**	**0**	**2**	**0**	**1**	**52**	**67**
		F	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**41**	**61**

Source: District Health Mission, District Health Officer, District Panchwyat, Patan, 2014-15

The table 3.6 exhibits that in the year 2010-11, 1 post of general surgeon was sanctioned and filled but in the year 2014-15, 2 post of general surgeon was sanctioned but it was found vacant. During the year 2010-11, the post of physician, gynecologist and pediatrics was not sanctioned but during the year 2014-15 one post of physician, 2 post of gynecologist and one pediatrics was sanctioned but only gynecologist post was filled. It is also found from the table 3.6 that during the year 2010-11, 52 posts was sanctioned for medical officers but only 41 posts was filled whereas during the year 2014-15, the posts for medical officers was increased to 67 but only 61 posts was filled.The taluka wise average population served by sub centers, primary health centers and community health centers is presented in the table 3.7:

Table 3.7: Taluka Wise Average Population Served by SCs, PHCs & CHCs (2014-15)

Sr	Talukas	Total Population	SCs		PHCs		CHCs	
			No	%	No	%	No	%
1	Chanasma	130743	4842	3.7	26149	20.0	65372	50.0
2	Harij	94562	5910	6.3	47281	50.0	94562	100
3	Patan	204309	8513	4.2	40862	20.0	204309	100
4	Saraswati	245171	8172	3.3	35024	14.3	81724	33.3
5	Radhanpur	144266	5343	3.7	48089	33.3	144266	100
6	Sami	93122	4901	5.3	46561	50.0	93122	100
7	Shankheswar	89683	5605	6.3	29894	33.3	89683	100
8	Santalpur	128791	4441	3.5	32198	25.0	64396	50
9	Sidhpur	213087	9265	4.4	42617	20.0	71029	33.3
	District	**1343734**	**6332**	**4.2**	**38742**	**25.9**	**100940**	**67.6**

Source: District Health Officer, District Panchayat, Patan, 2014-15

The table 3.7 shows that out of total 1343734 population in Patan district, 6332 average population served by sub centers which is 4.24 percent of total population during the year 2014-15. On the other side 38742 average population served by public health centers and 100940 average population served by community centers which is 25.9 percent and 67.6 percent of the total population respectively.The table 3.7 also depicts that 100 percent population of Harij, Patan, Radhanpur, Sami and Shankheswar was served by community health centers during the year 2014-15.

3.7 Outdoor and Indoor Patients

The outdoor and indoor patients served by public health centers, community health centers and civil hospitals are shown in the table 3.8:

Table 3.8: Outdoor and Indoor Patients in Patan District (2010-11 & 2014-15)

	2010-11			2014-15		
	Outdoor	Indoor	Total	Outdoor	Indoor	Total
Primary Health Center	111127	6254	117381	169458	1477	170935
Community Health Center	274264	30100	304364	431622	39435	471057
District/Civil Hospital	284019	36296	320315	502457	33839	536296
Total	**669410**	**72650**	**742060**	**1103537**	**74751**	**1178288**

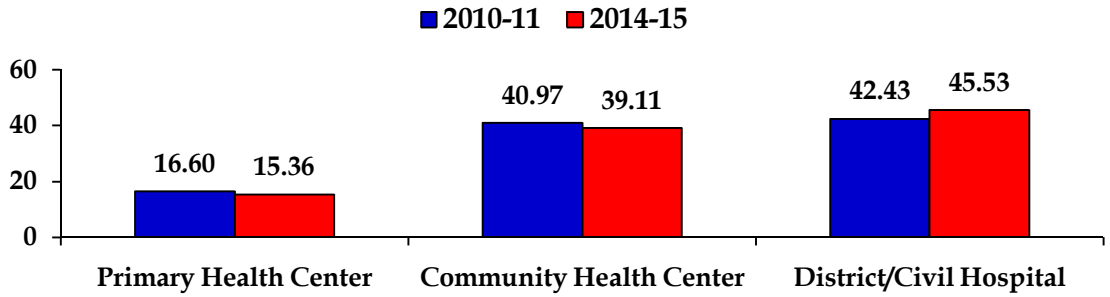
Source: Health Statistics, Gujarat, 2010-11 & 2014-15

The table 3.8 reveals that the total indoor and outdoor patients served by PHCs, CHCs and civil hospitals was 742060 patients during the year 2010-11 whereas during the year 2014-15 it was increased to 1178288 patients. The total patients served by primary health centers, community health centers and civil hospitals was 117381, 304364 and 320315 patients respectively during the year 2010-11 which increased to 170935, 471057 and 536296 patients respectively during the

year 2014-15. The burden on civil hospitals was still increasing due to more facilities in the hospitals than the centers.

The percentage change in outdoor patients is presented in figure 3.4 and the percentage change in indoor patients is presented in figure 3.5:

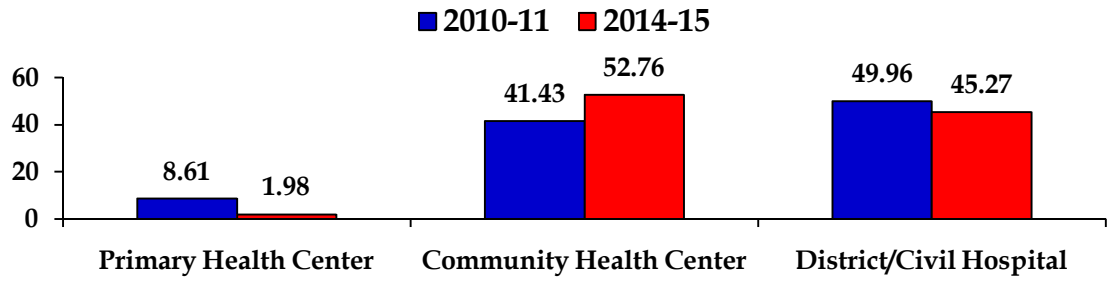
Figure 3.4: Percentage change in Outdoor Patients (2010-11 & 2014-15)



Source: Health Statistics, Gujarat, 2010-11 & 2014-15

The figure 3.4 illustrates the percentage of outdoor patients during the year 2010-11 and 2014-15. During the year 2010-11, the percentage of outdoor patients in primary health centers, community health centers and civil hospitals was 16.60 percent, 40.97 percent and 42.43 percent whereas during the year 2014-15 the percent of outdoor patients in civil hospitals increased to 45.53 percent but the percentage of outdoor patients in primary health centers and community health centers decreased to 15.36 percent and 39.11 percent respectively.

Figure 3.5: Percentage change in Indoor Patients (2010-11 & 2014-15)



Source: Health Statistics, Gujarat, 2010-11 & 2014-15

The figure 3.5 illustrates the percentage of indoor patients during the year 2010-11 and 2014-15. During the year 2010-11, the percentage of indoor patients in primary health centers, community health centers and civil hospitals was 8.61 percent, 41.43 percent and 49.96 percent whereas during the year 2014-15 the percent of outdoor patients in community health centers increased to 52.76 percent but the percentage of outdoor patients in primary health centers and civil hospitals decreased to 1.98 percent and 45.27 percent respectively.

The taluka wise indoor and outdoor patients were presented in the table 3.9:

Table 3.9: Taluka Wise Indoor and Outdoor Patients Served in Patan District

Sr	Talukas	Indoor		Outdoor		Total	
		2011-12	2014-15	2011-12	2014-15	2011-12	2014-15
1	Chanasma	57	7060	19141	110615	19198	117615
2	Harij	53	4242	18032	40540	18085	44782
3	Patan	63	26014	19304	434756	19367	460770
4	Saraswati	-	3941	-	80490	-	84431
5	Radhanpur	78	7642	20597	77640	20675	85282
6	Sami	82	1126	18102	19253	18184	20379
7	Shankheswar	-	2607	-	33374	-	35981
8	Santalpur	53	5148	12002	75398	12055	80546
9	Sidhpur	65	16971	18988	231471	19053	248442
	District	**451**	**74751**	**126166**	**1103537**	**126617**	**1178288**

Source: District Statistical Outline, Patan, 2011-12 & 2014-15

The table 3.9 shows that during the year 2011-12, highest indoor patients was registered in Sami taluka which increased to 1126 patients during the year 2014-15 whereas the lowest indoor patients was registered in Harij and Santalpur taluka with 53 -53 patients during the year 2011-12 the registration of indoor patients increased to 4242 and 5148 patients respectively. Saraswati and Shankheswar taluka was not formed in 2011-12. On the other side during the year 2011-12 the highest outdoor patients was registered in Radhanpur taluka with 20597 patients but in 2014-15 the highest outdoor patients was registered in Patan taluka with 434756 patients. The percentage of indoor and outdoor patients to total population is shown in the table 3.10:

Table 3.10: Percent of In-patients and Out-patients to Total Population, (2014-15)

Sr	Taluka	Total Population	In-patients		Out-patients	
			No.	%	No.	%
1	Chanasma	130743	7060	5.4	110615	84.6
2	Harij	94562	4242	4.5	40540	42.9
3	Patan	449480	29955	6.7	515246	114.6
4	Radhanpur	144266	7642	5.3	77640	53.8
5	Sami	182805	3733	2.0	52627	28.8
6	Santalpur	128791	5148	4.0	75398	58.5
7	Sidhpur	213087	16971	8.0	231471	108.6
	District	**1343734**	**74751**	**5.6**	**1103537**	**82.1**

Source: District Statistical Outline, Patan, 2014-15

The table 3.10 describes the percentage of in-patients and out-patients to total population for the year 2014-15. The percentage of in-patients was 5.6 percent while the percentage of out-patients was 82.1 percent. The out-patients in Patan taluka was more than its population. It shows that the patients from the nearby places also take treatment from Patan taluka.

3.8 Prevalence and Incidence of Various Communicable Diseases

Malaria is a potentially life threatening parasitic disease in India. The public health department has been spraying DDT to contain the incidence of malaria, although the coverage of DDT spraying is not satisfactory in the district. Like other communicable diseases, leprosy has been one of the major public health problems in the district for a long time. After the introduction of MDT during last 20 years enormous progress has been achieved in combating the disease. The disease wise cases reported in Patan are shown in the table 3.11:

Table 3.11: Disease wise Cases Reported in Patan

Major Diseases	2010	2011	2012	2013	2014	2015
Acute Diarrhoeal Disease	14656	12796	12446	15153	16412	19722
Acute Respiratory Infection	10254	17806	19866	29143	39214	73600
Acute Viral Hepatitis	127	297	129	622	212	510
Measles	311	86	3	6	27	32
Malaria Falciparum	93	142	46	83	26	29
Enteric Fever	494	688	468	1460	816	1326
Malaria Vivax	1433	2615	2324	1555	824	679
Bacillary Dysentery	313	224	147	141	208	257
Fever of Unknown Origin	3487	3531	5531	6389	9353	18955

Source: Database of Chief District Health Office, Patan

The table 3.11 shows that the cases of acute diarrhoeal disease increases to 19722 during the year 2014-15 from 14656 in the year 2009-10. The patients of acute respiratory infection increasedto seven times to 73600 in the year 2015 from 10254 in the year 2010. On the other hand cases of measles, malaria falciparum, malaria vivax and bacillary dysentery decreases in the year 2015.

3.9 Early ANC Registrations

Early antenatal registrations play an important role in improving the health of the expectant mothers and child. This helps the state to tract the health status of the expectant mothers with regards to timely immunization, nutrient supplements, handling emergencies, pregnancy related complications etc. Further an important measure of safe motherhood. The ANC registration is presented in the table 3.12:

The table 3.12 shows the performance of ANC registration in 2010-11, 2012-13 and 2014-15. The annual workload was same as 33000 in all the three points of time but the performance of ANC registration was 32636 in 2011 and it decreased to 30272 in 2012-13 and 30191 in the year 2014-15 which is 98.90 percent , 91.7 percent and 91.5 percent respectively.The table 3.12 also reveals that the percentage of early registration to total ANC was 75.05 percent in 2010-11 which increased to 82.7 percent in 2012-13 and 84.6 percent in the year 2014-15. The percentage of TT doses against ANC registration decreased from 96.02 percent in the year 2010-11 to 88.9 percent in the year 2012-13 and 86.8 percent in the year 2014-15

Table 3.12: ANC Registration, 2010-11, 2012-13 & 2014-15

Sr	Description	2010-11	2012-13	2014-15
1	Annual Workload	33000	33000	33000
2	Performance of ANC Registration	32636	30272	30191
3	Percentage of ANC Registration against Workload	98.90	91.7	91.5
4	Early Registration	24492	25026	25521
5	Percentage of Early Registration to Total ANC	75.05	82.7	84.6
6	Performance of TT Doses	31337	29343	28650
7	Percentage of TT against ANC Registration	96.02	88.9	86.8
8	ANC 3 Check up	23286	24555	28689
9	Percentage of ANC 3 Check up against ANC Registration	71.35	81.1	95.0

Source: Health Statistics, Gujarat, 2010-11 & 2014-15

The taluka wise annual workload and performance of ANC registration is presented in the table 3.13:

Table 3.13: Taluka wise ANC Registration (2014-15)

Sr.	Taluka	Annual Work Load	ANC Reg.	% of ANC Reg.
1	Chanasma	2503	2423	96.8
2	Harij	2487	2223	89.4
3	Patan	6131	4919	80.2
4	Saraswati	5028	4754	94.6
5	Radhanpur	3829	4010	104.7
6	Sami	2720	2271	83.5
7	Shankheswar	1631	1599	98.0
8	Santalpur	3375	3292	97.5
9	Sidhpur	5296	4700	88.7
	District	**33000**	**30191**	**91.5**
	Rural Total	**27504**	**25321**	**92.1**
	Urban Total	**5496**	**4870**	**84.0**
	Grand Total	**33000**	**30191**	**91.5**

Source: District Health Officer, District Panchayat, Patan, 2014-15

The table 3.13 reveals that during the year 2014-15, total workload in Patan district was 33000, out of this total ANC registration was 301191 which is 91.5 percent of total workload. The highest percentage of ANC registered in Radhanpur taluka with 104.7 percent and lowest percentage registered in Patan taluka with 80.2 percent. Among the total workload 27504 was urban and 5796 was rural. Out of total urban workload 92.1 percent ANC registration was registered and out of total rural workload 84.0 percentage was registered.

3.10 Delivery Registration

One of the important thrusts of the Reproductive and Child Health Programme is to encourage deliveries under proper hygienic conditions under the supervision of trained health professionals. The provision of delivery services in the government health institutions is one of the components of the RCH Programme. The performance of delivery registration is shown in the table 3.14:

Table 3.14: Rural – Urban Delivery Registration (in Percentage) 2009-10 to 2014-15

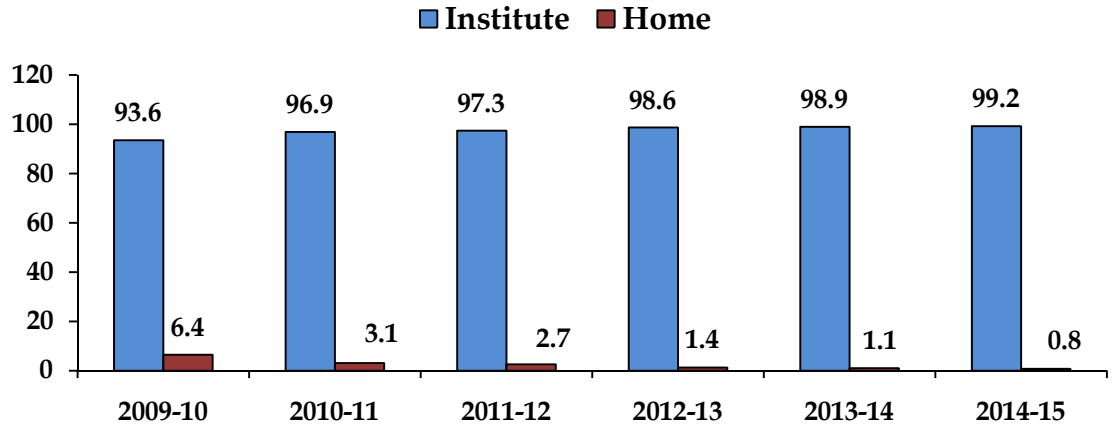
	R/U/T	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Institute	Rural	93.8	95.7	97.1	98.4	98.6	98.4
	Urban	96.2	95.3	98.6	99.3	99.6	99.7
	Total	**93.6**	**96.9**	**97.3**	**98.6**	**98.9**	**99.2**
Home	Rural	6.2	4.3	2.9	1.6	1.4	1.6
	Urban	3.7	3.1	1.4	0.7	0.4	0.3
	Total	**6.4**	**3.1**	**2.7**	**1.4**	**1.1**	**0.8**

Source: CDHO, Patan, 2009-10 to 2014-15

The table 3.14 shows that during the year 2009-10, total 93.6 percent delivery registered in institutes where as 6.4 percent delivery registered in home but during the year 2014-15, the institute delivery increased to 99.2 percent where home deliveries decreased to only 0.8 percent.

The percentage of delivery of registration is shown in the figure 3.6:

Figure 3.6: Percentage change in Delivery Registration (2009-10 to 2014-15)



The figure 3.6 illustrates that the institutional deliveries were continuously increasing from 2009-10 to 2014-15 from 93.6 percent to 99.2 percent whereas the home deliveries were decreasing from 2009-10 to 2014-15 from 6.4 percent to only 0.8 percent which shows the health awareness in Patan district.The taluka wise institutional delivery is shown in the table 3.15:

The table 3.15 shows that during 2009-10, the 99 percent deliveries was registered under institutions in Chanasma taluka where this percent goes to 100 percent from the year 2012-13 to 2014-15 which is the highest percentage in Chanasma as well as in Patan taluka in the year

2014-15. The great change was seen in Santalpur taluka where 84 percent deliveries were registered in institutions but this percent increased to 99 percent in the year 2014-15.

Table 3.15: Taluka wise Institutional Delivery (2009-2010 to 2014-15) (%)

Sr	Taluka	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
1	Chanasma	99	100	99	100	100	100
2	Harij	90	93	95	98	97	97
3	Patan	97	98	98	99	99	100
4	Saraswati	-	-	-	-	-	99
5	Radhanpur	87	94	94	96	98	97
6	Sami	90	95	96	98	98	96
7	Shankheswar	-	-	-	-	-	99
8	Santalpur	84	95	96	100	98	99
9	Sidhpur	98	100	100	100	100	100
	District	**94**	**97**	**97**	**99**	**99**	**99**

Source : Commissionerate of Health, Medical Services, Medical Education and esearch, Gujarat

3.11 Immunization of Children

Immunization against various diseases during childhood is very important for long term success of health programmes. Immunization of children at early age against diseases like diptheria, polio and measles, etc. is done regularly by the parents, particularly in urban areas/ centers. In rural areas, as well, awareness in this regard is quite high and the people are taking due care in this regard. The immunization programmes are regularly run through a network of primary health centers, sub-centers and hospitals spreaded in different talukas of the district.

The immunization of children against six serious but preventable diseases namely, tuberculosis, diphtheria, pertusis, tetanus, poliomyelitis and measles is the main component of the child survival programme. As part of the National Health Policy, the National Immunization Programme is being implemented on a priority basis. The Government of India initiated the Expanded Programme on Immunization (EPI) in 1978 with the objective of reducing morbidity, mortality and disabilities among children from six diseases.

The Universal Immunization Programme (UIP) was introduced in 1985-86 with the objective of covering at least 85 percent of all infants against the five vaccine preventable diseases by 1990. This scheme has been introduced in every district of the country. The standard immunization schedule developed for the child immunization programme specifies the age at which each vaccine should be administrated and the number of doses to be given. Routine vaccinations received by infants and children are usually recorded on a vaccination card that is issued for the child. The physical performance of immunization of children is presented in the table 3.16:

The table 3.16 describes that the percentage of BCG immunization achievement decreased in the year 2012-13 to 97.3 percent from 104.1 percent in the year 2010-11 while the percentage achievement of fully immunized increased to 90.1 percent in the year 2013-14 from 88.7 percent

in the year 2012-13. The percentage of achievement under various immunizations is shown in the figure 3.7:

The figure 3.7 illustrates that the percentage of BCG is decreased over the years from 2009-10 to 2013-14 to 100.3 percent. But the achievement of OPV3 increased to 118.9 percent from 92.4 percent in 2009-10 while the percentage of fully immunized in 2008-09 was 93.4 percent but in the year 2012-13 it decreased to 90.1 percent.

3.12 Position of Patan District in Routine Immunization of Children in State

The position of routine immunization of children in state is shown in the table 3.17:

The table 3.17 shows that during the year 2010-11, total 29133 children were BCG immunized which is 2.35 percent of state but during the year the BCG immunized children decreased to 26931 which is 2.1 percent of the state. The fully immunized children were 25411 in Patan district during the year 2010-11 which is 2.24 percent of the state but in the year 2014-15, the fully immunized children were 27348 which is 2.4 percent of the state.The percentage share of Patan district in immunization of children is presented in the figure 3.8:

The figure 3.8 illustrates that the percentage share of BCG immunization of children was 2.35 percent in 2010-11 which is 2.1 percent in 2014-15. The percentage share of DPT-3, Measles and Vitamin A immunized children was 2.32 percent, 2.27 percent and 2.41 percent respectively in the year 2010-11 which is 2.2 percent, 2.3 percent and 2.4 percent respectively in the year 2014-15.

3.13 Malnutrition

It is said that children are the future of a nation. They can come up to this expectation only when the children are physically fit and mentally alert. Meeting nutritional requirements of the children thus is important for their physical and mental health. In this regard taluka wise data for malnutrition status of the children upto 5 years of age in different taluka has been analyzed and the results are presented in the table 3.18:

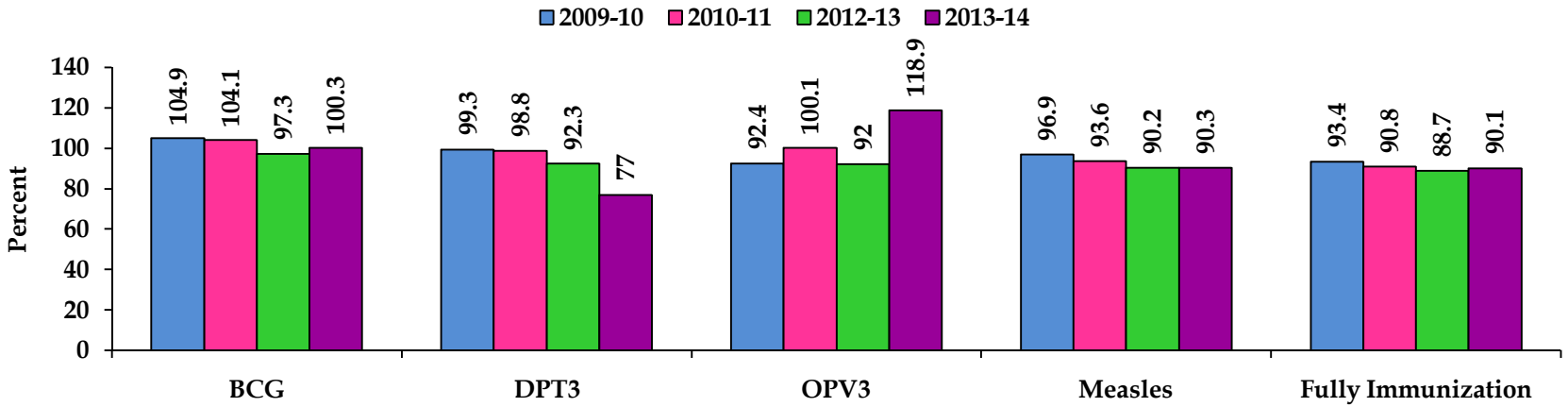
The table 3.18 states that in order to ascertain the nutritional status of children below 5 years in different talukas of the district, the total 92695 children were weighted during the year 2015. From this 88.4 percent children were reported to be of normal weight but 11.58 percent children in this age group reported malnourished. Therefore, the result of the analysis of these data presents a picture that requires immediate attention of the planners.

Table 3.16: Immunization Physical Performance in Patan District (2009-10 to 2013-14)

Year	Total Live Birth Reported	BCG		DPT3		OPV3		Measles		Fully Immunization	
		Achieved	%	Achieved	%	Achieved	%	Achieved	%	Achieved	%
2009-10	28090	29477	104.9	27905	99.3	28907	92.4	27223	96.9	26239	93.4
2010-11	27976	29133	104.1	27633	98.8	28483	100.1	26194	93.6	25411	90.8
2012-13	27279	26531	97.3	25169	92.3	26225	92.0	24616	90.2	24206	88.7
2013-14	26058	26139	100.3	20067	77.0	23893	118.9	23535	90.3	23475	90.1

Source: Health Statistics, Health & Family Welfare Department, Govt. of Gujarat

Figure 3.7: Percentage of Immunization in Patan District (2009-10 to 2013-14)



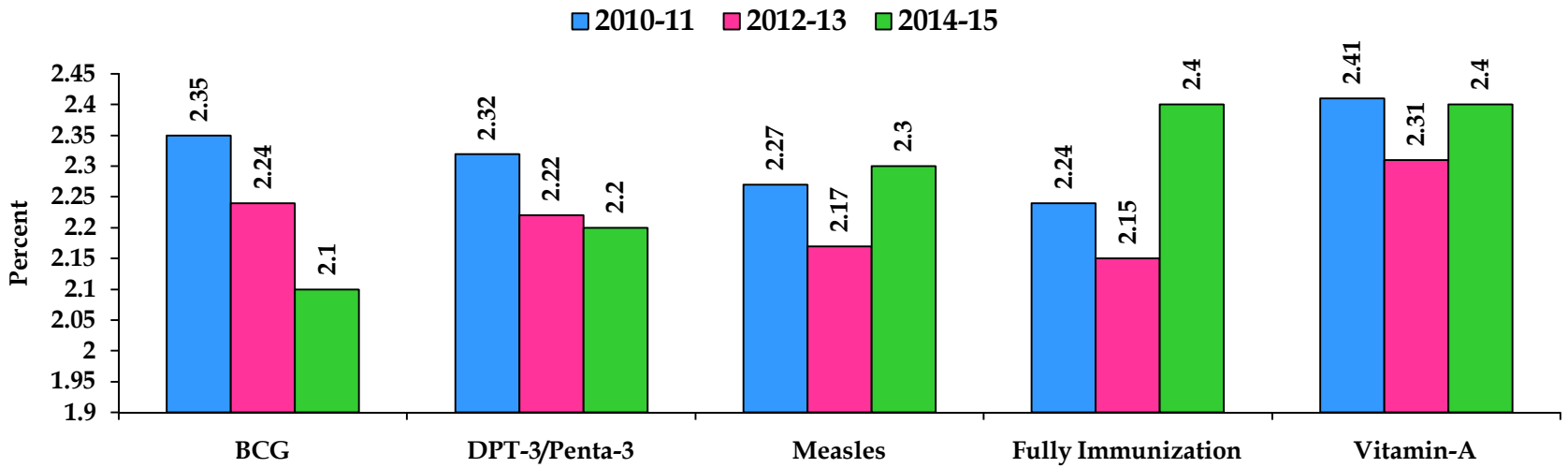
Source: Health Statistics, Health & Family Welfare Department, Govt. of Gujarat

Table 3.17: Percentage Share of Patan District in Immunization of Children

Description	2010-11			2012-13			2014-15		
	Patan	Gujarat	% of Share	Patan	Gujarat	% of Share	Patan	Gujarat	% of Share
BCG	29133	1239423	2.35	27268	1218716	2.24	26931	1271409	2.1
DPT-3/Penta-3	27633	1192108	2.32	26030	1174236	2.22	24829	1148637	2.2
Measles	26194	1153190	2.27	25238	1163194	2.17	26741	1146473	2.3
Fully Immunization	25411	1135332	2.24	24863	1157218	2.15	27348	1140665	2.4
Vitamin-A	26194	1088901	2.41	24358	1054318	2.31	23032	1141455	2.4

Source: Chief District Health Officer, Patan, 2010-11 to 2014-15

Figure 3.8: Percentage Share of Patan District in Immunization of Children



Source: Chief District Health Officer, Patan, 2010-11 to 2014-15

Table 3.18: Taluka wise Malnutrition of children (0-5 yrs) in Patan District, December 2015

Sr	Taluka	Total Children	Total Children Weighted		Total Children with Normal Weight		Total Children Malnourished		Malnourished Children per 1000 Children
			No.	%	No.	%	No.	%	
1	Chanasma	8795	8647	98.3	8424	97.4	223	2.5	26
2	Harij	7444	7120	95.6	6069	85.2	1051	14.7	148
3	Patan	27734	27404	98.8	25805	94.2	1599	5.8	58
4	Radhanpur	11492	10700	93.1	9585	89.6	1115	10.4	104
5	Sami	14043	12905	91.9	9427	73.0	3478	26.9	270
6	Santalpur	11314	10423	92.1	7715	74.0	2708	25.9	260
7	Sidhpur	15994	15496	96.9	14935	96.4	561	3.6	36
	District	**96816**	**92695**	**95.7**	**81960**	**88.4**	**10735**	**11.5**	**116**

Source: MPR -Dec-2015, ICDS, Patan

The total malnourished children per thousand of children were estimated 116 children during 2015 for the district as a whole. Among all the talukas, Chanasma taluka showed better performance in terms of nutritional status with only 26 children malnourished at per 1000 children. It is followed by Sidhpur taluka with 36 malnourished at per 1000 children. Sami taluka performed lowest in terms of nutritional status of children with 270 malnourished children at per 1000 children.

The malnourished children have been further categorized into 2 categories, moderate and severe malnourished. The position of different talukas in this regard is presented in the table 3.19:

Table 3.19: Taluka wise Status of Malnutrition (0-6 yrs) in Patan District, 2015

Sr	Taluka	Total Children Weighted	Moderate Malnourished		Severe Malnourished	
			No	%	No	%
1	Chanasma	8647	193	2.23	30	0.35
2	Harij	7120	921	12.94	130	1.83
3	Patan	27404	1467	5.35	132	0.48
4	Radhanpur	10700	1019	9.52	96	0.90
5	Sami	12905	3079	23.86	399	3.09
6	Santalpur	10423	2501	24.00	207	1.99
7	Sidhpur	15496	501	3.23	60	0.39
	District	**92695**	**9681**	**10.44**	**1054**	**1.14**

Source: MPR -Dec-2015, ICDS, Patan

The table 3.19 reveals that fortunately not many children are in category of severe malnourished. Majority of the children are in category of moderately malnourished with 10.44 percent. The children having severe malnutrition status worked out to 1.14 percent in the district. In general, we may have to strengthen the mid day meal programme in primary schools and those of the anganwadies, etc.The highest severe malnourished recorded in Sami taluka with 3.09 percent and it is followed by Santalpur taluka with 1.99 percent. These talukas in particular require greater attention and better health care services aimed at improving the nutritional status of the children.The monitoring of nutritional level of children (0-5 yrs.) of Patan district is shown in the table 3.20:

Table 3.20: Monitoring of Nutrition Level of Children (0-5 yrs.) of Patan District

Year	Normal Weight	Moderate Malnourished	Severe Malnourished
March-2010	45493	36305	11995
March-2011	53348	35938	5667
March-2012	58219	35838	3661
March-2013	59440	35928	2688
March-2014	68850	22260	2134
March-2015	80258	11474	1092
December-2015	81960	9681	1054

Source: MPR -Dec-2015, ICDS, Patan

The table 3.20 shows that the normal weighted children are continuously increasing. It was 45493 in March 2010 but it increased to 81960 in December 2015. On the other side the number of moderately malnourished children is decreasing. It was 36305 in March 2010 and it decreased to 9681 in December 2015. As same the number of severe malnourished is also decreasing from 11995 in March 2010 to 1054 in December 2015.

3.14 Integrated Child Development Scheme (ICDS)

ICDS is an important state sponsored programme meant for strengthening nutrition among 0-6 year age group children and pregnant women/lactating mothers. It is a major effort to not only strengthen childhood it is also an important anti-poverty programme. Central to this programme are anganwadies, nutrition supplements and the anganwadi worker. The number of anganwadies and the population covered is shown in the table 3.21:

The table 3.21 shows that total 1427 anganwadies were sanctioned in the Patan district and 1426 anganwadies were functioning because the concerned personnel are not appointed there. The average population covered by these anganwadies was 942 persons. The number of post sanctioned and filled in anganwadies in Patan district is also presented in the table 3.22:

Table 3.21: Number of ICDS & Population Covered in Patan District (2014-15)

Sr	District	No. of ICDS Blocks/ Anaganwadi		Average Population Covered by each ICDS
		Sanctioned	Functional	
1	Chanasma	180	180	726
2	Harij	106	106	892
3	Patan	417	416	1080
4	Radhanpur	139	139	1038
5	Sami	224	224	816
6	Santalpur	161	161	800
7	Sidhpur	200	200	1065
	District	**1427**	**1426**	**942**

Source: IDCS MPR 2014-15

Table 3.22: Number of Posts Sanctioned & Filled in Patan (2014)

Sr.	District	CDPO		ACDPO		Supervisor		AW-Worker		AW-Helper	
		S	F	S	F	S	F	S	F	S	F
1	Chanasma	1	1	2	0	8	7	180	178	178	177
2	Harij	1	1	0	0	4	3	106	104	99	93
3	Patan	2	2	2	2	17	15	417	412	402	393
4	Radhanpur	1	1	0	0	4	2	139	139	137	135
5	Sami	1	1	0	0	7	2	224	210	221	187
6	Santalpur	1	1	0	0	4	2	161	151	161	135
7	Sidhpur	1	1	2	0	9	5	200	196	195	187
	District	**8**	**8**	**6**	**2**	**53**	**36**	**1427**	**1390**	**1393**	**1307**

Source: IDCS MPR 2014

The table 3.22 presents that 8 post was sanctioned for CDPO, 6 posts for ACDPO, 53 for supervisor, 1427 posts for AW-Worker and 1393 posts for AW-Helper. Against this 8 CDPO was appointed, 2 ACDPO, 36 supervisors, 1390 anganwadi workers and 1307 anganwadi helpers was appointed.

3.15 Government Initiatives

To improve the health status in Patan district, various schemes has been implemented in the district. These are:

Janani Suraksha Yojana

Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Rural Health Mission (NRHM) being implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women. The Scheme has contributed immensely in increasing the Institutional deliveries among the BPL, ST

and SC population. The progress of Scheme has been remarkable since inception and is expected to achieve good results in the years to come.

The Bal Sakha Scheme

Under this scheme, all babies born to BPL mothers in the State (approximately 3,00,000 births per annum) will be covered for neonatal care by partnering pediatricians, including care in their Neonatal Intensive Care Unit (level 2) at no cost to the beneficiary. After initialization and stabilization of the Scheme, the Scheme may be extended to cover all infants up to one year age.

Chiranjivi Yojana

Chiranjivi Yojana scheme proved as an exemplary scheme in the area of public health which has contributed significantly in improving the access to institutional deliveries for marginalized section of the society by reducing the maternal deaths. Under the scheme, the government entered into a contract with the private provider to cater to institutional services for both normal and complicated delivery. The beneficiary has not to pay any type of charges related to delivery, medicine, anesthesia, laboratory investigations or operation.

Kasturba Poshan Sahay Yojana

The State Government has launched "Kasturba Poshan Sahay Yojana – conditional cash transfer" on 29th February-2012 with the goal of reduce the proportion of disease and death associated with malnutrition and anemia of pregnant women and mothers below poverty line by transferring conditional cash amount. During pregnancy the assistance is given for nutritious food and supplementary micronutrient under the scheme.

Janani Shishu Suraksha Karyakram

Under the "Janani Shishu Suraksha Karyakram", all the pregnant women will be given complete motherhood services including general and cesarean services in public Health Centers at free of cost and new born children, upto 1 year, will be given all the health treatment including transportation facilities without charge.

National Family Planning

Significant change has been made in National Family Welfare Programme of India. Now it is believed that impregnation control is not only based on family welfare system, but it can be controlled by introducing population development amalgamation. In this programme, emphasis is laid mostly on qualitative care, gender sensitivity and women samakhya.

Dikri Yojana

Under the scheme the family which is having only female child and adopt family planning operation and such family has no male child and only female child will be given prizes upto two daughter.

1. Family which adopts vasectomy/tubectomy only on one daughter will be given saving certificate of 6000/-.
2. Family which adopts vasectomy/tubectomy only on two daughters will be given saving certificate of 5000/-.

The financial and physical achievement of the schemes is given in the table 3.23:

Table 3.23: Physical and Financial Achievement of Various Health Related Schemes

Sr.	Schemes	Year	Beneficiaries	Expenditure (Lakh Rs.)
1	Chiranjivi Yojana	2015 –Jan. 2016	3611	144.92
2	Bal Sakha Yojana	2015 –Jan. 2016	1786	37.71
3	Janani Suraksha Yojana	2015 –Jan. 2016	5697	48.53
4	Kasturba Poshan Sahay Yojana	2015 –Jan. 2016	3145	62.90
5	Janani Shishu Suraksha Karyakram	2015 –Jan. 2016	11314	32.85
6	National Family Planning	2015 –Jan. 2016	7589	90.15

Source: Chief District Health Officer, Patan, 2014-15

National Health Insurance Scheme

As per the guide of Government of India, the State Government has started 'National Health Insurance Scheme'. The scheme provides insurance cover to B.P.L. families in Gujarat and gives protection from financial liabilities arising out of health shocks that involve hospitalization coverage up to 30000/- annually is provided for most of the diseases that require hospitalization to each family registered, on family flutter.The achievements under this scheme are:

Total BPL Families	:	119531
Families Provided Smart Card	:	62643
Number of Claims upto Feb. 2016	:	16302
Expenditure upto Feb. 2016	:	10.89 Crore Rs.

School Health Programme

School Health Checking Programme is organized every year in State. Medical Officers take visit of school as planned and conduct medical check-up of children of 0 - 14 years of age not going to school, children of 15-18 years of age going to secondary schools and beneficiaries of I.C.D.S. During the check-ups, on the spot necessary medicines are given to Suffering children by the doctors. During health check-ups, if children require any reference services, they will be sent immediately to district hospital. Where specialists of various diseases like optical Surgeon, Physician, Pediatrician, Dermatologist and E.N.T surgeon will check the child and give free medical treatment. Children having sight difficulty are provided spectacles free of charge. The children suffering from heart, kidney and cancer diseases are provided necessary treatment of diagnosis, treatment and surgery in super specialty hospital without any charge. Children suffering from complicated heart disease are sent outside the State in super specialty hospital for further treatment.

Under the scheme 384635 children were examined. Out of them 25907 children were provided referral services. In the investigation 47 children were found heart patient, 6 were suffering from kidney disease and 2 were cancer patient.

Mukhyamantri Amrutam (Ma) Yojana

The State Government has implemented "Mukhyamantri Amrutam Yojana" during the year 2012- 13, so that beneficiaries up to five members of the family living below poverty line may get intensive treatment in private hospitals for serious diseases, like burning cases, heart diseases, diseases of kidney, brain and of new born infants.

The achievements under this scheme are:

Total BPL Families	:	119531
Families Provided Smart Card	:	74621
Number of Claims upto Feb. 2016	:	2816
Expenditure upto Feb. 2016	:	44.69 Lakh Rs.

3.16 SWOC Analysis

SWOC analysis of health sector in Patan district is given in box 3.3:

The SWOC analysis technique was utilized to:

- match the environmental threats and opportunities with the weaknesses and especially strengths within the health sector;
- identify relationships between these factors and base strategies on them;
- use this rational systematic approach to anticipate, respond to and even alter the future environment.

Opportunities and challenges originate in the external environment and are the issues that make the external environment attractive or unattractive. They influence the way people react to the external environment. Strengths and weaknesses originate within an organization or

structure, and take into account resources, advantages and deficiencies, as well as relative standing with regard to competitors.

BOX 3.3 : SWOC Analysis

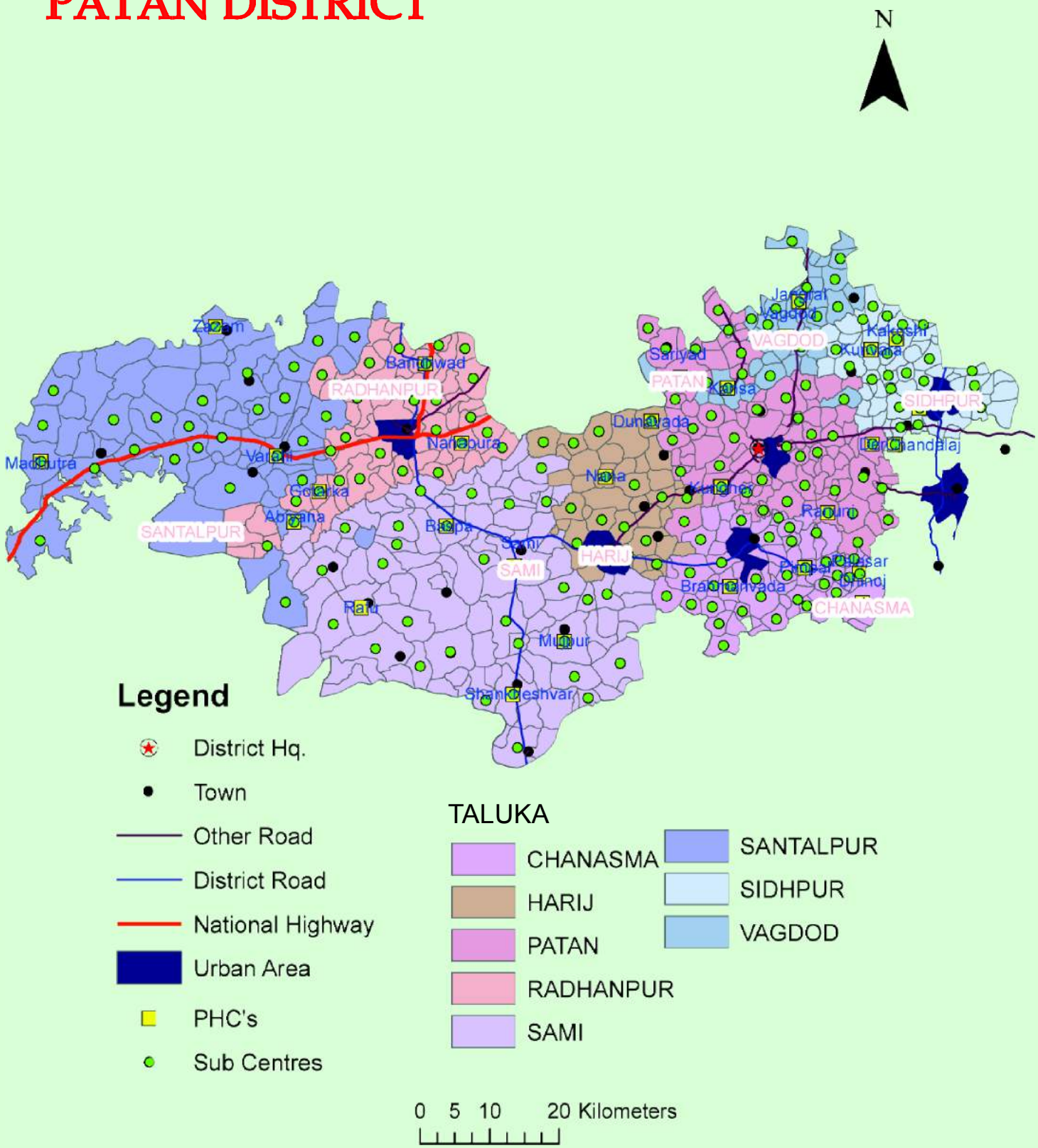
Strength	Weakness
• Having 210 Sub Centers, 38 PHCs & 15 CHCs. Also have an existence of 1 DH, 1 SDH, 1 AH in Patan District. • Institutional deliveries has been increased instead of Home deliveries. • There has been a significant increase in ANC – 3 Check ups against ANC Registration. • Good Infrastructural facilities available in health sector (Urban area). • School health check ups & referral services were provided under School Health program.	• Lack of medical & para medical staff in rural area. • Proportion of Malnourished children is higher in Developing Talukas of Patan District (Sami & Santalpur) compared to rest of the talukas. • Vast gap between health care infrastructure in Urban & Rural areas.
• Technological advances and development of new technologies will lead to new vaccines and therapeutics and diagnostics. • Chiranjvi Yojana, Janani Suraksha Yojana has played vital role in women and child health care and can be strengthened further to shower its benefits in deprived areas. • Vaccination and Immunisation schemes can be more effectively provided & there should be regular follow ups. • Residential facilities & Proper Transportation should be provided to doctors & nursing staff in order to retain the personnel.	• Larger number of People are suffering from Acute Respiratory Disease & is constantly increasing. • Lack of basic health care services in backward areas due to non availability of staff. • To increase the vaccination and immunization in scattered and remote areas.

SWOC ANALYSIS

Opportunity	Challenges

OOOO

HEALTH FACILITIES IN PATAN DISTRICT



CHAPTER - IV

Agriculture, Animal Husbandry and Livelihood

Facts

Total Irrigated Area (Ha.)	2011-12	95154
Work Participation Rate	2011	41.3
Total Livestock	2012	664154
Total Poultry	2012	99486
APL Cards	2014	219511
BPL Cards	2014	87149
AAY	2014	22048
Ration Card Holders	2013	328708

Chapter 4

Agriculture, Animal Husbandry and Livelihood

4.1 Introduction

Livelihood is a set of economic activities, involving self-employment and or wage employment by using one's endowments (human and material) to generate adequate resources (cash and non cash) for meeting the requirements of self and the household, usually carried out repeatedly and as such become a way of life. Ideally livelihood should keep a person meaningfully occupied in a sustainable manner with dignity. Livelihood, therefore, go far beyond to generate income. It is much more than employment.

Thinking on livelihood promotion evolved a great deal since the early days with contribution from people like Rabindranath Tagore, conceiver of the Sriniketan Experiment, Spencer Hatch, of YMCA, Martandam, Fr. Brayane of the Gurgoan project and Albert Meyer of the Etah project, all initiated livelihood promotion in their own ways.

Mahatma Gandhi, one of the early livelihood thinkers of 20th century, had a holistic vision of livelihoods, with a deep concern for both, the poor and for sustainability. Gandhiji suggested developing local economics by promoting inter-development activities, as a member of a mutually supportive community, eventually leading to "Gram Swaraj".

During this period, the emphasis was on building human capital and imparting knowledge. It was thought that people were not getting good remuneration because they lacked the know-how to do better. To address this gap, efforts to impart knowledge were made.
Even in the years after independence, government policies and strategies were based on similar principles. Many educational institutions and research organizations were started during the first five year plan. The Community Development Programme of the Government of India was also designed on these lines. The second five year plan attempted to institutionalize this through the concept of Panchayat Raj, to ensure that local decentralized institutions were built for development.

However, the limitation of this approach became apparent by late 1940's when they realized that just the know-how was not enough, a variety of services to enhance livelihoods were also necessary. Therefore, an alternative strategy was evolved, which tried to integrate various services like building market linkages, technology transfer and building physical and social infrastructure, all in one fold, built around a sector, such as wheat, paddy, milk or soyabean. The first two decades after independence rightly focused on development and stabilization of agriculture through irrigation.

Livelihoods are the ways and means through which people satisfy their needs, enhance choices and continuously improve welfare. Livelihood is a multidimensional concept and can be

equated to a system which describes how people make their actual living (Chambers and Conway, 1992). Variety of sources and dynamics of economic activities in which households are engaged determine whether the livelihood is secure or vulnerable. Households and individuals functions secure their livelihoods in an institutional arrangement (Ellis, 2000).

These institutions provide opportunities to the households and individuals to acquire essential capabilities to make use of it in the changing circumstances to reduce risk and uncertainty in securing livelihood are highly dependent upon the availability of the resource base and the access to public goods. Therefore, the availability of key assets such as finances, land, human skills and access to markets, employment opportunities common property resources and public goods plays an important role in making households and individuals to respond to different circumstances in different ways (Sudan, 2007).

Human beings by nature remain continuously in search of better and more secure livelihood strategies in the dynamic circumstances which generate high risk and uncertainty to survive within the existing arrangements. Thus, the household remains in search for alternative, more remunerative and less risky portfolio of livelihood strategy.

4.2 Agriculture Practices

Patan is historical district in North Gujarat region. The district has 7 Talukas with 517 villages. Total population of the district is about 12 lakhs. Economy of the district mainly depends on agriculture, animal husbandry and allied sectors.

Agro climatic zone

North Gujarat Agro Climatic Zone 4 includes Patan, Sidhpur, Chanasma, Harij, Sami, Radhanpur and Santalpur. Total geographical area of the district is about 5740 sq.km. Net sown area is 383271 hectares and gross cropped area is 462950 hectares (Agriculture Department, Patan, 2013-14).

Soil Fertility Indices/Rainfall

The soil in Patan District in general pH is Neutral. Some parts of the Santalpur and Sami Talukas adjoining to Kachchh district have saline soil. Electricity conductivity is medium. Organic carbon is low. Nitrogen and phosphorus content of the soil is low & medium respectively. Potash is high. So, overall, the soil fertility indices are satisfactory from the point of view of agriculture. The average rainfall during 1982-2011 years is 538 mm (District Agriculture Office, Patan, 2013-14).

Major Crops

Pearl millet, Cotton, Castor, Green Gram, Black Gram, Sesame, fodder crop Sorghum are major Kharif Crops. Mustard, Wheat, Cumin, Gram and Lucerne are major Rabi crops of the District.

Land holding

As per agriculture census 2010-11, total no of farmers are 152162 and they held total 407830 hectares land. Average land holding is 2.68 hectares per farmer (Agriculture Census 2010-11, Agriculture Department, Gandhinagar).

Live stock Population

As per livestock census, Cow and buffalos are the main cattle in the district. Cow population stands at 130300. The number of buffaloes in the district is 372440. The other domestic animals are goats, sheep and Camel. Total Population of animals stands at 625724.

Patan describes as arid and semi-arid region with temperature and limited growth period of less than 100 days. The rainy season being short (July - August), the biggest problem in both agriculture and daily life is water. The water is very precious due to scarce and bad quality of ground water. The high temperatures, sandy soils, scarce water and high wind velocity combined together make very precarious agricultural situation in the region that often leads to water stress during post-anthesis and grain development period in kharif crops.

Contrarily, high temperatures, both during seeding and maturity are the main yield limiting factors in Rabi crops. The summer and spring crops are feasible only where water is available. As such the selection of crop depends primarily on quantum and distribution of rainfall, water availability, appropriate temperature window and such other natural resources.

Agriculture is highly diversified in the district. Pearl millet is the most dominant crop followed by cotton, rapeseed, mustard, wheat, castor, guar, mungbean, maize, sesamum and cumin. Isabgul is the main source of natural fibre. The productivity of castor, potato, guar, cotton and wheat have envisaged significant enhancement. All the technological revolutions in seed production of cotton inclusive of Hybrid cotton technology and BT cotton technology belong to north Gujarat.

4.3 Land Utilization

The land use classification of Patan district is presented in the table 4.1 and table 4.2:

Table 4.1: Land Use and Land Utilization in Patan District (2014-15)

Sr	Land Use	Use in Hect.	% Share of Land
1	Area under forests	46526	8.2
2	Land not available for cultivation	60705	10.7
3	Other uncultivated land excluding fallow	42389	7.5
4	Fallow land	34002	6.0
5	Net Irrigated Area	383271	67.6
	Total Area	**566893**	**100.0**

Source: District Statistical Outline, Patan, 2014-15

The table 4.1 presents that 8.2 percent is forest area and 67.6 percent land is net irrigated area in the district. On the other hand 6.0 percent of the area in the region is fallow land and around 7.5 percent is other uncultivated land. In district 10.7 percent of the land is not available for cultivation due to natural conditions. Land unavailable for cultivation is described in the table 4.2:

Table 4.2: Land Unavailable for Cultivation in Patan District (2014-15)

Sr	Land Use	Use in Hect.	% Share of Land
1	Barren uncultivable land	15538	25.6
2	Land under non agriculture uses	45167	74.4
	Land unavailable for cultivation	**60705**	**100.0**

Source: District Statistical Outline, Patan, 2014-15

The table 4.2 shows that out of total land not available for cultivation, 25.6 percent is barren land and 74.4 percent land is under non agriculture uses.

The taluka wise land use classification is shown in the table 4.3:

It is shown from the table 4.3 that highest forest area 27.4 percent is found in Santalpur taluka. It is also noticed that Chanasma, Patan and Sidhpur taluka is without forest area. The highest net area sown is found in Patan taluka with 79.2 percent and it is followed by Chanasma and Sidhpur with 77.5 percent and 77.0 percent respectively. The highest percent of fallow land is found in Harij taluka with 17.6 percent and lowest in Patan taluka with 1.0 percent.

It is also noticed from the table 4.3 that the lowest percentage of non-agriculture use land is found in Harij taluka with 0.1 percent and it is followed by Chanasma and Sidhpur taluka with 0.4 percent and 1.2 percent respectively.

4.4 Size of Land Holdings

All land which is used wholly or partly for agricultural production and it is operated as one technical unit by one person alone or with others without regard to the title, legal form, size or location and a person who has the responsibility for the operation of the agricultural holding and who exercises the technical initiative and is responsible for its operation. He may have full economic responsibility or may share it with others. The operational holdings may be individual / joint /institutional.

Individual: If the holding is being operated either by one person or by a group of person who are the member of the same household, such holding will be considered as an individual holding.

Joint: If two or more person belonging to different households, share jointly as partners in the economic and technical responsibility for the operation of an agricultural holding, such holding will be considered as joint holding.

Institutional: Holdings such as government farms of sugarcane factories, cooperative farms, land managed by trust would be treated as institutional holdings. The farmers were of different farm categories i.e. marginal (< 1 hect.), small (1-2 hect.), semi-medium (2-4 hect.), medium (4-10 hect.) and large (> 10 hect.). The number and area of the operational holdings is presented in table 4.4:

Table 4.3: Taluka wise Land Use Classification (2014-15)

Sr	Taluka	Forest Area		Land put to non agricultural uses		Barren & uncultivable land		Cultivable land		Permanent pastures & other grazing land		Fallow land		Net area sown		Total land use
		No	%	No	%	No	%	No	%	No	%	No	%	No	%	No
1	Chanasma	0	0.0	180	0.4	4950	10.8	590	1.3	2870	6.3	1690	3.7	35350	77.5	45630
2	Harij	550	1.3	53	0.1	2794	6.8	1164	2.8	2462	6.0	7197	17.6	26674	65.2	40894
3	Patan	0	0.0	1800	1.8	10695	10.4	46	0.0	7751	7.6	1017	1.0	81069	79.2	102378
4	Radhanpur	1690	2.9	1513	2.6	5163	8.7	16	0.0	3251	5.5	5887	10.0	41615	70.4	59135
5	Sami	8753	5.8	6113	4.0	6907	4.6	5000	3.3	6863	4.5	15241	10.1	102108	67.6	150985
6	Santalpur	35533	27.4	5426	4.2	11536	8.9	5823	4.5	1885	1.5	2432	1.9	67005	51.7	129640
7	Sidhpur	0	0.0	453	1.2	3122	8.2	1409	3.7	3259	8.5	538	1.4	29450	77.0	38231
	Patan	**46526**	**8.2**	**15538**	**2.7**	**45167**	**8.0**	**14048**	**2.5**	**28341**	**5.0**	**34002**	**6.0**	**383271**	**67.6**	**566893**

Source: District Statistical Outline, Patan, 2014-15

Table 4.4: Number & Area (ha.) of Operational Holders according To Size Class & Social Groups (2005-06 & 2010-11)

Sr. No	Size Class	Year	Institutional		SC		ST		Others		All Social Group		Avg. Land Hold. per	% Size against	% Holding of	% Holding
			No.	AREA	No.	AREA	No.	AREA	No.	AREA	No.	AREA	Person (All Social Groups)	Total Area	SCs	of STs
1	Marginal	2005-06	13	4	1351	760	179	74	41332	22063	42875	22901	0.5	5.6	3.2	0.4
	(below 1 hect.)	2010-11	13	3.66	1524	826.65	179	70.7	46544	24457.6	48260	25358.61	0.5	6.6	3.2	0.4
2	Small	2005-06	6	9	1516	2225	140	207	36823	53797	38485	56238	1.5	13.8	3.9	0.4
	(1.00 to 1.99hect.)	2010-11	6	9.37	1536	2231.68	145	212.26	39612	57695.2	41299	60148.51	1.5	15.5	3.7	0.4
3	Semi Medium	2005-06	7	22	1661	4720	214	611	37507	106493	39389	111846	2.8	27.4	4.2	0.5
	(2.00 to 3.99 hect.)	2010-11	7	21.54	1519	4278.39	204	581.1	37199	104845.7	38929	109726.7	2.8	28.3	3.9	0.5
4	Medium	2005-06	9	64	1050	6047	226	1338	26644	157281	27929	164730	5.9	40.4	3.8	0.8
	(4.00 to 9.99hect.)	2010-11	9	64	1148	6696	162	939.38	22420	130440.8	23739	138140.2	5.8	35.7	4.8	0.7
5	Large	2005-06	33	1129	92	1621	21	324	3338	49041	3484	52115	15.0	12.8	2.6	0.6
	(10.00 & Above hect.)	2010-11	33	1128.55	83	1318.73	17	219.75	2025	51060.58	2158	53727.61	24.9	13.9	3.8	0.8
All Classes		**2005-06**	**68**	**1227**	**5670**	**15374**	**780**	**2554**	**145644**	**388675**	**152162**	**407830**	**2.7**	**100.0**	**3.7**	**0.5**
		2010-11	**68**	**1227**	**5810**	**15350.99**	**707**	**2023.19**	**147800**	**368499.9**	**154385**	**387101.1**	**2.5**	**100.0**	**3.8**	**0.5**

Source: Agriculture Census, 2005-06 & 2014-15, Govt. of Gujarat

The table 4.4 reveals that the total number of operational holdings increased to 154385 in the year 2010-11 from 152162 during the year 2005-06. The total area of operational holdings is found to be 387101.5 hectares in the year 2010-11, which is decreased from 407830 hectares in the year 2005-06. This decreasing is may be due to conversion of agriculture land into non-agriculture land.

The number of operational holdings under scheduled caste group has increased to 5810 in the year 2010-11 from 5670 in the year 2005-06 while the area decreased to 15350.99 hectares from 5374 hectares in the year 2005-06. Under scheduled tribe group the number of operational holdings decreased to 707 in the year 2010-11 from 780 during the year 2005-06 and also the area decreased in the year 2010-11 to 2023.19 hectares from 2554 hectares in the year 2005-06. In respect of other social groups the number of operational holdings and area decreased in the year 2010-11.

The taluka wise number and area of operational holdings is presented in the table 4.5:

The table 4.5 reveals that the number of land holdings increased in Chanasma taluka to 23762 during the year 2010-11 from 23230 in the year 2005-06 while the area of holdings decreased in the year 2010-11 to 32916 hectares from 38495 hectares during the year 2005-06. In Harij taluka both the number of holdings and area increased to 11741 and 32198 hectares respectively in the year 2010-11 from 9891 and 31778 hectares respectively in the year 2005-06. In Sidhpur taluka the number of holdings increased while the area decreased in the year 2010-11.

4.5 Horticulture

Over the years, horticulture has emerged as one of the potential agricultural enterprise in accelerating the growth of economy. Its role in the country's nutritional security, poverty alleviation and employment generation programmes are becoming increasingly important. It offers not only a wide range of options to the farmers for crop diversification, but also provides ample scope for sustaining large number of agro-industries which generate huge employment opportunities on account of significant increase in production in horticultural crops across the country, a golden revolution is in the offing and India has emerged as a leading player in the global scenario. It has now emerged as the world's largest producer of and explorer of tea, coffee, cashew nut, spices exports of fresh and processed fruits, vegetables, cut flowers, dried flowers have also been picking up. As a result of a number of thoughtful research, technological and policy initiative and inputs, horticulture in India, today, has become a sustainable and viable venture for the small, marginal and big farmers. It is a matter of satisfaction that their food consumption levels and household income have increased.

4.6 Horticulture Development in Gujarat

Looking to the importance of horticulture crops, the State Government focuses and giving considerable emphasis on the development of horticultural crops viz. Fruits, Vegetables, Spices and Flowers. As a result of various steps taken by State Government, area under Horticultural crops has increased significantly. The major fruit crops grown in Gujarat are Banana, Mango, Citrus and Sapota (Chikoo). The productivity of fruit crops is estimated at 20.31 MT/Hectare. The major vegetables are Onion, Potato, Brinjal, Tomato, Okra and Cucurbits. The average

Table 4.5: Taluka Wise Number & Area (ha.) of Operational Holders in Patan District (2005-06 & 2010-11)

Sr.	Taluka	Unit	Marginal		Small		Others		Total	
			2005-06	2010-11	2005-06	2010-11	2005-06	2010-11	2005-06	2010-11
1	Chanasma	No.	10224	12458	6538	6305	6468	4999	23230	23762
		Area	5616	6561	9367	8984	23511	17371	38494	32916
2	Harij	No.	1353	2373	2550	3334	5858	6034	9761	11741
		Area	780	1329	3791	4907	27132	25962	31703	32198
3	Patan	No.	19438	20112	13513	12919	13600	11402	46551	44433
		Area	10387	10588	19436	18512	50895	60927	80718	90027
4	Radhanpur	No.	890	1018	3360	3826	8463	7989	12713	12833
		Area	482	562	5041	5714	38879	32712	44402	38988
5	Sami	No.	1039	1380	3764	5077	18455	16876	23258	23333
		Area	598	839	5716	7588	98750	83899	105064	92326
6	Santalpur	No.	521	731	3513	4734	13521	13303	17555	18768
		Area	362	504	5380	7193	72175	63527	77917	71224
7	Sidhpur	No.	9280	10188	5247	5104	4437	4223	18964	19515
		Area	4600	4975	7508	7251	17348	17196	29456	29422
	District Total	**No.**	**42875**	**48260**	**38485**	**41299**	**70802**	**64826**	**152162**	**154385**
		Area	**22901**	**25359**	**56239**	**60149**	**328690**	**301594**	**407830**	**387102**

Source: Agriculture Census, 2005-06 & 2010-11, Govt. of Gujarat

productivity of vegetables is estimated at 19.42 MT/Hectare. The State mainly produces spices Viz. cumin, Fennel and Garlic. The State enjoys monopoly in seed spices. Isabgul is prominent medicinal crop grown in the State. Area under flowers like Rose, Lily and Marigold is increasing day by day in the State. There is a scattered cultivation of medicinal plants like; Aloevera, Sena, Gugal in the State. Due to the continuous efforts made by the State Government like Krushi Mahotsav, State is in leading position in Onion, Potato, Banana, Lime, Papaya and also introduced new horticulture crops like Cashew nut, Pamaroza, Sweet Orange and medicinal crops. State has taken a lead in the sector of establishing Greenhouses and produces high value flowers like Dutch Rose, Gerbera and Carnation.

With a view to double the horticulture production and income by adopting end to end approach with simultaneous development of post harvest infrastructure and marketing facilities. "Gujarat State Horticultural Mission (GSHM)" a registered society has been formed for implementation of "National Horticultural Mission (NHM)'' in the state. The mission is being implemented in 16 potential districts and covers important crops of the state viz, Mango, Chikoo, Aonla, Banana, Papaya, Lime, Cumin, Fennel, Flowers, Medicinal and Aromatie crops etc. Non mission districts are also covered under State plans schemes on mission mode programme.

Horticulture covers a wide variety of fruits, vegetables, tuber crops, flower crops, medicinal and aromatic plants, plantation crops and spices. Horticulture crops have inherent advantage of providing higher productivity per unit of land compared to other crops, resulting in higher income and higher employment generation in rural Areas. Gujarat has a wide range of soil types, rainfall pattern, temperature regimes, and irrigation facilities. This diverse agro-climatic situation across the state holds promise for development of the horticulture sector in a big way. Horticulture crops suited to subtropical and tropical climates can be grown in the state. The horticulture sector is labour intensive providing more employment and because of value addition potential it gives higher income. Fruits and Vegetable cultivation can provide sustained income and work to small and marginal farmers. Fruit and vegetables are highly perishable commodities and post-harvest losses are around 30 percent. These losses need to be reduced through better post-harvest management measures of packing, transportation, storage and processing (Source: Horticulture in Gujarat 2011-12 & 2012-13 Report, Directorate of Economics and Statistics, Government of Gujarat, Gandhinagar).

(A) Fruit

Fruits commonly known as goldmine of vitamins, minerals and fibre are ideal to consummate least 4-5 servings in a day. Since, they are in the natural form, account for largest part of water and 100 percent cholesterol free, it's much easier for the body to process and absorb the vitamins and minerals from the fresh fruits. The major crops covered under fruit crops are chiku, citrus, ber, aonla, pomegranate, etc in the Patan district. The area, production, and yield of fruits production is shown in the table 4.6:

The table 4.6 shows that the area under fruit crop was 1851 hectares in the year 2011-12 which increased to 2200 hectares during the year 2014-15. On the other side production of total fruits increased to 23292 MT during the year 2014-15 and also the productivity of fruits increased to

Table 4.6: Area, Production & Yield of Fruits in Patan District

(Area in Ha., Prod. in M.T, Yield in M.T./Ha)

Sr	Name of Crop	2011-12			2012-13			2013-14			2014-15		
		Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield
1	Mango	81	689	8.51	82	697	8.5	83	415	5	84	420	5
2	Chiku	148	1346	9.09	148	1345	9.09	148	1345	9.09	148	1359	9.2
3	Lemon & Limes	745	8344	11.2	747	8366	11.2	827	8684	10.5	827	8766	10.6
4	Ber	327	3270	10	343	3609	10.52	345	3629	10.52	367	3861	10.5
5	Bananas	0	0	0	1	37	37	0	0	0	0	0	0.0
6	Guava	10	80	8	10	89	8.9	10	89	8.9	10	89	8.9
7	Pomegranate	300	3300	11	330	3630	11	387	4257	11	454	5039	11.1
8	Kharek	40	355	8.88	45	393	8.73	64	333	5.2	87	452	5.2
9	Papayas	35	2100	60	35	2100	60	37	1480	40	43	1785	41.5
10	Aonla	150	1283	8.55	150	1283	8.55	152	1299	8.55	152	1299.6	8.6
11	Coconut	8	70	8.75	8	70	8.75	8	6400	800	8	64	8.0
12	Others	7	203	28.93	7	203	29	20	152	7.59	20	157	7.9
	Total	**1851**	**21040**	**11.37**	**1906**	**21822**	**11.45**	**2081**	**28083**	**13.49**	**2200**	**23292**	**10.6**

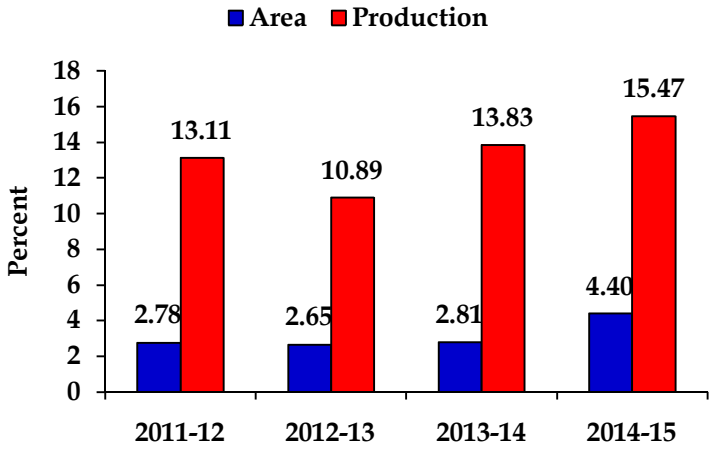
Source: District Horticulture Office, Patan

10.6 in the year 2014-15. The largest area was covered under lemon and limes with 745 hectares during the year 2011-12 which is followed by ber, pomegranate and aonla with 327, 300 and 150 hectares respectively but during the year 2014-15 the largest area under lemon and limes increased to 827 hectares and it is followed by pomegranate, ber and aonla with 454 hectares, 367 hectares and 152 hectares respectively. On the other side during the year 2014-15, lemon and limes has the highest production of 8766 MT which is followed by pomegranate, ber and aonla with the production of 5039 MT, 3861 MT and 1299.6 MT respectively in the year 2014-15.

The percentage distribution of area and production of fruits is shown in the figure 4.1:

The figure 4.1 illustrates that the percentage of area under fruits from the total horticulture area was 2.78 percent in the year 2011-12 which increased to 4.40 percent during the year 2014-15. On the other side the production of fruits was 13.11 percent from the total horticulture production which increased to 15.47 percent during the year 2014-15.

Figure 4.1
Year Wise Percentage Distribution of Area & Production of Fruits



Source: District Horticulture Office, Patan

(B) Vegetables

The vegetables are important sector under horticulture because vegetables are daily used by all the people in their regular diet in one or other way. Vegetables promotes good immune system, vegetables are healthy, low in calories and easy to digest as well. Vegetables are important crops due to the opportunities related to processing industry. The data for main vegetables like potato, onion, bringle, cabbage, lady finger, tomato, cauliflower, etc are collected for the Patan district.

The area, production and yield of vegetables for 2011-12 to 2014-15 are shown in the table 4.7:

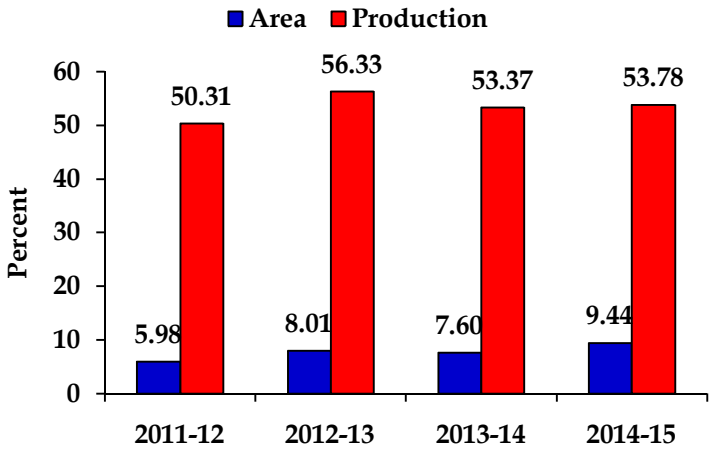
The table 4.7 reveals that the area under vegetables was covered 3989 hectares in 2011-12 while it increased to 4722 hectares during the year 2014-15. On the other side the production of vegetables was 19989 MT in 2011-12 which is also increased to 80979 MT during the year 2014-15 but the productivity was decreased to 17.1 MT/Ha in 2014-15 from 20.24 MT/Ha in 2011-12.

The table 4.7 also shows that the largest area was covered by potato with 800 hectares and it is followed by cluster bean, french beans and brinjal with 780 hectares, 592 hectares and 270 hectares during the year 2011-12 but during the year 2014-15, the largest area was covered by potato with 900 hectares and it was followed by cluster bean, velavala and French beans with 820 hectares, 745 hectares and 600 hectares respectively. During the year 2011-12 the highest production was found of potato with 18432 MT and was followed by cluster beans and French beans with 8664 and 5921 MT respectively but in the year 2014-15 the highest production was found of potato with 13363 MT and was followed by velavala, cluster bean and french beans with 9640, 9143, and 6012 MT respectively.

The percentage distribution of area and production of vegetables is shown in the figure 4.2:

The figure 4.2 illustrates that the percentage of area under vegetable production was 5.98 percent from the total horticulture area and the production of vegetables was 50.31 percent from the total horticulture production during the year 2011-12 but during the year 2014-15 the area and production of vegetables increased to 9.44 percent and 53.78 percent respectively. The main reason behind is that fruits were more produced over the years in comparison to vegetables to earn more.

Figure 4.2: Year Wise Percentage Distribution of Area & Production of Vegetables



Source: District Horticulture Office, Patan

(C) Spices

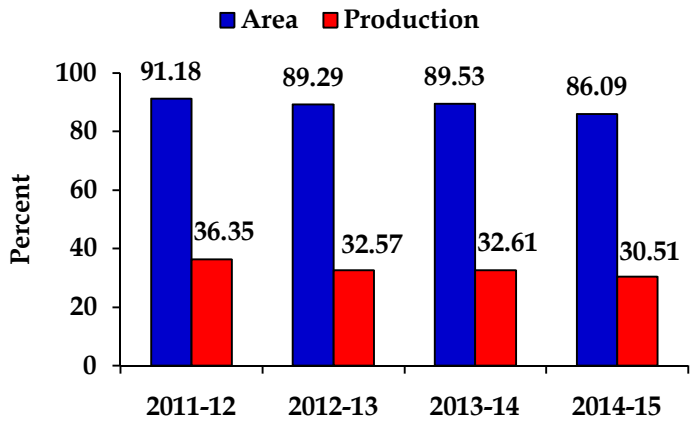
The major spices covered under horticulture is cumin, fennel, chilli, fenugreek,isabgul, ajawan, suwa, etc. the area, production and yield of various spices is shown in the table 4.8:

The table 4.8 presents that during the year 2011-12 the largest area for spices was covered by cumin cultivation with 41700 hectares and it was followed by suva and fennel with 11600 hectares and 6000 hectares respectively but in 2014-15 the area under cumin was decreased to 35500 hectares and the area for suva decreased to 3300 hectares.The table 4.8 also reveals that during the year 2011-12, the highest production was found for cumin with 29190 MT and it is followed by suva and fennel with 16240 and 10260 MT respectively but during the year 2014-15, the production of cumin increased to 35500 MT and the production of suva was decreased to 4785 MT but the productivity of suva is more than cumin.

The percentage distribution of area and production of spices is shown in the figure 4.3:

The figure 4.3 illustrates that the percentage of area under spices was 91.18 percent during the year 2011-12 and the production was 36.35 percent but in the year 2014-15 the area under spices decreased to 86.09 percent and the production also decreased to 30.51 percent.

Figure 4.3: Year Wise Percentage Distribution of Area & Production of Spices



Source: District Horticulture Office, Patan

Table 4.7: Area, Production &Yield of Vegetable Crops in Patan District

(Area in Ha., Prod. In M.T, Yield in M.T./Ha)

Sr	Name of Crop	2011-12			2012-13			2013-14			2014-15		
		Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield
1	Potato	800	18432	23.04	827	19054	23.04	580	13363	23.04	900	19989	22.2
2	Onion	0	0	0	7	154	22	0	0	0	0	0	0.0
3	Bringle	270	5400	20	274	5480	20	298	5520	18.52	321	5971	18.6
4	Cabbage	125	2319	18.55	128	2374	18.55	155	2759	17.8	155	2821	18.2
5	Lady Finger	119	1166	9.8	170	1666	9.8	184	1803	9.8	192	1882	9.8
6	Tomato	32	784	24.5	35	858	24.51	58	1421	24.5	62	1528	24.6
7	Cauliflower	186	3441	18.5	194	3589	18.5	194	3589	18.5	194	3608	18.6
8	Cluster Bean (Guar)	780	8664	11.11	785	8721	11.11	800	8888	11.11	820	9143	11.2
9	French Beans	592	5920	10	593	5930	10	600	6000	10	600	6012	10.0
10	Velavala	143	2328	16.28	740	9540	12.89	740	9538	12.89	745	9640	12.9
11	Others	942	32281	34.28	2010	55497	27.61	2010	55496	27.61	733	20385	27.8
	Total	**3989**	**80735**	**20.24**	**5763**	**112863**	**19.58**	**5619**	**108377**	**19.29**	**4722**	**80979**	**17.1**

Source: District Horticulture Office, Patan

Table 4.8: Area, Production &Yield of Spices in Patan District
(Area in Ha., Prod. In M.T, Yield in M.T./Ha)

Sr	Name of Crop	2011-12			2012-13			2013-14			2014-15		
		Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield
1	Cumin	41700	29190	0.7	44910	35198	0.78	57200	44617	0.78	35500	31950	0.90
2	Fennel	6000	10260	1.71	6250	10802	1.73	2800	4844	1.73	3100	7130	2.30
3	Chilli	220	718	3.26	222	834	3.76	222	377	1.7	0	0	0.00
4	Garlic	0	0	0	5	28	5.6	0	0	0	0	0	0.00
5	Coriander	13	20	1.54	13	22	1.69	13	22	1.69	0	0	0.00
6	Turmeric	3	45	15	3	47	15.67	3	47	15.67	3	41	13.67
7	Fenugreek	855	1454	1.7	869	1653	1.9	875	1663	1.9	875	1733	1.98
8	Isabgul	200	250	1.25	210	263	1.25	0	0	0	100	114	1.14
9	Ajawan	200	160	0.8	200	178	0.89	200	178	0.89	200	190	0.95
10	Suva	11600	16240	1.4	11590	16226	1.4	4900	6860	1.4	3300	4785	1.45
	Total	**60791**	**58337**	**0.96**	**64272**	**65251**	**1.02**	**66213**	**58608**	**0.89**	**43078**	**45943**	**1.07**

Source: District Horticulture Office, Patan

Table 4.9: Area, Production &Yield of Flowers in Patan District*(Area in Ha., Prod. In M.T, Yield in M.T./Ha)*

Sr	Name of Crop	2011-12			2012-13			2013-14			2014-15		
		Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield
1	Rose	17	172	10.12	18	187	10.39	18	157	8.7	21	183	8.71
2	Marigold	16	128	8	18	154	8.56	18	162	9	18	165	9.17
3	Mogra	2	16	8	2	16	8	2	16	8	2	16	8.00
4	Lilly	0	0	0	0	0	0	0	0	0	0	0	0
5	Others	5	43	8.6	6	59	9.83	6	48	8	0	0	0
	Total	**40**	**359**	**8.98**	**44**	**416**	**9.45**	**44**	**383**	**8.7**	41	364	8.88

Source: District Horticulture Office, Patan

(D) Flowers

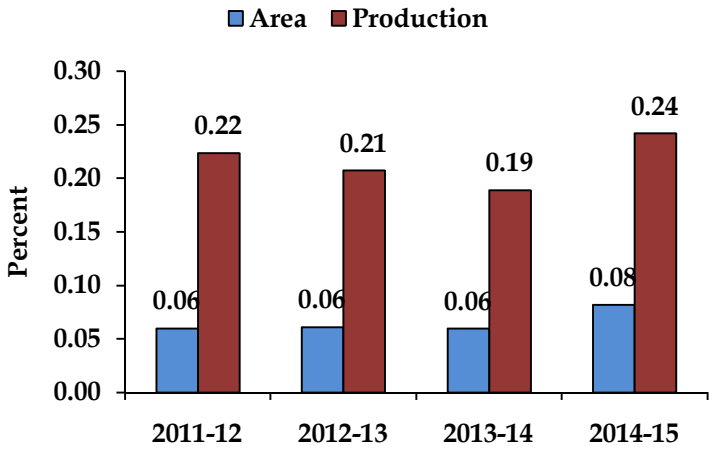
The area, production and yield of flowers for 2010-11 to 2013-14 are shown in the table 4.9:

The table 4.9 shows that during the year 2011-12, the total area for flower cultivation was 40 hectares which increased to 41 hectares during the year 2014-15. The area for rose and marigold was covered 17 hectares and 16 hectares respectively during the year 2011-12 but in the year 2013-14 it increased to 21 and 18 hectares for rose and marigold respectively.

The table 4.9 also describes that the production of rose and marigold was 172 MT and 128 hectares during the year 2011-12 while in 2014-15 the production of rose and marigold increased to 183 MT and 1652 MT respectively. The percentage distribution of area and production of flowers during 2010-11 to 2014-15 is shown in the figure 4.4:

The figure 4.4 illustrates that during the year 2011-12, the area under flower cultivation was 0.06 percent and the production of flowers was 0.22 percent while the percentage area for flowers was increased to 0.08 percent during the year 2014-15 and the production of flowers increased to 0.24 percent.

Figure: 4.4: Year Wise Percentage Distribution of Area & Production of Flowers



Source: District Horticulture Office, Patan

4.7 Major Crops

District agriculture has mainly two seasons i.e., Rabi and Kharif. After the availability of irrigation water from Sardar Sarovar Narmada Canal and Sujlam Suflam district has hone agriculture production and productivity by, shifting of cropping pattern and inclusion of third season i.e', Zyad'. Kharif season is based on rainfall and major crops grown during Kharif are Castor, Bt Cotton, Bajra, Deshi Cotton, Fodder Jowar and Pulses. Mustard, Wheat, Cumin, Fennel, Pulse (Gram) and fodder crop (Lucerne) are main Rabi crops of the District. Summer Bajra and Guar gum area has also increase as summer crops in the District.

Agriculture is a field which depends on environment and different resources. Thus, agriculture changes after every 100 miles and gives a peculiarity to an area. Patan district also has renowned quality of agriculture produce like as Patan taluka is famous for Carrot, Chanasma taluka for fennel, Sami taluka for unirrigated gram and organic cumin. Organic cumin of this area is appreciated throughout India and fetches good price to famers.

The taluka wise crop grown area in Patan district is presented in the table 4.10:

Table 4.10: Taluka Wise Crop Grown Area in Patan District (2011-12 to 2014-15) (in hect.)

Sr	Taluka	Year	Kharif	Rabi	Summer	Total
1	Chanasma	2011-12	31990	18710	2560	53260
		2012-13	31630	18295	3080	53005
		2013-14	31945	16985	2870	51800
		2014-15	31750	19490	3600	54840
2	Harij	2011-12	29506	9530	3550	42586
		2012-13	29332	10706	3115	43153
		2013-14	28366	12826	3317	44509
		2014-15	31250	8510	3050	42810
3	Patan	2011-12	66027	42965	13435	122427
		2012-13	66052	42265	15795	124112
		2013-14	66040	39580	14360	119980
		2014-15	63900	43100	13250	120250
4	Radhanpur	2011-12	38900	15770	1710	56380
		2012-13	36550	19080	1700	57330
		2013-14	41040	19365	1085	61490
		2014-15	38000	14085	2660	54745
5	Sami	2011-12	89425	45505	2770	137700
		2012-13	94740	36922	1270	132932
		2013-14	97958	41905	533	140396
		2014-15	90865	40905	3410	135180
6	Santalpur	2011-12	52010	22965	1270	76245
		2012-13	57010	20150	675	77835
		2013-14	67260	34918	440	102618
		2014-15	70835	23020	1960	95815
7	Sidhpur	2011-12	25616	16860	8290	50766
		2012-13	26010	16755	4560	47325
		2013-14	25415	14655	2585	42655
		2014-15	25300	16660	6400	48360
	District Total	**2011-12**	**333474**	**172305**	**33585**	**539364**
		2012-13	**341324**	**164173**	**30195**	**535692**
		2013-14	**358024**	**180234**	**25190**	**563448**
		2014-15	**351900**	**165750**	**34330**	**551980**

Source: District Agriculture Office, Patan, 2015

The table 4.10 reveals that total crop grown area was 539364 hectares in the year 2011-12 which decreased in the year 2012-13 to 535692 hectares. In 2013-14, it again increased to 563448 hectares but in 2014-15 the area decreased to 551980 hectares.

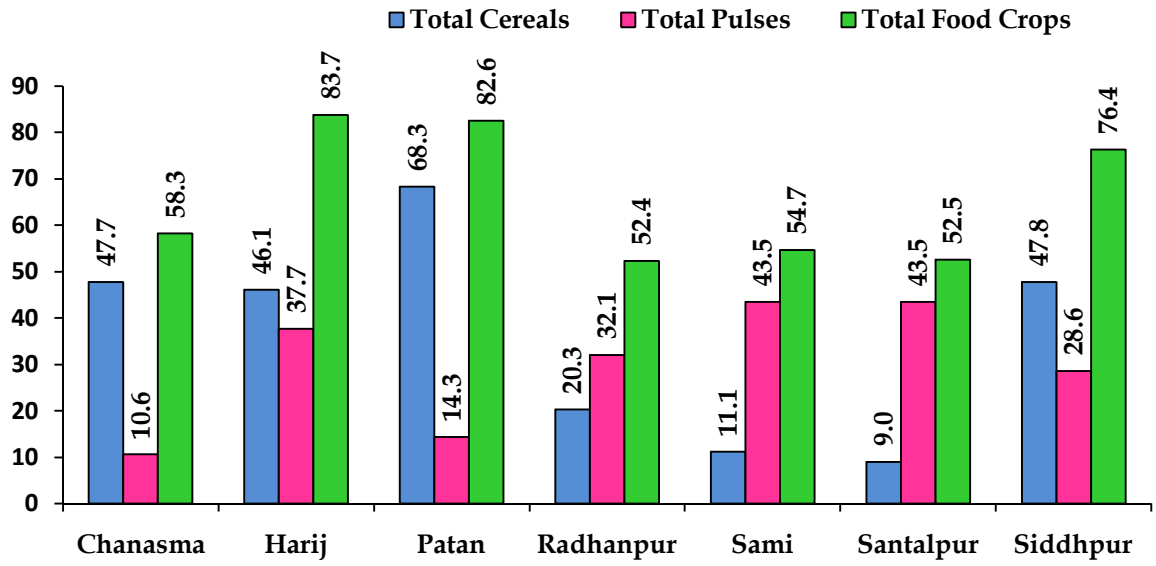
The major factors that have impeded agricultural productivity in the Patan District are depletion of water table, deterioration of soil and water conditions due to salinity ingress, enatic rainfall, recurent droughts / scarcity is the major factors that have impeded agricultural

productivity in the Patan District.The taluka wise percentage cropping pattern for selected food crops is presented in the table 4.11:

The table 4.11 describes the cropping pattern of selected food crops for the year 2014-15. The highest area under cereals production is found in Patan taluka with 68.3 percent followed by Sidhpur and Chanasma taluka with 47.8 percent and 47.7 percent respectively during the year 2014-15. On the other side highest area under pulses is found in Sami and Santalpur taluka with 43.5 percent in both the taluka.

The taluka wise area under food crops is shown in the figure 4.5:

Figure 4.5: Taluka Wise Area under Food Crops (2014-15)



The figure 4.5 illustrates the total area under food crops in Patan district. The highest percentage of area under food crops is found in Harij taluka with 83.7percent and it is followed by Patan and Sidhpur taluka with 82.6 percent and 76.4percent respectively during the year 2014-15.

The taluka wise percentage of cropping pattern for selected commercial crops is presented in the table 4.12:

The table 4.12 describes the area under commercial crops in Patan district for the year 2014-15. In Chanasma taluka 40.5 percent area is used for production of oilseeds and 38.6 percent area is under fodder cropping. In Radhanpur 56.2 area of commercial crops is used for fodder. The table shows that 16.1 percent area used for cotton production, 44 percent for fodder and 39.5 percent for oilseeds. The production of groundnuts, sesame, mustard seeds and tobacco is very less with 0.02 percent, 0.5 percent, 7.3 percent and 0.3 percent respectively.

Table 4.11: Taluka-wise Cropping Pattern for Selected Food Crops (2014-15) (in hectares)

Sr	Taluka	Area undue Food	Wheat	Oat	Bajra	Maize	Total Cereals	Chana	Mung	Urad	Guwar	Other Pulses	Total Pulses	Total Cereals & Pulses
1	Chanasma	14171	6300	120	265	75	6760	0	25	225	1230	20	1500	8260
			(44.5)	(0.8)	(1.9)	(0.5)	(47.7)	(0.0)	(0.2	(1.6)	(8.7)	(0.1)	(10.6)	(58.3)
2	Harij	13033	2830	435	1920	820	6005	55	235	1275	3125	220	4910	10915
			(21.7)	(3.3)	(14.7)	(6.3)	(46.1)	(0.4)	(1.8)	(9.8)	(24.0)	(1.7)	(37.7)	(83.7)
3	Patan	29421	14500	185	5290	115	20090	0	25	970	3140	80	4215	24305
			(49.3)	(0.6)	(18.0)	(0.4)	(68.3)	(0.0)	(0.1)	(3.3)	(10.7)	(0.3)	(14.3)	(82.6)
4	Radhanpur	13709	2005	0	750	30	2785	100	245	200	3850	0	4395	7180
			(14.6)	(0.0)	(5.5)	(0.2)	(20.3)	(0.7)	(1.8)	(1.5)	(28.1)	(0.0)	(32.1)	(52.4)
5	Sami	32138	3000)	0	537	45	3582	4038	712	625	8080	537	13992	17574
			(9.3)	(0.0)	(1.7)	(0.1)	(11.1)	(12.6)	(2.2)	(1.9)	(25.1)	(1.7)	(43.5)	(54.7)
6	Santalpur	24601	2007	0	203	0	2210	200	307	0	9870	335	10712	12922
			(8.2)	(0.0)	(0.8)	(0.0)	(9.0)	(0.8)	(1.2)	(0.0)	(40.1)	(1.4)	(43.5)	(52.5)
7	Sidhpur	16702	6150	560	975	300	7985	0	826	870	2865	210	4771	12756
			(36.8)	(3.4)	(5.8)	(1.8)	(47.8)	(0.0)	(4.9)	(5.2)	(17.2)	(1.3)	(28.6)	(76.4)
	Total	**143775**	**36792**	**1300**	**9940**	**1385**	**49417**	**4393**	**2375**	**4165**	**32160**	**1402**	**44495**	**93912**
			(25.6)	**(0.9)**	**(6.9)**	**(1.0)**	**(34.4)**	**(3.1)**	**(1.7)**	**(2.9)**	**(22.4)**	**(1.0)**	**(30.9)**	**(65.3)**

Source: District Statistical Outline, Patan, 2014-15, Data in () are in percentage

Table 4.12: Taluka-wise Cropping Pattern for Selected Commercial Crops (2014-15) (in hectares)

Sr	Taluka	Total Area under Commercial Crops	Cotton	Groundnut	Sesame	Mustard Seed	Castor Seeds	Total oil Seeds	Tobacco	Fodder
1	Chanasma	37465	7820	0	15	5370	9775	15160	30	14455
			(20.9)	(0.0)	(0.0)	(14.3)	(26.1)	(40.5)	(0.1)	(38.6)
2	Harij	32650	2800	0	185	470	11970	12625	365	16860
			(8.6)	(0.0)	(0.6)	(1.4)	(36.7)	(38.7)	(1.1)	(51.6)
3	Patan	81156	12475	11	95	15400	20945	36451	430	31800
			(15.4)	(0.01)	(0.1)	(19.0)	(25.8)	(44.9)	(0.5)	(39.2)
4	Radhanpur	38623	1855	11	822	210	14000	15043	0	21725
			(4.8)	(0.03)	(2.1)	(0.5)	(36.2)	(38.9)	(0.0)	(56.2)
5	Sami	93784	29083	0	66	651	24500	25217	0	39484
			(31.0)	(0.0)	(0.1)	(0.7)	(26.1)	(26.9)	(0.0)	(42.1)
6	Santalpur	55705	1427	10	405	420	28500	29335	0	24943
			(2.6)	(0.02)	(0.7)	(0.8)	(51.2)	(52.7)	(0.0)	(44.8)
7	Sidhpur	27807	3700	42	75	4330	6900	11347	310	12450
			(13.3)	(0.2)	(0.3)	(15.6)	(24.8)	(40.8)	(1.1)	(44.8)
	Total	**367190**	**59160**	**74**	**1663**	**26851**	**116590**	**145178**	**1135**	**161717**
			(**16.1**)	(**0.02**)	(**0.5**)	(**7.3**)	(**31.8**)	(**39.5**)	(**0.3**)	(**44.0**)

Source: District Statistical Outline, Patan, 2014-15, Data in () are in percentage

4.8 Distribution of Cultivated Land

The distribution of total cultivated land for food crops and commercial crops is shown in the table 4.13:

Table 4.13: Distribution of Cultivated Land Area for Food & Non Food Crops (2014-15) in hect.

Sr	Taluka	Food Crops	Percent	Non Food Crops	Percent
1	Chanasma	14171	9.9	37465	10.2
2	Harij	13033	9.1	32650	8.9
3	Patan	29421	20.5	81156	22.1
4	Radhanpur	13709	9.5	38623	10.5
5	Sami	32138	22.4	93784	25.5
6	Santalpur	24601	17.1	55705	15.2
7	Sidhpur	16702	11.6	27807	7.6
	Total	**143775**	**100.0**	**367190**	**100.0**

Source: District Statistical Outline, Patan, 2014-15,

The table 4.13 shows the spatial distribution of cultivated land varies in different talukas of the region. Sami taluka possesses the largest 22.4 percent of total food crops area. It is followed by Patan and Santalpur taluka with 20.5 percent and 17.1 percent respectively of the total food crop area. The largest non food crops area is also found in Sami taluka with 25.5 percent and it is followed by Patan and Santalpur taluka with 22.1 percent and 15.2 percent respectively.

4.9 Gujarat Horticulture Mission

The Central Government has started National Horticulture Mission from the year 2005-06 for overall development of Horticulture. The Gujarat Government has also registered "Gujarat Horticulture Mission" under the Chairmanship of Principal Secretary of Agriculture. At the district level district mission committee has been formed under the Chairmanship of District Development Officer. The work of Horticulture Mission has been done in the State by this registered mission. Gujarat State Horticulture Mission (GSHM) a registered society has been formed for implementation of NHM in the state. The mission is being implemented in 16 potential districts and covers important horticultural crops of the state viz, Mango, Chiku, Aonla, Banana, Papaya, Lime, Cumin, Fennel, and Flowers, Medicinal and Aromatic crops, etc.

Main objectives of Mission are:

- To provide holistic growth of horticulture sector through area based regionally differentiated strategies, which include research, technology promotion, extension, post harvest management, processing and marketing, in consonance with comparative advantage of each State/region and its diverse agro-climatic features.
- Enhance horticulture production, improve nutritional security and income support to farm households.

- Establish convergence and synergy among on-going and plan programmes, for horticulture development.
- Promote, develop and wisdom and modern scientific knowledge.
- Create employment generation disseminate technologies for horticulture development, through seamless blending of traditional opportunities for skilled and unskilled persons, especially unemployed youth.

4.10 Irrigation and Water

North Gujarat constitutes 23 percent area of Gujarat state where 34 percent of population lives. The biggest problem in agriculture and domestic life is water for drinking and irrigation. Average rainfall of the whole region is 600 mm. it varies a lot and is the highest (around 900 mm) in eastern part of North Gujarat. Despite proportion of irrigated area of cultivated land in North Gujarat is more (49%) than Gujarat (32%) yet it faces severe scarcity of water availability as compared to other regions of Gujarat. The net irrigated area in Patan district is shown in the table 4.14:

Table 4.14: Taluka Wise Net Irrigated Area & Total Cropped Area (2014-15) in hect

Sr	Taluka	Net Irrigated Area	%	Total Cropped Area	%
1	Chanasma	23500	13.3	26000	18.7
2	Harij	12000	6.8	8490	6.1
3	Patan	43900	24.9	58331	41.9
4	Radhanpur	16500	9.4	8760	6.3
5	Sami	31250	17.7	13500	9.7
6	Santalpur	28000	15.9	8625	6.2
7	Sidhpur	21000	11.9	15411	11.1
	Total	**176150**	**100.0**	**139117**	**100.0**

Source: District Statistical Outline, Patan, 2013-14

The table 4.14 reveals that highest net irrigated area was found in Patan taluka with 43900 hectares which is 24.9 percent of total net irrigated area of district during the year 2014-15. On the other side the lowest net irrigated area was found in Harij taluka with 12000 hectares which is 6.8 percent of the total net irrigated area of district. The highest total cropped area is also in Patan taluka with 41.9 percent and it is followed by Chanasma taluka with 18.7 percent of total cropped area. The major source of irrigation is ground water in Patan district. Dug wells and tube wells are the major source of irrigation and consummality cover over 88% of the irrigation resources.

The various sources of irrigation during 2011-12 and 2014-15 are presented in the table 4.15:

Table 4.15: Various Sources of Irrigation (2011-12 & 2014-15)

Sr.	Taluka	Govt. Canal (Km)		Tubewells		Wells	
		2011-12	2014-15	2011-12	2014-15	2011-12	2014-15
1	Chanasma	10	10	1984	1959	750	750
2	Harij	13	18	375	349	275	387
3	Patan	54	54	1900	1860	755	765
4	Radhanpur	12	32	240	230	1014	1419
5	Sami	16	52	385	380	150	175
6	Santalpur	0	26	180	150	87	132
7	Sidhpur	21	21	753	735	1580	1580
	Total	**126**	**213**	**5817**	**5663**	**4611**	**5208**

Source: District Statistical Outline, 2011-12& 2013-14

The table 4.15 shows that the major source of irrigation was tubewells with 5817 number in the year 2011-12 which increased to 5663 tubewells in the year 2014-15 and it was followed by wells with 4611 in 2011-12 which increased to 5208 in the year 2014-15. It included both government and private wells. The length of government canal in Patan district was 126 km during the year 2011-12 which increased to 213 km in the year 2013-14.

4.11 Government Initiatives for Irrigation

(A) Irrigation Ponds

The government initiatives for irrigation are described in table 4.16:

Table 4.16: Irrigation Ponds under Small Irrigation (2015)

Sr	Name of Schemes	Taluka	In (MCFT)	Irrigation (Hectares)
1	Khokla Irrigation Pond	Chanasma	111.82	324.00
2	Chaveli Irrigation Pond	Chanasma	4.80	20.00
3	Bhatsar Irrigation Pond	Chanasma	16.00	81.00
4	Wagel Irrigation Pond	Sami	20.00	80.00
5	Sirwal Irrigation Pond	Harij	6.20	26.00
6	Jamanpur Irrigation Pond	Harij	37.10	253.00
Total 6 Ponds			**195.92**	**784.00**

Source: Irrigation Department, District Panchayat, Patan, 2015

The table 4.16 reveals that Khokla, Chaveli and Bhatsar schemes was started in Chanasma taluka with the capacity of 111.82 MCFT, 4.80 MCFT and 16.0 MCFT respectively from which 324 hectares, 20 hectares and 81 hectares area was irrigated respectively. Two schemes Sirwal and Jamanpur was atarted in Harij taluka with 26 MCFT and 253 MCFT respectively.

(B) Ponds, Checkdam and Other Plans

The various schemes implemented by government for irrigation is discussed in the table 4.17:

Table 4.17: Ponds, Checkdam and Other Plans (2015)

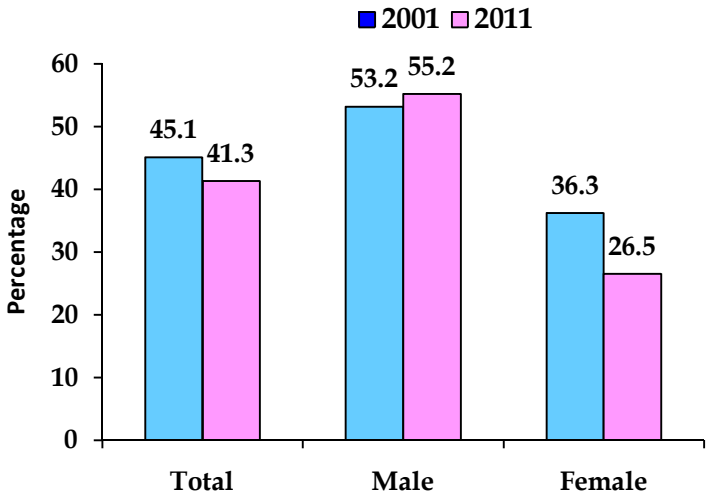
Sr	Taluka	Unit	Underground Checkdam	Surface Checkdam	Ponds	Aadbandh	Tubewells	Reserved Plans	Total
1	Chanasma	No	2	4	24	-	9	24	63
		Hect.	40	20	117	-	262	-	439
2	Harij	No	1	-	14	7	3	1	26
		Hect.	15	-	54	33	62	-	164
3	Patan	No	1	2	43	-	6	12	64
		Hect.	25	05	314	-	144	-	488
4	Radhanpur	No	4	-	1	10	-	7	22
		Hect.	60	-	8	84	-		152
5	Sami	No	1	1	37	31	-	1	71
		Hect.	10	12	205	294	-	-	521
6	Santalpur	No	1	-	9	72	-	2	84
		Hect.	15	-	63	939	-	-	1017
7	Sidhpur	No	8	-	26		-	12	46
		Hect.	155	-	119		-	-	274

Source: Irrigation Department, District Panchayat, Patan, 2015

4.12 Occupational Structure

The work participation rate by sex in Patan district is shown in the figure 4.6:

Figure 4.6
Work Participation Rate by Sex in Patan District (2001-2011)

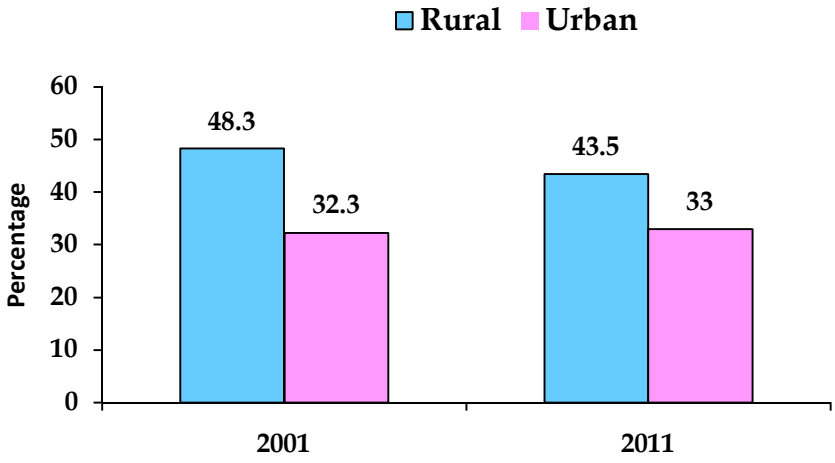


Source: Population Census, 2001 & 2011, Govt. of Gujarat

The figure 4.6 illustrates that the total work participation rate in Patan district has declined in 2011. During the period 2001, the work participation rate was 45.1 percent but during the year 2011, it was decreased to 41.3 percent. It is worth noticing that the male work participation rate increased to 55.2 percent during the year 2011 but the female work participation declined to 26.5 percent.

The work participation rate by residence in Patan district is shown in the figure 4.7:

Figure: 4.7
Work Participation Rate by Residence in Patan District (2001-2011)



Source: Population Census, 2001 & 2011, Govt. of Gujarat

The figure 4.7 illustrated that the rural work participation rate was 48.3 percent and the urban work participation rate was 32.3 percent during the year 2001 but in the year 2011 the rural work participation rate was decreased to 43.5 percent and the urban work participation rate increased to 33.0 percent.

The taluka wise work participation rate is presented in the table 4.18:

Table 4.18: Taluka Wise Work Participation Rate in Patan District (2001 & 2011)

State/District/ Taluka	T/R/U	2001			2011		
		Person	Male	Female	Person	Male	Female
Gujarat	Total	41.9	54.9	27.9	41.0	57.2	23.4
	Rural	47.2	55.5	38.5	44.9	57.1	32.0
	Urban	33.1	53.9	9.4	35.7	57.2	11.4
Patan District	**Total**	**45.1**	**53.2**	**36.3**	**41.3**	**55.2**	**26.5**
	Rural	**48.3**	**53.9**	**42.3**	**43.5**	**55.6**	**30.6**
	Urban	**32.3**	**50.6**	**12.2**	**33**	**53.6**	**10.6**
Chanasma	Total	50.8	55	46.2	40.4	55.2	24.6
	Rural	52.3	55.2	49.2	41.4	55.3	26.5
	Urban	39.9	53.6	0	33.2	54.1	10.2
Harij	Total	49	56.8	40.5	44.9	57.4	31.3
	Rural	53	57.8	47.7	47.3	57.9	36
	Urban	34.8	53.2	14.4	35.8	55.8	14.5
Patan	Total	45.1	54	35.4	41.4	55.5	26.2
	Rural	49.9	54.9	44.6	44.7	56.1	32.5
	Urban	33.5	51.9	13.1	33.6	53.9	11.3
Radhanpur	Total	42.6	51	33.5	40.3	53.7	26.2
	Rural	47.6	52.4	42.5	44.3	55	32.9
	Urban	28.7	47.3	8.5	30	50.3	8.3
Sami	Total	46.3	52.9	39.3	44.6	55.5	33
	Rural	46.3	52.9	39.3	44.6	55.5	33
	Urban	0	0	0	0	0	0
Santalpur	Total	45.9	53.5	37.7	42.2	54.7	28.6
	Rural	45.9	53.5	37.7	42.2	54.7	28.6
	Urban	0	0	0	0	0	0
Sidhpur	Total	39.6	50.4	28.1	37.3	54.5	19.1
	Rural	44.2	51.4	36.7	39.7	54.6	23.9
	Urban	28.9	48.2	8.2	32.7	54.2	9.7

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

The table 4.18 illustrates that the work participation rate of Chanasma, Harij, Patan, Radhanpur, Sami, Santalpur and Sidhpur was 50.8 percent, 49 percent, 45.1 percent, 42.6 percent, 46.3 percent, 45.9 percent and 39.6 percent respectively during the year 2001 which decreased to 40.4 percent, 44.9 percent, 41.4 percent, 40.3 percent, 44.6 percent, 42.2 percent and 37.3 percent respectively.

The table 4.18 also describes that urban work participation rate of Harij, Patan, Radhanpur and Sidhpur increased to 35.8 percent, 33.6 percent, 30 percent and 32.7 percent respectively in the year 2011. The female work participation rate decreased to 10.6 percent in 2011 from 12.2

percent in 2001 in Patan district. The female work participation rate was increased only in Harij and Sidhpur taluka with 14.5 percent and 9.7 percent respectively in the year 2011.

4.13 Workforce Composition

The workforce composition is broadly classified as main workers and marginal workers. The workforce composition of Patan district is shown in the table 4.19:

Table 4.19: Taluka wise Percentage Distribution of Main and Marginal Workers to Total Workers

State/District/	T/R/U	2001		2011	
Taluka		Main	Marginal	Main	Marginal
Gujarat	Total	80.1	19.9	82.2	17.8
	Rural	74.1	25.9	76.3	23.7
	Urban	94.4	5.6	92.3	7.7
Patan District	**Total**	**74.2**	**25.8**	**80.4**	**19.6**
	Rural	**71.3**	**28.7**	**78.5**	**21.5**
	Urban	**91**	**9**	**89.9**	**10.1**
Chanasma	Total	71.5	28.5	88.6	11.4
	Rural	70.9	29.1	88	12
	Urban	77.6	22.4	93.6	6.4
Harij	Total	72	28	77	23
	Rural	68.9	31.1	75	25
	Urban	88.9	11.1	86.8	13.2
Patan	Total	75.2	24.8	79.3	20.7
	Rural	69.9	30.1	76.3	23.7
	Urban	93.9	6.1	88.5	11.5
Radhanpur	Total	73.9	26.1	79	21
	Rural	70.9	29.1	76.1	23.9
	Urban	87.5	12.5	90.1	9.9
Sami	Total	71.9	28.1	79.4	20.6
	Rural	71.9	28.1	79.4	20.6
	Urban	0	0	0	0
Santalpur	Total	72.7	27.3	76.6	23.4
	Rural	72.7	27.3	76.6	23.4
	Urban	0	0	0	0
Sidhpur	Total	78.9	21.1	84.3	15.7
	Rural	75.1	24.9	80.9	19.1
	Urban	92.4	7.6	92.4	7.6

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

The table 4.19 shows that the percentage of main workers and marginal workers was 74.2 percent and 25.8 percent respectively during the year 2001 but in 2011 the percentage of main workers increased to 80.4 percent and the percentage of marginal workers decreased to 19.6

percent. It is also noticed that the percent of main workers increased in all the talukas of district but the percent of marginal workers decreased in all the talukas of district.

4.14 Total Workers by Industrial Classification

The total workforce is classified into four categories:

(A) Cultivator

For purposes of the census a person is classified as cultivator if he or she is engaged in cultivation of land owned or held from government or held from private persons or institutions for payment in money, kind or share. Cultivation includes effective supervision or direction in cultivation.

(B) Agricultural Labourers

A person who works on another person's land for wages in money or kind or share is regarded as an agricultural labourer.

(C) Household Industry Workers

Household industry is defined as an industry conducted by one or more members of the household at home or within the village in rural areas and only within the precincts of the house where the household lives in urban areas. Household industry relates to production, processing, servicing, repairing or making and selling of goods.

(D) Other Workers

All workers i.e. those who have been engaged in some economic activity during the last one year, but are not cultivator or agricultural labourers or in household industry or "Other Workers (OW)". This category includes all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport, banking, mining, construction, etc.

The percentage classification of type of workers by residence is shown in the table 4.20:

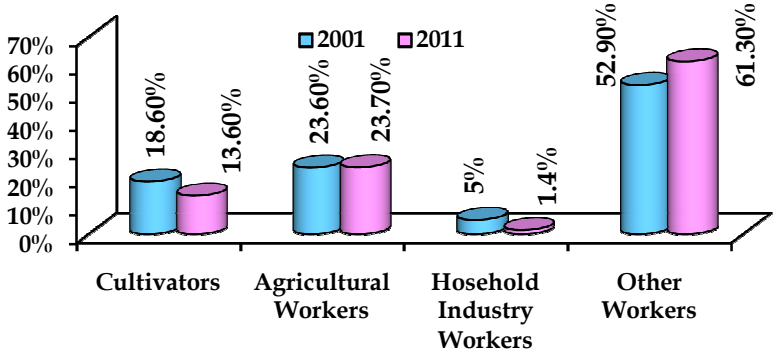
The table 4.20 shows that during the year 2011, the percentage of cultivators, agricultural labourers, household industry workers and other workers was 24.6 percent, 40.9 percent, 12 percent and 33.3 percent respectively. In rural area, the percentage of cultivator and agricultural labourer was high with 28.8 percent and 47.5 percent respectively but in urban areas the percentage of other workers was high with 85.5 percent.The percentage of cultivators, agricultural labourer, households and other workers is shown in the figure 4.8:

Table 4.20: Percentage Classification of Types of Workers by Residence 2011

District	P/M/F	Cultivators	Agricultural Labourers	Household Industry	Others
Gujarat	Total	22	27.6	1.4	49
	Rural	33.7	41.6	1.1	23.6
	Urban	2.1	3.9	1.9	92.1
Patan District	**Total**	**24.6**	**40.9**	**1.2**	**33.3**
	Rural	**28.8**	**47.5**	**0.9**	**22.8**
	Urban	**3.9**	**8.4**	**2.2**	**85.5**
Chanasma	Total	26.2	39.8	1.1	32.8
	Rural	28.1	41.4	1.2	29.3
	Urban	9.7	25.6	0.4	64.3
Harij	Total	25.6	48	0.9	25.5
	Rural	29.8	52.8	0.8	16.6
	Urban	5.6	24.4	1	69
Patan	Total	23.8	33.4	1.7	41
	Rural	30.5	43	1.3	25.2
	Urban	2.7	3.5	3	90.8
Radhanpur	Total	24.5	45.8	0.8	28.9
	Rural	29.6	54	0.7	15.7
	Urban	4.5	13.9	1.2	80.4
Sami	Total	24.8	56.9	0.5	17.8
	Rural	24.8	56.9	0.5	17.8
	Urban	0	0	0	0
Santalpur	Total	32.5	48.9	0.9	17.7
	Rural	32.5	48.9	0.9	17.7
	Urban	0	0	0	0
Sidhpur	Total	19.4	30	1.1	49.5
	Rural	25.7	40	0.8	33.6
	Urban	4.1	6.2	2	87.7

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

Figure 4.8: Percentage Cultivators, Household, Agricultural and Other Workers



Source: Population Census, 2001 & 2011, Govt. of Gujarat

4.15 Livestock

Animal husbandry is a supplementary activity with agriculture as well as it is adopted as sole activity by many castes and communities in Patan district. According to 19th livestock census the total livestock in Patan district is shown in the table 4.21:

Table 4.21: Total Livestock in Patan District (2012)

Sr	Category	Number	Percentage
1	Cow	130300	20.82
2	Buffaloes	372440	59.52
3	Sheep	37716	6.03
4	Goat	80331	12.84
5	Other	4937	0.79
	Total	**625724**	**100.00**

Source: 19th Livestock Census , Department of Animal Husbandry, Dairying & Fisheries, M/O Agriculture

The table 4.21 reveals that according to 19th livestock census during the year 2012, the total livestock is 625724. Out of this 130300 are cow, 372440 are buffaloes, 37716 are sheep, 80331 are goat and 4937 are others which is 20.82 percent, 59.52 percent, 6.03 percent, 12.84 percent and 0.79 percent respectively.

The table 4.22 reveals that total livestock decreased in the year 2012 to 625724 from 664154 in the year 2007. Patan taluka comprises highest percentage of livestock with 27 percent in 2007 and 31 percent in the year 2012. The taluka wise livestock census is shown in the table 4.22:

4.16 Potential Related to Animal Husbandry Sector

- Potential for increase in the overall milk production through increase in numbers of buffaloes and through an effective system of fodder development and distribution process,
- Large-scale integrated farming or contract farming can be a potential if large investments can be attracted in animal based food processing industries. The region has large barren land.
- Integrated and holistic extension support to all categories of farmers;
- Decentralization of extension services;
- Farmer participatory need based extension approach;
- Client oriented and demand-led extension;
- Gender sensitive extension;
- Increased role of private and Non Governmental Organizations in extension;
- Public-private partnership in livestock extension and technology transfer;
- Appropriate extension methodology and use of Information and Communication Technology; Increased use of para-veterinarians, para-extension workers and local resource persons for extension;
- Encouraging relevant and need based research and programmes to transfer research outcome to the field involving all stakeholders;
- Appropriate training of extension personnel;
- Adequate practical orientation of veterinary/animal sciences students in extension service; and
- Cost recovery in delivery services to be factored in wherever appropriate

Table 4.22: Taluka Wise Livestock Census (2007 & 2012)

Sr	Taluka	Cow		Buffalo		Sheep		Goat		Others		Total	
		2007	**2012**	**2007**	**2012**	**2007**	**2012**	**2007**	**2012**	**2007**	**2012**	**2007**	**2012**
1	Chanasma	8075 (6.2)	8175 (6.3)	37565 (10.3)	33647 (9.0)	1055 (2.0)	342 (0.9)	7010 (6.8)	6097 (7.6)	962 (7.4)	982 (19.9)	54667 (8.2)	49243 (7.9)
2	Harij	11680 (8.9)	11820 (9.1)	35385 (9.7)	33212 (8.9)	1653 (3.1)	1871 (5.0)	6977 (6.8)	6089 (7.6)	828 (6.4)	410 (8.3)	56523 (6.4)	53402 (8.5)
3	Patan	23399 (17.9)	31732 (24.4)	126338 (34.8)	141465 (38.0)	5168 (9.6)	3013 (8.0)	21491 (20.9)	15969 (19.9)	2802 (21.7)	2039 (41.3)	179198 (27.0)	194218 (31.0)
4	Radhanpur	17369 (13.3)	14021 (10.8)	33920 (9.3)	32903 (8.8)	11567 (21.5)	2414 (6.4)	14077 (13.7)	11162 (13.9)	1906 (14.7)	257 (5.2)	78839 (11.9)	60757 (9.7)
5	Sami	31169 (23.8)	25372 (19.5)	42822 (11.8)	41912 (11.3)	3846 (7.2)	2929 (7.8)	12252 (11.9)	9248 (11.5)	3472 (26.8)	299 (6.1)	93561 (14.1)	79760 (12.7)
6	Santalpur	25999 (19.8)	25223 (19.4)	36041 (9.9)	43479 (11.7)	29352 (54.6)	25466 (67.5)	20317 (19.7)	18183 (22.6)	805 (6.2)	298 (6.0)	112514 (16.9)	112649 (18.0)
7	Sidhpur	13325 (10.2)	13957 (10.7)	51443 (14.2)	45822 (12.3)	1109 (2.1)	1681 (4.5)	20813 (20.2)	13583 (16.9)	2162 (16.7)	652 (13.2)	88852 (13.4)	75695 (12.1)
	District	**131016 (100)**	**130300 (100**	**363514 (100)**	**372440 (100)**	**53750 (100)**	**37716 (100)**	**102937 (100)**	**80331 (100)**	**12937 (100**	**4937 (100)**	**664154 (100)**	**625724 (100)**

Source-18th and 19th Livestock Census, 2007 & 20012

4.17 Development Actions

- Massive campaign for increasing area under Micro irrigation. (i.e. Drip & Sprinkler)
- Ground water recharge through Sujalam Suflam Project. Motivate the farmers for participatory water conservation through Check Dam, Village Pond , Farm Pond etc.
- Change in cropping pattern under command area of Sardar sarovar Yojana through Introducing new crops (Safflower, Chicory, Soyabean,). Thrust on increase the area under Horticulture Plantation (Tissue Date palm, Papaya, Pomegranate)
- Looking at the number of cows and buffaloes in Patan district, there is potential for producing organic manures and promote organic farming in the district. Development of organic zone for Cumin and Gram.
- Increase the employment opportunities for rural youths and farm women depends on agri-based industries.
- Expand the agriculture farming towards "Need base "marketing.
- Domestic agri product processing: Value addition in carrot and spices
- Reduce the use of chemical pesticide with implementation of Integrated Pest Management Practices through use of bio pesticides and bio control
- To diagnose the village wise micro nutrient status with aims to make sustainable way of fertilizer management and massive campaign for increasing awareness among the farmers for balance use of fertilizers including use of liquid bio fertilizer.

4.18 Micro, Small & Medium Enterprises

The Indian industrial economy is largely characterised by a dynamic and versatile set of entrepreneurs, who though are small and medium in terms of scale of operations, make huge contributions of varied kind to the economy. The MSME sector has the ability to make available cost effective, low-volume customized products and also enjoys flexibility in its working to deliver as per the specificrequirements. The other typical behavior of these MSMEs is that in most of the cases, depending upon their specialization, they have evolved as clusters.

The importance of MSME for the Indian economic growth is well established. However with the changing focus from economicgrowth to inclusive growth, MSME sector's role in the socio economic development of India now needs to be understood, explored and facilitated.

The investment & employment of micro, small & medium enterprises is shown in the table 4.23:

The table 4.23 presents that during 2006-07 there was only 7 units of micro enterprises in which 146.98 lakh rupees was invested and only 56 persons was employed but during the year 2014-15, the micro enterprises increased to 113 and the investment increased to 1013.67 lakh rupees. The employment also increased to 370 persons.

Table 4.23: Investment & Employment of Micro, Small & Medium Enterprises (in lakhs)

Year	MICRO			SMALL			MEDIUM			Total		
	Units	Investm-ents	Employ-ment	Units	Investm-ents	Employ-ment	Units	Investm-ents	Employ-ment	Units	Investm-ents	Employ-ment
2006-07	7	146.98	56	5	1582	126	0	0	0	12	1728.98	182
2007-08	29	531.65	347	24	3187.4	433	0	0	0	53	3719.05	780
2008-09	49	559	624	15	1892	358	0	0	0	64	2451	982
2009-10	41	890	451	15	2608.86	309	0	0	0	56	3498.86	760
2010-11	32	743.75	359	23	3382	424	0	0	0	55	4125.75	783
2011-12	94	1665.04	752	33	5811	411	0	0	0	127	7476.04	1163
2012-13	95	1968.27	702	20	3238	284	0	0	0	115	5206.27	986
2013-14	108	1118	645	20	3869.73	419	1	864	19	129	5851.73	1083
2014-15	113	1013.67	370	19	3161.81	334	1	805.65	20	133	4981.13	724
Total	**568**	**8636.36**	**4306**	**174**	**28732.8**	**3098**	**2**	**1669.65**	**39**	**744**	**39038.81**	**7443**
I/E ratio (employment generated in per lakh investment)		**2.01**			**9.27**			**42.81**			**5.25**	

Source: Industries Commissionarate, Govt. of Gujarat

The table 4.23 also shows that in the year 2006-07 the units of small enterprises was 5 units, 1582 lakh rupees was invested and 126 persons was employed but in the year 2014-15 it increased to 19 units, 3161.81 lakh rupees was invested and 334 persons were employed. In 2006-07 there was no medium units in Patan district but during the year 2014-15 there was 1 medium enterprises, 805.65 lakh rupees was invested and 20 persons was employed in them.

4.19 APL, BPL and Antodaya Cards in District

The taluka wise APL, BPL and Antodaya cards are presented in the table 4.24:

Table 4.24: Taluka Wise BPL Families 2014

Sr	Taluka	APL Cards		BPL Cards		AAY	
		Cards	Population	Cards	Population	Cards	Population
1	Chanasma	23458	112563	6478	39186	1827	8401
2	Harij	13331	63086	8665	52912	2557	12718
3	Patan	82035	393543	27380	157220	6188	27268
4	Radhanpur	13971	64997	15584	93342	4478	23451
5	Sami	29472	137937	11065	67040	2634	13399
6	Santalpur	14074	69579	9781	59521	2506	12670
7	Sidhpur	43170	223128	8196	48182	1858	8709
	District	**219511**	**1064833**	**87149**	**517403**	**22048**	**106616**

Source: Based on database of District Supply Office, Patan (2014)

The table 4.24 reveals that during the year 2014, 219511 were APL card holders, 87149 were BPL card holders and 22048 were AAY card holders. On the other side APL covers 1064833 population, BPL covers 517403 population and AAY covers the population of 106616 persons.

4.20 Employment Position in District

The registration of candidates and their placements is shown in the table 4.25:

Table 4.25:Registration and Placement of Candidates in Patan District 2010-2014

Year	Registration of Candidates			Placements of Candidates		
	Male	Female	Total	Male	Female	Total
2010	2458	2305	4763	525	1409	1934
2011	3085	1114	4199	1298	226	1524
2012	4343	1543	5886	1705	562	2267
2013	3946	1223	5169	1450	519	1969
2014	4523	1688	6211	1935	951	2886

Source: District Employment Office, Patan

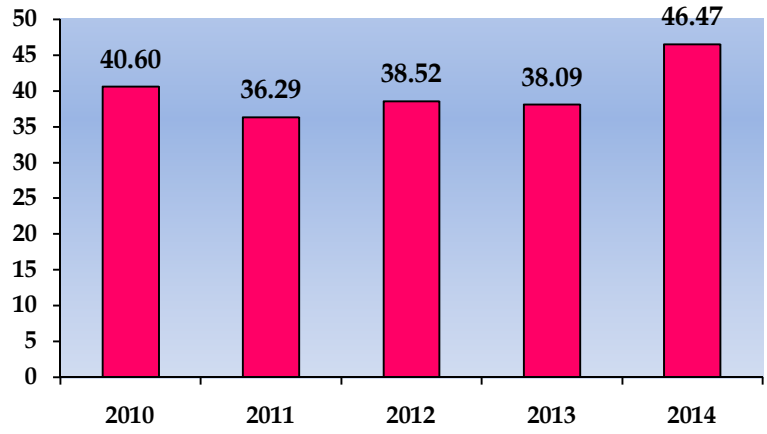
The table 4.25 describes that during the year 2010, total 4763 candidates were registered for employment but only 1934 candidates acquired employment which was 40.6 percent of total registration. While in year 2014, 6211 candidates were registered and only 2886 were got

employment which is 46.47 percent of total registration. It seems that percentage of candidates who got employment is increased.

The percentage of placement is shown in the figure 4.9:

The figure 4.9 illustrated that the percentage of placement was 40.60 percent in the year 2010 which decreased in 2012 to 38.52 percent but in the year 2014 it again increased to 46.47 percent.

Figure 4.9: Percentage of Placement in Patan District 2010-2014



Source: Computed from table 4.25

4.21 Public Distribution

The state initiatives to address basic requirements of food grains and other essential commodity of the economically and socially under privileged strata, is the objective of a public distribution system. Today the public distribution system has branched out to several other outlets also to meet the demands for consumer products. When compared to regular super markets the products of such stores carry subsidized prices. The total ration shops and ration card holders is presented in the table 4.26:

Table: 4.26: Taluka Wise Ration Shops & Ration Card Holders

Sr	Taluka	Total Population	Ration Shops	Ration Card Holders	Average Population per Ration Shop
1	Chanasma	130743	58	31763	2254.19
2	Harij	94562	37	24553	2555.73
3	Patan	449480	142	115603	3165.35
4	Radhanpur	144266	58	34033	2487.34
5	Sami	182805	76	43171	2405.33
6	Santalpur	128791	58	26361	2220.53
7	Sidhpur	213087	74	53224	2879.55
	District	**1343734**	**503**	**328708**	**2671.44**

Source: District Statistical Outline, 2013

The table 4.26 reveals that highest number of ration shops are found in Patan taluka with 142 shops and it is followed by Sami and Sidhpur taluka with 76 and 74 ration shops respectively. On the other side the highest average population per ration shop is found in Patan taluka with 3165.35 population and it is followed by Sidhpur and Harij taluka with 2879.55 and 2555.73 population.

4.22 Government Initiatives for Livelihood Promotion

Krushi Mahotsav at a Glance

Krushi mahotsav is an intensive convergence and mass contact strategy was successfully tried in 2005 to 2015. A month – long pre-monsoon campaign for encouraging scientific farming practices and focuses on doubling the agricultural income. It pioneered an unprecedented convergence of activities from different departments and agencies. All the key stakeholders including government personnel, credit and input agencies, agricultural scientists and NGOs were brought together at the village level before the onset of monsoon for the timely coordination of efforts. All government officials from the secretary level to the talati level worked together and agricultural scientists participate for the transfer of knowledge from the lab to land.

Krishi Mahotsav is as an intensive convergence and mass contact strategy was successfully tried in 2005 to 2012.

- Awareness for high-tech agriculture / Horticulture and adopt agriculture as business entrepreneur,
- Implement the scientific approach for crop production, profitable marketing mentality.
- Increases the interest among youths and farm women's for agriculture cultivation with the help of new agriculture implements and farm mechanization
- Vibrant the rural economy through formation of Sakhi Mandal, SHG, Farmer Interest Group, Commodity Interest Group and Farmer club
- Control the urbanization race of rural people with help in agriculture rural employment generation.
- With judicious use of agriculture inputs (Viz; Seeds, Fertilizer, Pesticide, irrigation water) reduce the cost of cultivation and increase the profits.
- Increase the awareness for protected cultivation- Green house, Net house, Mulch farming etc.
- Farmer got a new vision and adopts farming as ideal profession.

(A) Krushi Mahotsav 2015

Krushi Mahotsav-20l5 was held on jilla panchayat seat wise (Cluster base) from 22/04/2015 to 11/05/2015. The officers and Scientists from Agriculture and allied fields visited in decided villages of district panchayat seat. The two day program organized in decided village of jilla panchayat seat. The farmers were guided on different topics relevant to agriculture such as Drip Irrigation, Animal vaccination, Artificial insemination etc.Farmers were benefited by having kits of agriculture, horticulture and animal husbandry, soil health card, farmer shibir, demonstration, seminar etc. Every year 4 mega exhibition and seminar organized under the

auspice chairmanship of Hon. Chief Minister of Gujarat. 2000 farmers of Patan district attained the mega event at Modsa.

Major achievements of Krushi Mahotsav 2015 in Patan District are as follows:

- Farmers attained – 23356
- Cheque distribution – 750
- Application for drip irrigation – 757
- Number of stall – 532
- Demonstration given for latest practices – 237
- ATMA has distributed 323 demonstration of castor, 120 of BT Cotton and 57 of Clusterbean
- Agriculture literature distributed – 29674
- 19 khet talavdi, 3 check dams were dipped and 20 farmers got 7.20 lakh for khet talavdi development.

(B) Rabi Krushi Mahotsav- 2014

In manners of Krushi Vikas Varsh 2014-15, with the objective to provide the technical guidance of Rabi crops before Rabi season and aware the farmers about Krushi Vikas Varsh 20I4-I5 of the state, the Agriculture Department has planned taluka wise Rabi Krushi Mahotsav. Rabi Krushi Mahotsav was organized during dt. l1/l2/2014 to dt. 22/12/2014 in two session in 179 taluka. In Patan district 7 taluka was covered.

Work done during Rabi Krushi Mahotsav-20l4 in Patan District

- Number of farmers attended – 9950
- Numbers of farmers guided by agricultural scientist – 9950
- Cheque/sanction letter issued – 1212, Rs. 157.64 lakh
- Seminar/Farmer's shibir – 23
- Drip irrigation seminar – 14
- Khet talavadi – 22
- Literature distribution – 22740
- Agri equipment demo & crop demo – 128

(C) Major Activities under Krishi Mahotsav 2013.

- Collector Initiative: Massive campaign for Micro irrigation. Promotion of drip and sprinkler irrigation systems: 10000 Hectares
- Soil sampling and issuing of Soil Health Cards: 38000
- Issuing of Kisan Credit Cards: 100000
- Organizing Kisan Shibirs & Seminars for scientific guidance: 18
- Distribution of agricultural kit: 3711
- Distribution of Animal husbandry kits: 2605
- Water conservation works & reclamation of soil: 2530 Hectares
- Animal vaccination: 124000
- Animal Health camp: 145
- Artificial Insemination: 3000 animals

- Tree Plantation: 900000
- Establishing of Sakhi Mandal and strengthen activities.
- To reduce Mal Nutrition in the District through massive campaign
- Processing of applications for government schemes
- To complete Narmada Canal Network in time bound schedule
- To create healthy competition among villages and Talukas for adopting micro irrigation system,
- To appreciate progressive and innovative farmers for adopting of new agriculture technology,
- To encourage professional to establish soil testing lab and research center for improving animal breeds.

(D) Achievements under Krushi Mahotsav 2005 to 2014

The achievements under krushi mahotsav is presented in the table 4.27.

"Soil Health Card" Initiative for Soil Health Management

With a progressive outlook towards strengthening agriculture infrastructure and increasing the agriculture yield, Government of Gujarat took lead and launched first of its kind initiative of preparing Soil Health cards for the farmers in Gujarat Since 2003-04.

Usage of Soil Health Card

- Information regarding soil fertility
- Need base fertilizer application in crops
- Reclamation of saline or alkaline soil
- Integrated nutrient management to enhance productivity of crops
- More return by reducing cost of chemical fertilizers.

In Patan District from 2011-12, it is planned to cover 25% viilage,s farm holder of each taluka of district and to make 100% coverage in next four years of all farm holder i.e., 1.52 lakhs as per Agri-census-2005-06. Established 2 soil testing laboratories at APMC Sidhpur and Patan with capacity of 10000 soil sample testing for strengthening of this programme.In 2011-12 and 2012-13, total 68364 soil health card distributed to farmers which covered 264 villages and In 2014-15, total 40633 soil sample has been collected which covered 128 villages. In 2013-14, 236 villages Soil Fertility Map prepared and distributed at village Gram Panchayat which represents the availability of micro nutrients in soil. In 2014- 15, 289 villages Soil Fertility Map prepared and distributed at village Gram Panchayat.

"iKhedut" Web Portal - Door Step Information for Farmers

State government has launched iKhedut web portal for easy disbursernent of benefit to the farmers. It is internet based website comprised various aspect relevant to agricultural like as it includes scientific package of practices of different crop, information of government schemes, agriculture commodity market price, soil health card and so more. Farmers can take benefit of different government agricultural by applying online application at E-gram centre at his ease and time. In the district, more than 5494l farmers registered in the current year 2014. Total 9853

Table 4.27: Achievements under Krushi Mahotsav 2005 to 2015

Sr	Schemes	2005	2006	2007	2008	2010	2011	2012	2013	2014	Total
1	Distribution of agriculture kits	2660	2606	2620	3311	3557	3667	3688	3711	3686	29506
2	Distribution of horticulture kits	2610	2874	3274	3206	3151	3205	3226	0	3231	24777
3	Distribution of animal husbandary kits	2610	2429	11287	10928	1511	2595	2495	2600	5210	41665
4	Distribution of soil health cards	30278	9180	0	2645	15066	18024	12193	3626	0	91012
5	Sample of land taken	14006	2896	2650	7880	39980	24277	14369	400	38065	144523
6	Taken application of drip irrigation method	232	79	111	201	632	593	628	2253	955	5684
7	Manual/book/CD	511	492	522	521	502	388	165	133	124	3358
8	Farmer's shibir	27	21	17	12	14	13	14	13	7	138
9	Vaccination of animals	90475	117830	209515	135142	205282	126993	129873	178349	205467	1398926
10	Khet talavadi	646	1016	1290	238	1649	124	39	102	88	5192
11	Khoribandh	402	276	392	611	957	304	61	65	192	3260
12	Checkdam	139	138	152	297	271	155	32	21	101	1306
13	Watershed	62	89	153	225	109	19	21	5	23	706

Source: District Agriculture Office, Patan, 2014

application was done on I-khedut for different schemes. Among 9853 application 2766 application were found eligible and sanctioned for different benefits. In year 2014 amount of subsidy of Rs 434.05 lakh was disburse among farmers. The management of natural resources is vital not only for increasing agricultural yield and income but also for mitigating the adverse impacts of water scarcity in the state.

Integrated land and water management activities improved farming practices and appropriate market and credit linkages have the potential to increase the productivity of natural resources in a sustainable manner and ensure the nurturing of the local economy. Agricultural sector of Patan district has seen drastic and valuable changes since the inception of the district. The cropping pattern, irrigation facilities and other aspects has corroborated the development of agriculture.

Other Schemes

Mission Manglam

Gujarat's most precious resource is 'people' and their potential to work towards collective betterment of the state and eventually the nation. Poverty becomes a hindrance for optimum utilization of this resource and it's potential. Poverty has numerous manifestations including low and unreliable income, poor health, low levels of education and literacy, insecurity and uncertain access to justice, disempowerment and isolation from mainstream socio-economic development. Mission Mangalam, through its multi-dimensional policies and interventions aims to provide permanent solutions. It strives to provide options of income generating opportunities, ready to access means of production, affordable basic services and protection of law. Thus, 'Mission Mangalam' is a complete package with all these elements incorporated in it.

The five basic guiding principles of Mission Mangalam are:

- Leveraging upon Industry partnerships and corporate MoUs, 'the firm' goes to the community rather than people migrating to the firm.
- Improving demand and quality of rural products, thereby creating a market for these in urban segments.
- Inclusion of modern technology and processes which result in inversing the economies of scale.
- Linking local initiatives to international markets.
- Mass empowerment through ownership of assets (means of production) with producers / producer groups.

Main objectives are:

- Empowering the Poor by organizing them into SHGs/Federations/other Collectives.
- Empower the poor through ensuring access to Financial Services.
- Augmenting existing livelihoods and enhancing incomes
- Explore livelihood opportunities through newer ventures in rural service sector
- Developing Inclusive Value Chains

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

NREGA Launched on 2nd February 2006 as a momentous initiative towards pro-poor growth. For the first time, rural communities have been given not just a development programme but also a regime of rights. The National Rural Employment Guarantee Act, 2005 (NREGA) guarantees 100 days of employment in a financial year to any rural household whose adult members are willing to do unskilled manual work.

Eligibility Criteria

The mandate of the Act is to provide at least 100 days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work.

Benefits of the scheme

- Social protection for the most vulnerable people living in rural India by providing employment opportunities.
- Livelihood security for the poor through creation of durable assets, improved water security, soil conservation and higher land productivity.
- Drought-proofing and flood management in rural India.

Total Sanitation Campaign (TSC)

Salient features of the program rural sanitation came into focus in the Government of India in the World Water Decade of 1980s. The Central Rural Sanitation Programme was started in 1986 to provide sanitation facilities in rural areas. It was a supply driven, high subsidy and infrastructure oriented programme. As a result of these deficiencies and low financial allocations, the CRSP had little impact on the gargantuan problem. The experience of community-driven, awareness-generating campaign based programmes in some states and the results of evaluation of CRSP, led to the formulation of the Total Sanitation Campaign (TSC) approach in 1999.

Objectives

The main objectives of the TSC are as under:

- Bring about an improvement in the general quality of life in the rural areas.
- Accelerate sanitation coverage in rural areas.
- Generate felt demand for sanitation facilities through awareness creation and health education.
- Cover schools/ Anganwadis in rural areas with sanitation facilities and promote hygiene education and sanitary habits among students.
- Encourage cost effective and appropriate technologies in sanitation.
- Eliminate open defecation to minimize risk of contamination of drinking water sources and food.
- Convert dry latrines to pour flush latrines, and eliminate manual scavenging practice, wherever in existence in rural areas.

Strategy

The strategy is to make the Programme 'community led' and 'people centered'. A "demand driven approach" is adopted with increased emphasis on awareness creation and demand generation for sanitary facilities in houses, schools and for cleaner environment. Alternate

delivery mechanisms are adopted to meet the community needs. Subsidy for individual household latrine units has been replaced by incentive to the poorest of the poor households. Rural School Sanitation is a major component and an entry point for wider acceptance of sanitation by the rural people. Technology improvisations to meet the customer preferences and location specific intensive IEC Campaign involving Panchayati Raj Institutions, Cooperatives, Women Groups, Self Help Groups, NGOs etc. are also important components of the Strategy. The strategy addresses all sections of rural population to bring about the relevant behavioural changes for improved sanitation and hygiene practices and meet their sanitary hardware requirements in an affordable and accessible manner by offering a wide range of technological choices.

Components

- Provision of Individual household latrines: Incentive of ` 1500/- (` 2000/- in case of hilly and difficult areas) and ` 700/- for each toilet is given by Central and State Government respectively to BPL households after they construct and use toilets. APL households are motivated to construct toilets with their own funds or by taking loans from SHGs, banks, cooperative institutions etc.
- Provision of Toilets in Schools and Anganwadis with the cost shared by Central and State Government in the ratio of 70:30
- Construction of Community Sanitary Complexes
- Assistance to Production Centres of sanitary materials and Rural Sanitary Marts
- Solid and Liquid Waste Management

The progress under various schemes is presented in the table 4.28:

Table 4.28: Progress under Various Schemes and Programs in Patan (2013-14)

Sr	Taluka	Wage Employment	Beneficiaries (Cash Credit disbursement) (in lakhs)	BPL Beneficiaries
1	Chanasma	55287	312.57	5862
2	Harij	76651	138.00	5887
3	Patan	50533	505.44	15580
4	Radhanpur	97524	68.50	7041
5	Sami	84517	149.50	12791
6	Santalpur	80217	208.77	6294
7	Sidhpur	31341	110.00	6600
	District	**476070**	**1492.78**	**60055**

Source: Database of District Rural Development Agency, Patan (2013-14)

The table 4.28 reveals that 476070 persons has given wage employment in 2013-14 under different government schemes and total 60055 beneficiaries was benefited in the government schemes.

4.23 SWOC Analysis of Livelihood

SWOC analysis of livelihood is presented in BOX 4.1:

BOX 4.1: SWOC Analysis of Livelihood

Strength	Weakness
➢ Majority of geographical land area (73%) is under cultivation. Economy of rural population mostly depends on agriculture and animal husbandry. ➢ Command area of Sardar Sarovar 2.08 lakh hectares covered 269 villages after completion of project. ➢ The average rainfall is 538 mm is good for agriculture. ➢ Potash content is high in the soil ➢ Isabgul export industries well established APMCs, Castor extraction mills, valuable spices crop cumin and fennel.	➢ Still 60% of the cultivable land is unirrigated. ➢ Forest coverage is less only 8.2% of the geographical area (no forest area in Sidhpur, Patan and Chanasma taluka) ➢ Nitrogen content (kg) per hectare is too low. ➢ Salt accumulation (Salinity) is main problem in Sami and Radhanpur talukas.
Opportunities	**Challenges**
➢ Watershed development programmes ➢ Strengthening irrigation facilities, like borewell strengthening, drip/sprinkler etc. ➢ Tree plantation under social forestry/social horticulture/agro forestry/farm forestry ➢ Training programmes for farmers ➢ Pasture land developed to promote animal husbandry ➢ Opportunity for organic farming in spices and pulse ➢ Development of IT in agriculture sector ie. Ikhedut, soil health card etc ➢ Development of hi-tech horticulture, particularly pomegranate and datepam.	➢ Low nitrogen and organic carbon of the soil will make it nutrient deficient for increasing fertility if organic farming is not practiced. ➢ Low adoption rate of latest agriculture production technology, i.e. micro irrigation

4.25 Success Story

The success story related to animal husbandry is presented in the box 4.2 and 4.3:

Box 4.2

Success Story 1 : Related to Animal Husbandry

Name of farmer: Chaudhary Hemaben Hajjabhai

Address : Kamalpur, Taluka – Raadhanpur, District – Patan

Age: 47 years

Academic qualification: Pass 5th Class

Brief note on work done in last three years

- Upkeeping green and dry fodder for 200 buffaloes and 60 kakrej cows
- Adopting scientific method in animal husbandry and providing 24 hours drinking clean water for animals
- Wallowing tanks are made for caring animal in summers and it's water is using for irrigation
- Using milking machine
- Tractor operated cutters are used for cattle fodder
- Regular vaccination of animals
- To protect animals from heat in summers, fan and water facility is provided under animal shed
- Cow – dung is used for organic farming

Database of achievements

Year	Milk production (liter)	Total Income (Rs. in lakh)
2010-11	76,000	23.00
2011-12	90,000	27.00
2012-13	1,00,000	30.00
2013-14	1,05,000	31.50
2014-15	1,10,000	33.00

Awards given by state and central governments

- Best Banas Laxmi – 2007-08 (Third Position)
- Best Banas Laxmi – 2008-09 (First Position)
- Best Aatma Farmers Award – 2011-12
- First position in the field of milk production in 2014-15 in Radhanpur taluka

Efforts are doing for benefitting to other recommended farmers in the same sector

- She is herself coming forward as a progressive cattleman and becoming motivator among other cattleman for sharing knowledge of scientific technique for animal husbandry.

(Source: Deputy Director of Animal Husbandry, Jilla Panchayat, Patan, 2015)

Box No. 4.3

Success Story 2 : Gunget Village of Chansama Block in Patan District under Mahatma Gandhi National Rural Employment Guaranty Act

Mahatma Gandhi National Rural Employment Guaranty Scheme (MGNREGS) is under implementation in Patan district since 1/4/2008. Same as in the guide lines objective of implementation of MGNREGS is to provide 100 days employment and to create permanent assets and opportunity for livelihood . Some of the works executed in the year 2010-11under MGNREGS in Patan district are role model for other. Because of these works sustainable long term assets are created and villagers get financial benefit. Difficulties of people reduced and permanent facilities generated are being used by villagers with joy and pleasure. Let us see what these works in the village Ganget are.

Work Plan: In the year 2010-11 a special meeting was held in the village Ganget to prepare and decide works and labour budget under MGNRGS. Sarpanch, Up-Sarpanch, Village Monitoring committee members and Panchyat members attended this meeting. They discussed what about the facilities in the village. They prepared the list of works needed and prioritize them. They discussed about the pond behind the Gram Panchyat Office. This pond is an only source of drinking water for the village. There is well in the pond which supplies water throughout the year. Water from the pond percolate in to the well and this water is supplied to entire village. To keep the pond clean and restricting germination of weeds in the pond it was decided to pitch the embankment of the pond with stone. They also thought this will also increase the durability of the pond.

Approval to Estimate: TDO along with his engineer visited the village, discussed the phisibility, detail technical plan and estimate was prepared. Estimated amount including materials and labour component was Rupees 10 laks. Technical and administrative approval granted for stone pitching work on embankment of the pond.

Implementation of Stone Pitching Works: After Technical and Administrative approval needed material purchased and work stated. To maintain quality and quantity of the work VMC members and Panchayat Members frequently visited the execution of the work. Block level officials and elected representative also visited the site during execution. Entire work starting from planning to implementation was transparent and participatory. Actual expenditure against the estimate of Rs 1000000/- is Rs. 675000/- only. Expenditure on material component is Rs.530000/- and expenditure on labour component is Rs.145000/-.1690 man days were generated from the work and 82 male and 38 female earned Rupees 145000/- as their wages.

Benefits of the work: Villager of the Ganget village are very happy with the stone pitching work. Durability and strength of pond bank is increased. Capacity of water storage is also increased. Not only source of drinking water but estheticism of village is also increased. Pond is also used as recreation centre by village women and children. Surprisingly water table in the adjoining agriculture land also improved.

OOOO

CHAPTER - V

Industrial Growth and Development

Facts

Production of Major Minerals (MT)	2014-15	233260
Royalty Amount by Major Minerals in (in lakhs)	2014-15	51.24
Production of Minor Minerals (MT)	2014-15	760874
Royalty Amount by Minor Minerals (in lakhs)	2014-15	158.55
Registered industrial unit	2011	254
Total industrial unit	2011	254
Number of industrial area	2011	07
Turnover of small scale industries (in lakhs)	2011	2500

Chapter 5

Industrial Growth and Development

5.1 Introduction

Patan district is located in the northern part of Gujarat with a geographical spread of 5792 sq km. The district shares its border with Banaskantha, Surendranagar and Kachchh districts of Gujarat. Administratively Patan district is divided into 7 talukas and 517 villages with Patan as the district capital. Patan, Santalpur, Radhanpur, Sidhpur, Harij, Sami and Chanasma are taluka regions in the district.

Patan district is a relatively low human resource potential region in Gujarat state. District has a total population of 13.42 lakh as per 2011 census district accounting for 2.2 percent of the overall state population. District has witnessed lower decadal population growth in comparison to the overall state. Patan population has witnessed a decadal growth rate of 13.6 percent between 2001 and 2011 as against the state average of 19.3 percent during the same period. A significant portion of the district population lives in rural areas accounting for 79.07 percent of the total population. Population spread in the district is considerably lower than the state average with a density of 232 persons per sq km as against state average of 308 persons per sq km.Analysis of population distribution in the district as per 2011 census indicates higher human resource potential in the taluka of Patan, Sidhpur, Sami and Radhanpur.Details of regional distribution of population in the district are presented in the table 5.1:

Table 5.1: Regional Distribution of Population in the District (2011)

Sr	Taluka	Contribution to District Population	Population Density (persons per sq. km 2011)
1	Chanasma	9.7	186
2	Harij	7.0	194
3	Patan	33.5	415
4	Radhanpur	10.7	64
5	Sami	13.6	97
6	Santalpur	9.6	178
7	Sidhpur	15.9	345
	District	**100.0**	**232**

Source: District Statistical Outline, Patan, 2011

The table 5.1 shows that according to census 2011, out of total population, Patan taluka comprises of 33.5 percent population, Sidhpur consists of 15.9 percent and Sami taluka consist of 13.6 percent of total population. The population density of district is 232 persons; it means that 232 persons are residing in per sq. km. The highest density is found in Patan taluka with 415 persons.The gender composition of district population is marginally better than the state average. As per 2011 census, the district has a gender ratio of 935 females per 1000 males, as against the state average ratio of 919 females per 1000 males. Overall reserved categories

contribute to only 10.95 percent of the total district population indicating the inclusion focus for the development of the economy has to be primarily on upliftment of women within Patan district. Education attainment levels in the district are lower than the state average. As per 2011, district has registered an overall literacy rate of 72.30 percent as against state average of 78.03 percent. Continuing regional and gender variations in literacy rates is a key concern within the district. Urban rural literacy gap in Patan is estimated to be 13.82 percent comparable to the state average of 14.58 percent. Similarly the district still has a male female literacy gap of 21.85 percent as against 16.5 percent for Gujarat state (According to 2011 census). There is a greater need to embark gender specific approach in implementing mass education programmes in the district. Increasing focus on literacy would create demand for education and training facilities within the district to support the economic growth of the region.

5.2 Availability of Major Minerals

The Oil & Gas Commission of India had successfully explored many mineral, oil and natural gas in Patan district. Major minerals are white clay, boll clay, red okhar and china clay. The production of major minerals is presented in the table 5.2:

Table 5.2: Production of Major Minerals in Patan District in (MT)

Sr	Mineral	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
1	White Clay	210256	286385	324337	254430	139227	162660
2	China Clay	0	0	0	70774	77089	63300
3	Red Okhar	650	2419	4686	4690	5050	7300
4	Boll Clay	9650	7947	11785	10550	0	0
	Total	**220556**	**296751**	**340808**	**340444**	**221366**	**233260**

Source: District Statistical Outline, Patan, 2009-10 to 2014-15

The table 5.2 presents that during the year 2009-10, total production of major minerals was 220556 MT which increased to 340444 MT in the year 2012-13 but the production decreased to 221366 MT in the year 2013-14 and again increased to 233260 MT in the year 2014-15. The reason behind is that the production of white clay was low and the production of boll clay was almost zero in the year 2013-14 and 2014-15. The production of chins clay also decreased to 63300 MT in the year 2014-15.The royalty by production of major minerals is shown in the table 5.3:

Table 5.3: Royalty Amount by Production of Major Minerals in (in lakhs)

Sr	Mineral	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
1	White Clay	56.46	57.34	75.10	57.15	28.38	36.78
2	China Clay	0	0	0	15.00	15.25	13.31
3	Red Okhar	.03	0.76	2.51	2.26	1.15	1.15
4	Boll Clay	2.33	1.78	6.54	0.23	0	0
	Total	**58.82**	**59.88**	**84.15**	**74.64**	**44.78**	**51.24**

Source: District Statistical Outline, Patan, 2009-10 to 2014-15

The table 5.3 presents that royalty amount by production of major minerals was 58.82 lakh rupees during the year 2009-10 but in the year 2013-14, it decreased to 44.78 lakh rupees and again increased to 51.24 in the year 2014-15. Due to low production of china clay, its royalty amount also decreased to 13.31 in the year 2014-15.

5.3 Availability of Minor Minerals

The minor minerals which found in Patan district are sand, brick sand and ordinary sand. The production of minor minerals is presented in the table 5.4:

Table 5.4: Production of Minor Minerals in Patan District (in MT)

Sr	Mineral	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
1	Sand	56656	64052	208335	294034	187240	155774
2	Brick Sand	320880	174000	0	0	18783	0
3	Ordinary Sand	11200	200700	453834	299200	267752	605100
	Total	**388736**	**438752**	**662169**	**593234**	**473775**	**760874**

Source: District Statistical Outline, Patan, 2009-10 to 2014-15

The table 5.4 shows that the production of minor minerals was 388736 MT in the year 2009-10 but in the year 2013-14, it increased to 473775 MT and in 2014-15, it increased to 760874 MT. The production of ordinary sand was 11200 MT in the 2009-10 but it becomes almost more than double in the year 2013-14 with 267752 MT and in the year it increased to 605100 MT. On the other side the production of brick sand decreases in the year 2013-14 to 18783 MT from 320880 in the year 2009-10.

The royalty amount by production of minor minerals is presented in the table 5.5:

Table 5.5: Royalty Amount by Production of Minor Minerals (in lakhs)

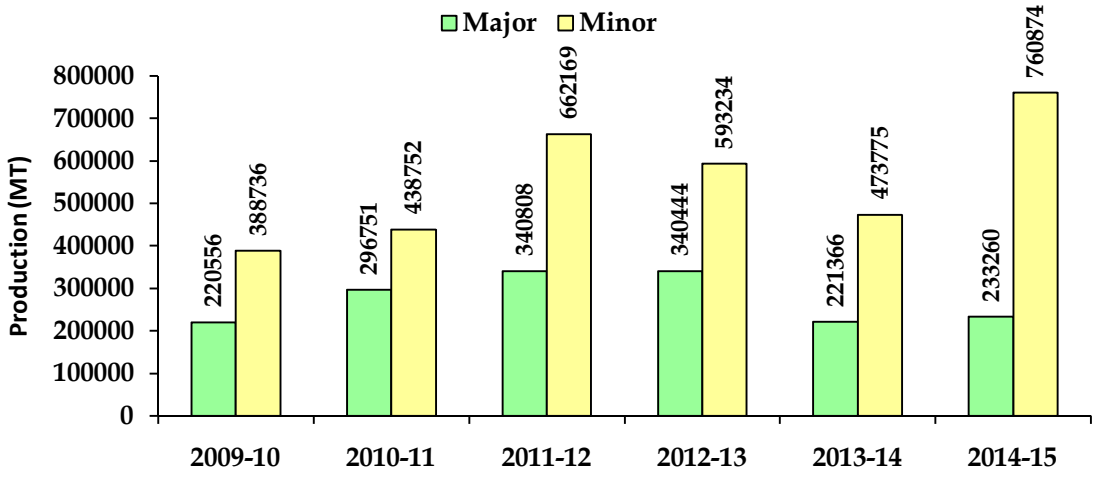
Sr	Mineral	2009-10	2010-11	2011-2	2012-13	2013-14	2014-15
1	Sand	3.67	14.73	46.02	67.0	28.09	19.83
2	Brick Sand	16.04	20.88	0	0	62.61	48.75
3	Ordinary Sand	6.89	27.81	54.46	63.0	40.16	89.97
	Total	**26.6**	**63.42**	**100.48**	**130**	**130.86**	**158.55**

Source: District Statistical Outline, Patan, 2009-10 to 2014-15

The table 5.5 describes that royalty amount by minor minerals was 26.6 lakh rupees in the year 2009-10 which increased to 130.86 in the year 2013-14 and also increased to 158.55 lakh rupees in the year 2014-15.

The production of major and minor minerals is presented in the figure 5.1:

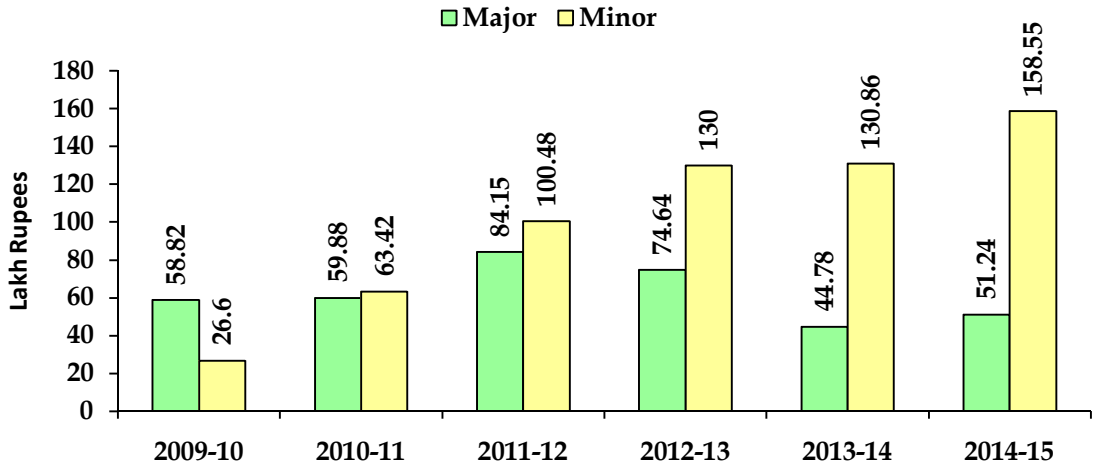
Figure 5.1: Production of Major and Minor Minerals



Source: District Statistical Outline, Patan, 2009-10 to 2014-15

The royalty by major and minor minerals is presented in the figure 5.2:

Figure 5.2: Royalty by Major and Minor Minerals



Source: District Statistical Outline, Patan, 2009-10 to 2014-15

5.4 Industrial Scenario of Patan District

With the recent surge in investments in the oil and gas sector, Patan is progressively shaping up into an attractive destination for investors. The textile sector also contributes largely to the district economy. Patan patola is one of the finest hand woven textile materials produced. Besides this, Mashru, a mixed fabric, woven with a combination of cotton and silk is also traditionally produced in Patan. The industrial scenario at a glance is shown in the table 5.6:

Table 5.6: Industry at a Glance in Patan District (2011)

Sr	Head	Unit	Particulars
1	Registered industrial unit	No.	254
2	Total industrial unit	No.	254
3	Estimated average number of daily workers employed in small scale industries	No.	2500
4	Number of industrial area	No.	07
5	Turnover of small scale industries	In lakhs	2500

Source: DIC, Patan, 2011

The table 5.6 reveals that during the year 2011, total 254 industrial units were registered in Patan district, 2500 estimated average number of daily workers employed in small scale industries and turnover of small scale industries was 2500 lakh rupees.

Gujarat, since many years has been known as the land of entrepreneurs. It is this entrepreneurial spirit that ushered the process of emergence of a sector characterized by many small and medium scale industries in the state. Small-scale industries are the major contributors to the economy of any region. Looking to the nature of investment and technology adopted by them, they offer wide scope for employment opportunities thus helping to alleviate the core problem of unemployment in our country. The sector has matured over a period of time driven by the business acumen of the entrepreneurs in terms of their technical skills and capability to run units with lower overheads. However, with the Indian economy steadily aligning with the global environment, a need is now felt to strengthen small and medium sector units in terms of an array of needs like capacity building, infrastructural support, financing, technology upgradation, research and development activities, quality improvement, market access and many more, so as to enable them to have competitive advantages in the international market.

The details of existing micro and small enterprises and artisans units in the district are shown in the table 5.7:

The table 5.7 describes that highest 45 units of agro based industry is found in Patan district with 4180.29 lakh rupees investment and they are giving emolyment to 898 persons. Secondly, 40 units were related to cotton textile and 4369.90 lakh rupees investment and giving employment to 1133 people. Mineral based 10 units were also situated in district with 1009.29 lakh rupees investment and giving employment to 160 persons.

Table 5.7: Micro & Small Enterprises and Artisan Units in the Patan district (2011)

Sr	Type of Industry	Number of Unit	Investment (Lakh Rs)	Employment
1	Agro Based	45	4180.29	898
2	Soda Water	01	9.25	05
3	Cotton Textile	40	4369.90	1133
4	Woolen, Silk & Artificial Thread Made Cloths	02	9.30	11
5	Readymade Garments & Embroidery	08	50.60	34
6	Wood/Wooden Based Furnitures	10	90.68	50
7	Paper & Paper Products	08	469.24	68
8	Chemical / Chemical Based	14	908.89	210
9	Rubber, Plastic & Petro based	09	278.20	60
10	Mineral Based	10	1009.29	160
11	Metal Based	08	90.29	85
12	Engineering Units	20	326.29	150
13	Electrical Machinery & Transport Equipments	03	49.40	28
14	Repairing & Servicing	19	226.50	87
15	Others	57	4156.58	471

Source: DIC, Patan, 2011

5.5 Large Scale Investment

Analysis of regional distribution of investments in Patan district indicates that industrial development is concentrated in Santalpur taluka. Over the recent years state government has initiated some measures to enhance the industrial growth in backward talukas like Patan and Sami in addition to Santalpur through suitable incentives leading to an increased investment potential of these regions over the next decade.The taluka wise details of large scale investments in Patan district till 2012 is presented in the table 5.8:

The table 5.8 shows that 19 units were commissioned in Patan district till 2012 with 893 crore rupees investment and 34 units was under implementation with 7706 crore rupees. In Sidhpur taluka highest 9 units was commissioned with 21 crore rupees investment while highest 16 units was under implementation with 6053 crore investment in Santalpur taluka.

Table 5.8: Taluka wise Large Scale Industries in Patan District (till 2012)

Sr	Taluka	Commissioned		Under Implementation	
		No. of Units	Investment (in crore)	No. of Units	Investment (in crore)
1	Chanasma	1	7	0	0
2	Harij	0	0	0	0
3	Patan	1	0	4	146
4	Radhanpur	1	4	0	0
5	Sami	0	0	2	100
6	Santalpur	5	571	16	6053
7	Sidhpur	9	21	3	46
8	Not Classified	2	290	9	1361
	Total	**19**	**893**	**34**	**7706**

Source: Dept. of Mines & Geology, Patan

5.6 Micro, Small and Medium Enterprises (MSME)

The number of units, investment and employment of micro, small and medium enterprises is shown in the table 5.9:

The table 5.9 shows that during the year 2006-07, there was 7 units of micro enterprises and 5 units was of small enterprises with 146.98 lakh rupees and 1582 lakh rupees investment respectively. But in the year the number of micro enterprises increased to 113 units with 1013.67 lakh rupees investment and the small enterprises increased to 19 units with 3161.81 lakh rupees investment.

The first unit of medium enterprises was established in the year 2013-14 with 864.00 lakh rupees investment. On the other side during the year 2006-07, 56 persons was employed in micro and 126 persons was employed in small enterprises while in the year 2014-15, 370 person was employed in micro and 334 persons was employed in the year 2014-15.

Table 5.9: Units, Investment & Employment in Micro, Small & Medium Enterprises (2006 to 2015)

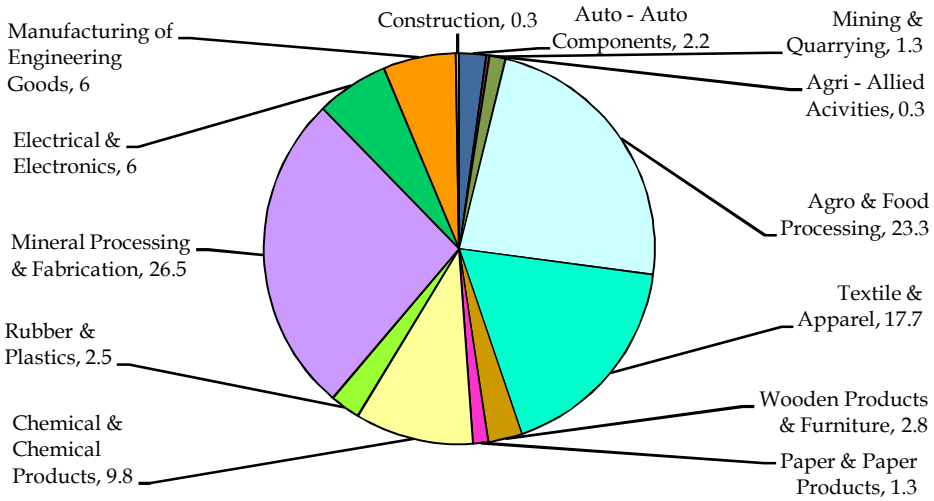
Year	Micro			Small			Medium		
	Units	Investment (Lakh Rs.)	Employment	Units	Investment (Lakh Rs.)	Employment	Units	Investment (Lakh Rs.)	Employment
2006-07	7	146.98	56	5	1582	126	-	-	-
2007-08	30	572.65	360	23	3069.40	420	-	-	-
2008-09	49	559.00	624	15	2333.05	358	-	-	-
2009-10	41	890.00	451	15	2608.86	309	-	-	-
2010-11	32	743.75	359	23	3382.00	424	-	-	-
2011-12	94	1665.04	752	33	5811.00	411	-	-	-
2012-13	95	1968.27	702	20	3238.00	284	-	-	-
2013-14	108	1118.00	645	20	3869.73	419	1	864.00	19
2014-15	113	1013.67	370	19	3161.81	334	1	805.65	20

Source: DIC, Patan, 2006 to 2015

5.7 MSME Manufacturing Scenario

MSME segment in Patan district is dominated by manufacturing industries in terms of both volume and investments. Among the manufacturing based MSME units, agro and food processing, mineral processing and fabrication, textile and apparel and chemical & chemical products are the key prominent categories in terms of number of units. However, in terms of investments, agro & food processing and textile & apparel are the key prominent categories. The composition of MSME manufacturing units is presented in the figure 5.3:

Figure 5.3: Composition of MSME Manufacturing Units (2012-13)

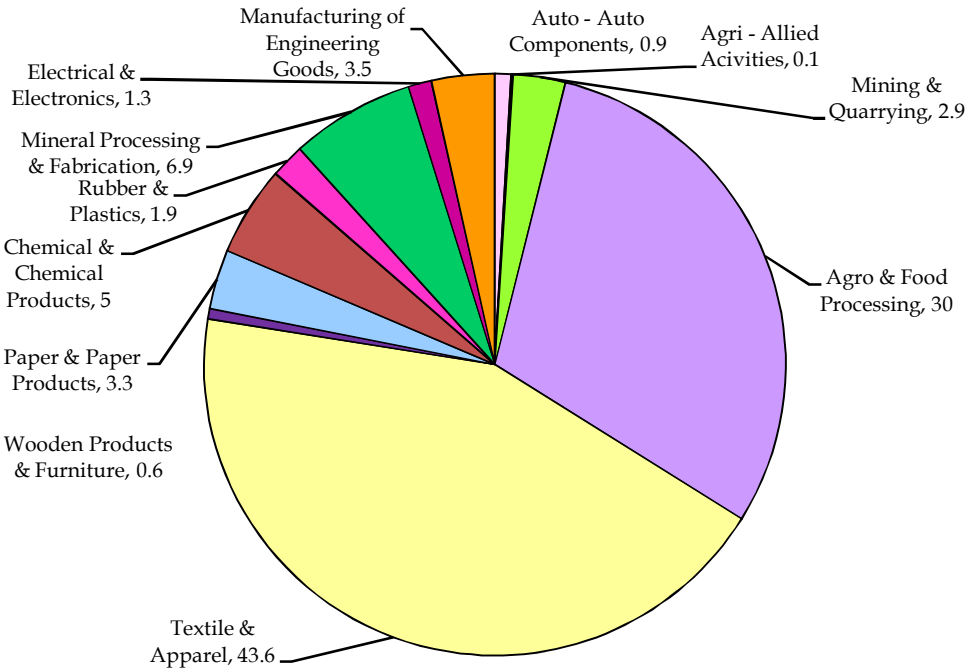


IEM, MSME Part-II Data till 2012-13

The figure 5.3 illustrated that MSME manufacturing units was categorized in various category during the year 2012-13 in Patan district. Out of total units, auto-auto components consists of 2.2 percent, mining & quarrying 1.3 percent, agri – allied activities units consist of 0.3 percent. Mineral processing and fabrication units comprises highest percentage of 26.5 percent in MSME manufacturing units and second big part consist of agro and food processing units with 23.3 percent in the year 2012-13.The composition of investment in MSME manufacturing units is presented in the figure 5.4:

The figure 5.4 presents that the large part of investment was invested in textile and apparel units with 43.6 percent and investment in agro based industries was 30.0 percent. The lowest investment was found in agri allied activities and in wooden products and furniture with 0.1 percent and 0.6 percent respectively.

Figure 5.4: Composition of Investment in MSME Manufacturing Units (2012-13)



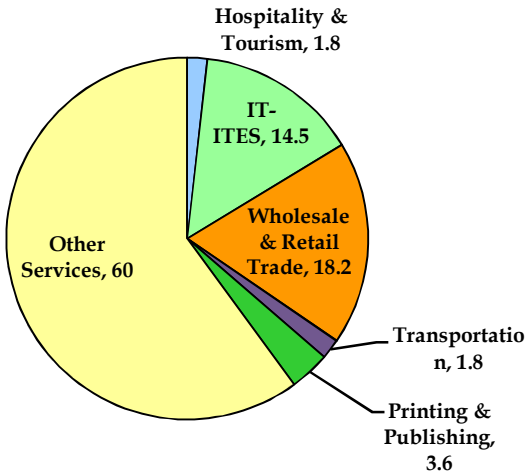
IEM, MSME Part-II Data till 2012-13

5.8 MSME Service Sector

The MSME service sector is categorized in six categories i.e. hospitality & tourism, IT-ITES, wholesale & retail trade, transportation, printing and publishing and other services. The MSME service enterprises are shown in the figure 5.5:

The figure 5.5 illustrated that out of total service sector units, hospitality and tourism units comprises 1.8 percent, IT-ITES comprises 14.5 percent and transportation units consist of 1.8 percent in the year 2012-13. The other services comprises of 60 percent of total units.

Figure 5.5: Composition of MSME Service Enterprises (2012-13)

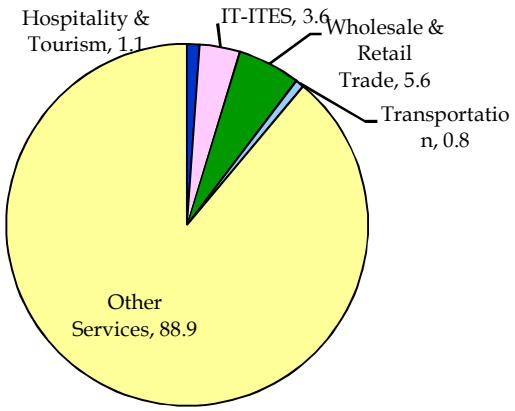


IEM, MSME Part-II Data till 2012-13

The investment in MSME service sector is shown in the figure 5.6:

The figure 5.6 presents that highest part of investment is invested in other service enterprises with 88.9 percent. The other part of investment is invested in hospitality & tourism, IT-ITES, wholesale & retail trade and transportation with 1.1 percent, 3.6 percent, 5.6 percent and 0.8 percent respectively.

Figure 5.6:Composition of Investment in MSME Service Enterprises (2012-13)



IEM, MSME Part-II Data till 2012-13

While the level of organized investments in service enterprises is low as evident from the figure 5.6 and the sectors of wholesale and retail trade and IT-ITES have seen investments in the district.

5.9 Economic Profile of Patan District

The tourism sector of the district is one of sectors which have attracted major investment. There are many places of tourism delight like Queen's Stepwell or Rani ki Vav, Sahastralinga Talav, Panchasara Parasvanath Jain Temple. The district is famous for the patola saree.

The road infrastructure of Patan comprises of National Highway 14,15 and State Highway 7, 8 and 10 which connect the district with the major cities of Gujarat and India. The rail network is part of the western railways connecting Patan with major cities in India such as Delhi and Mumbai via Ahmadabad. The nearest airport to Patan is located at Ahmadabad.

There are 85 bank offices in Patan with total deposits of 2212 Cr. INR and total credit of 980 Cr. INR as on March 2012. Patan has a relatively lower penetration of banking and financial services with a high density of 15, 797 people per bank as on March, 2012. (Source: RBI Statistics, 2012-13)

Owning to the soil characteristics, a majority of the district geographical land is cultivable (70 percent of total area). Patan has moderate rainfall conditions with the average rainfall in the last 10 years being 500 mm. Being a low rainfall witnessing region, Patan has a limited spred of irrigation facilities with only 28.89 percent of net cultivated area under irrigation. Certain talukas like Santalpur have only 5.23 percent of cultivable land under irrigation resulting in poor agriculture in the district.

Bajra, cotton, castor and sesamum are the key kharif crops while mustard, wheat, cumin, gram and fodder crop are the main Rabi crops grown in the district. The ratio of area under Rabi to kharif crop is around 0.5 which indicated significant potential for improvement in multiple

cropping. Main horticulture crops include spices, fruits (mainly mangoes) and vegetables. Currently usage of hybrid crop varieties is low with a need to promote this practice across crop categories. The district has no taluka seed farms which are mainly targeted at improving the availability of quality seeds.

5.10 Workforce Distribution

Patan is predominately dependent on the primary sector for livelihood generation with over three fourths of total workforce engaged in this sector. Considering the low level penetration of manufacturing sector at 7.23 percent employment generation as against the state average of 5.86 percent, district has potential to become a sourcing hub for trained manpower. While the total worker participation rate is marginally better than the state average, high manpower in agrarian activities having low output efficiency indicates under employment. The comparison of workforce distribution scenario in Patan and Gujarat is presented in the table 5.10:

Table 5.10: Percentage Distribution of Workforce in Patan District (2011)

Region	Labour Force Participation	Workforce Participation	Percentage of Employment		
			Primary Sector	Secondary Sector	Tertiary Sector
Patan	60.3	41.3	77.59	7.23	15.18
Gujarat	59.27	41.0	59.34	15.86	24.8

Source: Dept. of Mines & Geology, Patan

The table 5.10 presents that the workforce participation rate in Patan is 41.3 percent but in Gujarat it is 41.0 percent. The percentage of employment in primary sector, secondary sector and tertiary sector is 77.59 percent, 7.23 percent and 15.18 percent respectively but in overall Gujarat it is 59.34 percent, 15.86 percent and 24.8 percent respectively.
The organized employment in Patan is presented in the table 5.11:

Table 5.11:Organized Employment in Patan District (2012-13)

Sr	Category of Industry	Employment
1	Large Scale Industries (commissioned + under implementation)	2143
2	MSME Category	4706
	(a) Manufacturing Unit	4161
	(b) Service Enterprises	545
	Total	**6849**

IEM, MSME Part-II Data till 2012-13

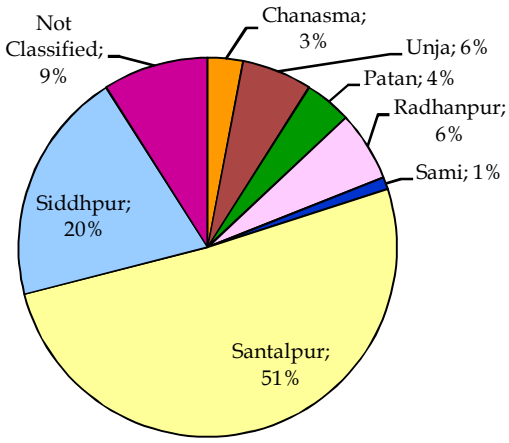
The table 5.11 presents that 2143 people was employed in large scale industries whereas 4706 person was employed in MSME category in Patan district.

5.11 Large Scale Industrial Employment Scenario

Regional and sectoral analysis of large scale industrial employment indicates a clear concentration of employment in key sectors. Santalpur and Sidhpur talukas account for a majority share of employment in this category. Infrastructure and agro processing are major employment generating segments within the district. Regional break up of large scale industrial employment is presented in the figure 5.7:

The figure 5.7 illustrated that out of total employment 3 percent was employed in Chanasma taluka, 6 percent in Harij taluka and 20 percent in Sidhpur taluka in large scale industries. The highest percentage of employment in large scale was found in Santalpur taluka with 51 percent.

Figure 5.7: Regional Distribution of Large Scale Industrial Employment (2012-13)

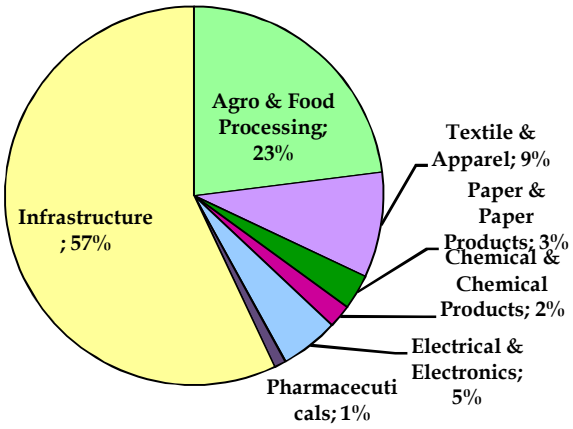


IEM, MSME Part-II Data till 2012-13

The employment in large scale industries is presented in the figure 5.8:

The figure 5.8 illustrated that highest 57 percentage of employment in large scale industries is found in infrastructure units and 23 percent in agro and food processing units in the year 2012-13.

Figure 5.8: Composition of Employment in Large Scale Industries (2012-13)



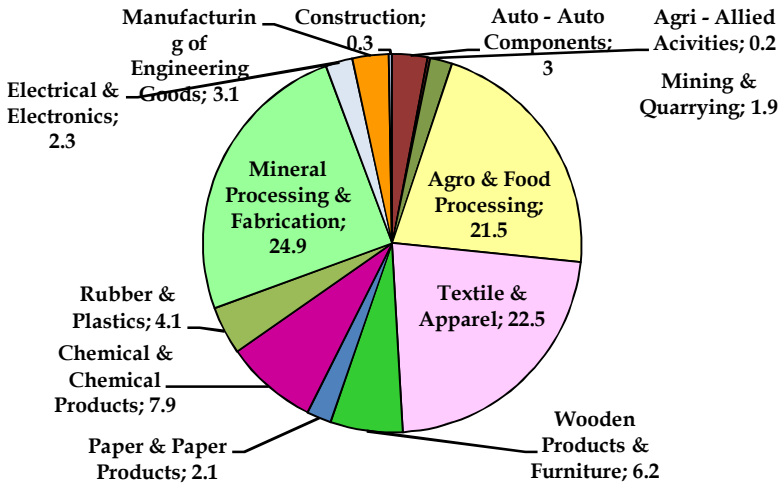
IEM, MSME Part-II Data till 2012-13

5.12 MSME Employment Scenario

Among the manufacturing units in MSME segment textile, mineral processing and fabrication and agro and food processing have accounted for majority share of the employment in all the categories of industries. Basic metal working units, furniture making enterprises have contributed significantly to the micro industries category. Wholesale and retail trade and IT-ITES are major employment generating sectors within tertiary enterprises. Details of sector wise industrial employment in manufacturing MSME units as per 2012 are presented in the figure 5.9:

The figure 5.9 describes that 22.5 percent of total employment in MSME manufacturing units is found in textile and apparel units, 24.9 percent employment was in mineral processing and fabrication units and 21.5 percent employment was found in agro and food processing units.

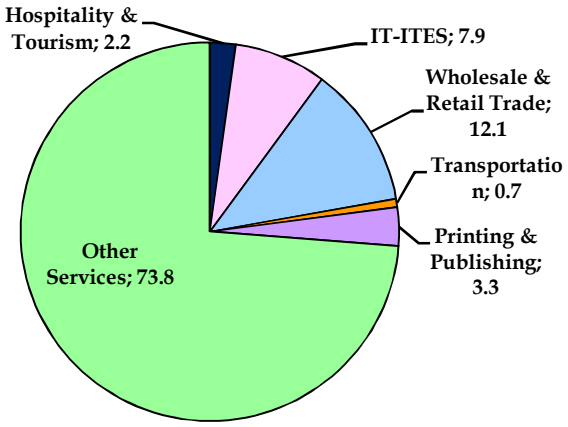
Figure 5.9: Composition of Employment in MSME Manufacturing Units



IEM, MSME Part-II Data till 2012-13

Details of sector wise industrial employment in service MSME units as per 2012 are presented in the figure 5.10. The figure 5.10 shows that out of total employment in MSME services enterprises, other services consists of 73.8 percent, 12.1 percent employment consist of wholesale and retail trade units and 7.9 consists on IT-ITES units.

Figure 5.10: Composition of Employment in MSME Service Enterprises



IEM, MSME Part-II Data till 2012-13

5.13 World's Biggest Solar Plant in Patan District

Charanka Village of Patan district making Gujarat, shine like a Sun in the map of the world. 2000 hectare 'barren and useless' land of Charanka village was used to develop Solar Park. The park is already generating 214 MW solar power out of its total power generation capacity of 600 MW. The solar park is expected to save around 8 million tonnes of carbon dioxide from being released into the atmosphere and save around 900,000 tonns of natural gas per year. Gujarat has been a leader in solar power generation and contributes 2/3rd of the 900 MW power generated in the country.

Advantages of Charanka Solar Power Park

- Solar energy is completely a renewable resource.
- It is pollution free. Since no smoke is emitted into the air. And it does not cause global warming.
- Little maintenance is required during their life span.
- Most of the solar energy systems have a life span of about 30 to 40 years.
- Easy installation and no need of wires and power sources
- Can reduce the electricity bills
- At present solar energy systems are designed for particular needs. And even the solar cells can be placed directly on the lights which cannot be seen.

The development cost of "Solar Park" was Rs 4,500 crore, which includes Rs 550 crore for infrastructure and land acquisition and Rs 3,996 crore for the Solar Power Plant (developers' investment), besides creating employment opportunities for more than 1,000 people on a permanent basis. The "Gujarat Solar Park" has been one of the most innovative projects in the solar energy sector, having a large concentration/cluster of solar power generating units at a single location, thereby reducing the cost substantially (40%), and bringing down solar tariff to pave the way for large-scale development of solar power projects.The innovative park commissioned by GPCL demonstrates its skills in the implementation of a complicated project in a short time, in spite of several challenges and complications.

Atractions of Gujarat Solar Park World's first Multi developer, Multi facility, Multi Technology and Multi beneficiary solar park

5.14 SWOC Analysis of Industrial Sector

The SWOC analysis of industrial sector is described in Box 5.1:

BOX 5.1: SWOC Analysis of Industrial Sector

Strength	Weakness
• Abundant availability of minor minerals like sand, brick sand and ordinary sand • Abundant availability of major minerals like white clay, china clay, red okhar and boll clay • Availability of huge man power • Developed production base •	• Dependence on other districts for coal • Inadequate infrastructure in the district • High cost of capital • Labour productivity is still low
Opportunity	**Challenges**
• Huge and growing domestic demand • Consolidation of small producers into a big producers • Exports • Unexplored rural market • Scope in solar energy	• Demand volatility • Technological changes • Price war • Tough competition • Increae the production of boll clay and brick sand

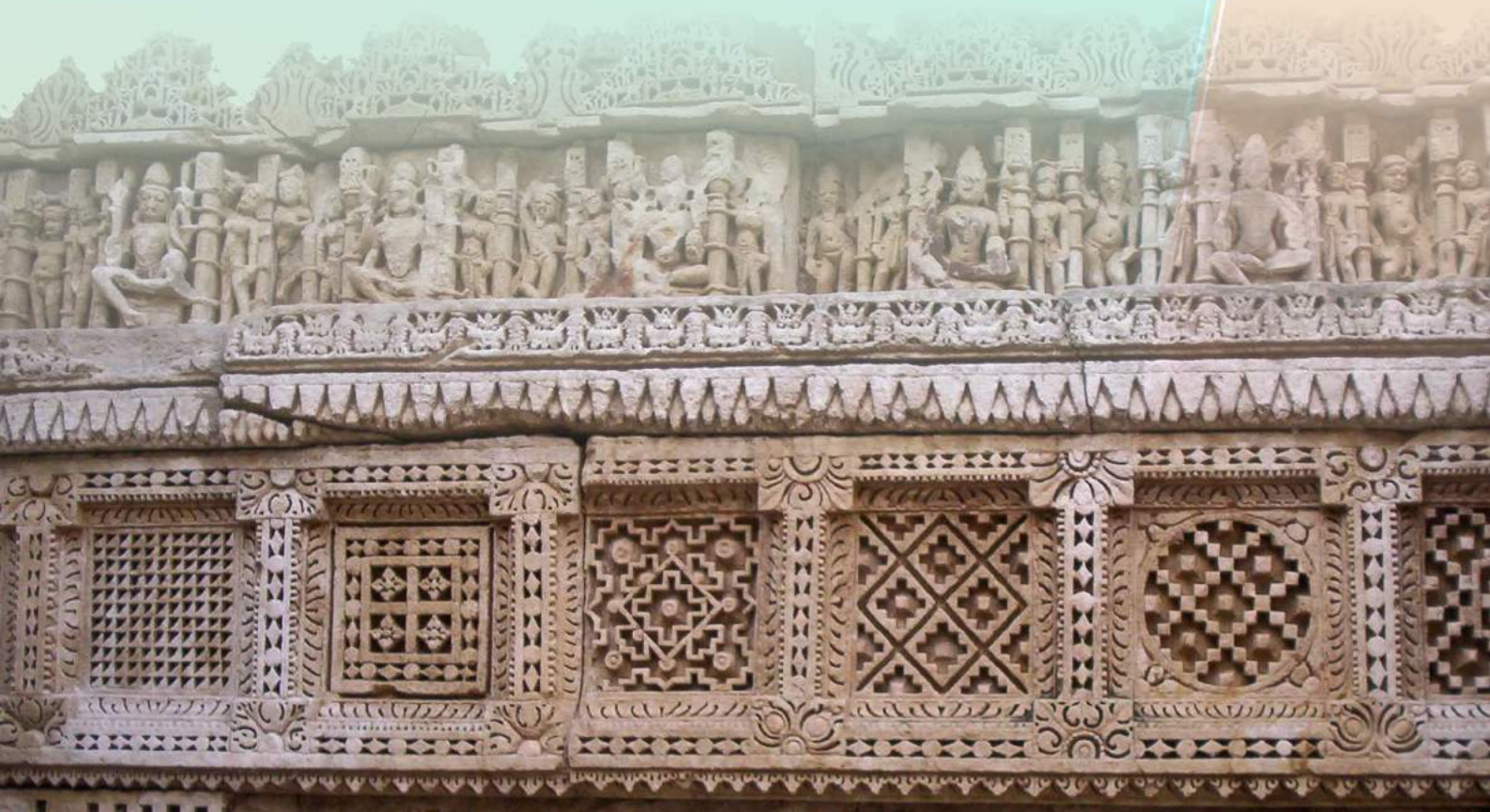
OOOO

CHAPTER - VI

Tourism and Recreation

Facts

Tourist Flow in Patan District	**2013-14**	128389
Flow of Tourists from Other Indian States	**2013-14**	**37499**
Tourist for Leisure Purpose	**2013-14**	37654
Tourist for Spiritual Purpose	**2013-14**	63475
Tourist of Luxury Class	**2013-14**	3258



Chapter 6

Tourism & Recreation

6.1 Introduction

Patan is one of the important fortified towns of Gujarat, situated on the banks of the River Saraswati. It was founded in 746 AD by the Chavda king, Vanraj Chavda. During the Solanki period, the glory of Patan reached at its peak. It was known as the Golden age of Gujarat. The rulers of Patan were great patrons of art and architecture.

A number of civic as well as religious buildings were constructed in the city, including many Hindu, Muslim and Jain religious places. However, the Jain temples outnumber the others. They are about 122 in number and more than 100 years old. Besides, there are 9 Hindu temples and 12 Mosques in the city. These monuments are a major attraction from travel and tourism point of view. The foreign tourists throng the city, to view the amazing monuments adorned with intricate carvings and sculptures.

Patan, the former capital of Gujarat, is a place famous for Patola sarees, one of the finest hand-made textiles in the world. One can see this exquisite fabric being woven here. The Patan Patola is one of the finest hand-woven textiles produced the world over. It combines the art of tying and dyeing of the warp and weft threads and their weaving together, when each warp thread is carefully placed against the corresponding colors of the weft. Also known as the double Ikat, it is woven only in Bali, Indonesia besides Patan.

In an area called Sadvi Wada, one can watch the complex weaving of silk Patola saris, which are now made by just one family. Each sari takes from four to six months to produce, and is sold for up to Rs. 70, 000 (more than US$ 2,000). Silk threads are dyed in a set pattern before being woven on a complex loom and utmost care is taken to ensure completely even tension throughout the fabric. Patan produces very intricate patterns worked with precision and clarity with the characteristic geometric delineation of the design, while maintaining the soft hazy outlines, a natural effect of the technique.

Gujarat is one of the most diverse States in India. Its history stretches over a long years from the age old Harappan Civilization to the Mughal period. Gujarat's endless journey from Roots to Wings is timeless with historical and cultural traditions glorifying the State. Though till now, Gujarat was considered as a hub for commercial and industrial activity, has immense potential for tourism development with its vast cultural and religious heritage, varied natural attraction and long coastal line. The Tourism policy of the state is aimed at its socio-economic development by developing world-class tourist facilities with ensuring optimum utilization of available resources and developing specific tourist destinations for national and international tourists.

Gujarat is situated on the western coast of the Indian sub continent covering an area of 1,96,026km, the state has been transformed into an industrial power-house during the last three

decades reducing its dependence on agriculture and textiles. Although the population of Gujarat is only about 5% of India, it accounts for 10% of India's consumption, 16% of total exports and 30% of total stock market capitalization.

To achieve its vision of tourism development, the state government has set up a company, Gujarat Tourism Project Development Company, in association with Infrastructure Leasing & Financial Services Limited (IL&FS).

6.2 Tourist Circuits in Gujarat

The Government introduced certain circuits, covering Saurashtra – Kutch, North Gujarat, Ahmedabad, Baroda and South Gujarat. A detailed exercise for identification of circuits has been done and the circuits that have been identified are:

- Kutch circuit (Little Rann Sanctuary, Narayan Sarovar, Koteshwar, Mata-no Madh, Bhadrashwar, Dholavira, Bhuj, Mandvi)
- Saurashtra circuit (Bhavnagar, Palitana, Velavadar, Ahmedpur Mandvi, Veraval, Somnath, Rajkot, Gondal, Porbandar, Dwarka, Jamnagar, Wankaner)
- North Gujarat circuit (Dasada, Mehsana, Modhera, Sidhpur, Balaram, Ambaji, Poshina, Danta, Taranga, Vadnagar),
- Central Gujarat Circuit (Ahmedabad, Lothal, Vadodara, Balasinor, Dakore, Santarampur, Dahod, Chhota Udepur, Chandod, Rajpipla)
- South Gujarat Circuit (Sardar Sarovar- Kevadia, Kabir Vad, Surat, Tithal, Udwada, Navsari, Saputara).

IL&FS Infrastructure Development Corporation Ltd (IL&FS IDC) appointed as the National Level Consultant (NLC) by Ministry of Tourism, is in the process of identifying tourism circuits across all the States and UTs (except North-East) and three circuits that have been covered, are;

Circuit 1: Gir-Somnath-Ahmedpur Mandvi-Junagadh
Circuit 2: Bahucharji-Patan-Sidhpur-Ahmedabad
Circuit 3: Bhavnagar-Rajkot-Junagadh (Buddhist Circuit)

6.3 Brief Profile of Bahucharji–Patan–Sidhpur–Ahmedabad

This circuit covers a distance of approximately 209 km with Ahemdabad as an entry/exit point. It would take two days to complete visiting the tourist spots on this circuit.

Mehsana District: Bahucharji Temple

The Bahucharaji is a famous temple of Goddess Bahucharaji that is 110 kms from Ahmedabad and 35 kms from Mehsana. It is one of the three holy Shakti Peeths in the state. The original temple complex was built in year 1783 AD. Every year an estimated 1.5 million pilgrims visit this temple.

Patan District: Patan

Patan was an educational and a prosperous trading center during the Solanki period that is said to be the golden age of Gujarat. There are at least 100 Jain temples here of which the ones that are considered to be the most significant monuments are: Rani Ki Vav and Sahastralinga Talav.

Rani Ni Vav: It is an elaborately carved well that was constructed by Udaymati, the queen of Bhimdev (1022-63 AD). It consists of a series of pillars, beams, steps and platforms that lead to the main well.

Shastralinga Talav: It is an artificial tank built in patronage of Siddhraj Jaisingh (1093-1143 AD) at what used to be then, River Saraswati.

Sidhpur

It is a town on the bank of the Saraswati River that derives its name from the great ruler of Gujarat, Siddhraj Jaisingh. Every year the Sidhpur Camel Festival, which is a traditional fair, is held here during the month of Kartik and this attracts a lot of local tourists. People also come to a place here called Matrugaya where, it is said that, Lord Parshuram performed Pind Dan and Shradh ceremony. They are even today performed at the Kapilamuni Ashram, where 3 sacred water kunds: Gyan Vapika, Alpa Sarovar and Bindu Sarovar are present. Bindu Sarovar is considered among the top five most ancient and holy lakes in India by the Hindus. The town also holds importance for the Bohra Muslims which is an affluent Muslim community. Their old Havelis and mansions here, some even over 100 years old, have intricate carvings imitating the Victorian architecture.

6.4 Tourist Flow

The tourist flow in Patan district is presented in the table 6.1:

Table 6.1: Tourist Flow in Patan District (2012 to 2014)

	2012-13		2013-14		Growth Rate
	No	%	No	%	
Patan District	124397	1.04	128389	0.88	3.21
Gujarat	11939464	100.0	14594989	100.0	22.24

Source: Annual Report 2013-14, Department of Tourism, Patan

The table 6.1 shows that flow of tourist in Patan district was 124397 in the year 2012-13, which is 1.04 percent of total tourists in the state whereas in the year 2013-14, the flow of tourist was 128389 which is 0.88 percent of total tourists. Although the growth rate of tourists flow was 3.21 percent in 2013-14 yet the percentage of tourists is decreasing in Patan district.

6.5 Tourist Origin

The origin of tourists in Patan district is presented in the table 6.2:

Table 6.2: Destination Wise Tourist Origin (2013-14)

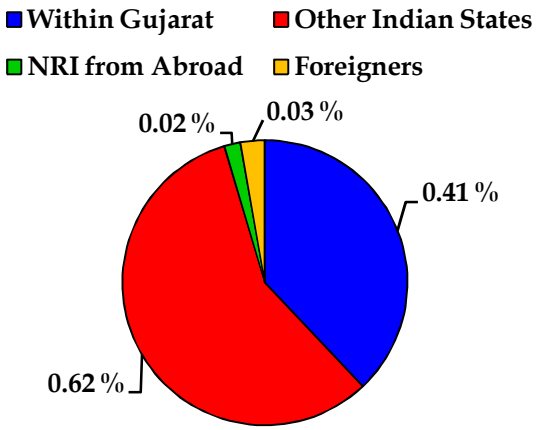
Destination	Patan District		Gujarat
	No.	%	No.
Within Gujarat	90781	0.41	22160853
Other Indian States	37499	0.62	6061418
NRI from Abroad	51	0.02	337671
Foreigners	58	0.03	228025
Total	**128389**	**0.45**	**28787967**

Source: Annual Report 2013-14, Department of Tourism, Patan

The table 6.2 shows that during the year2013-14, 90781 tourists were from within the Gujarat which is the 0.41 percent of total within Gujarat tourists. Tourists from other Indian states in Patan district was 37499 which is the 0.62 percent of total tourist from other Indian states. Total 109 tourists were NRIs from abroad and foreigners which is the 0.02 percent of total NRIs and foreigners.

The percentage of destination wise tourist origin is presented in the figure 6.1:

Figure 6.1: Destination Wise Tourist Origin (2013-14)



Source: Annual Report 2013-14, Department of Tourism, Patan

The flow of tourists from other Indian states is presented in the table 6.3:

Table 6.3: Flow of Tourists from Other Indian States (2013-14)

Sr	State	Patan District		Gujarat	
		No.	%	No.	%
1	Maharashtra	9963	26.57	2247158	37.07
2	Madhya Pradesh	4590	12.24	787427	12.99
3	Rajasthan	6540	17.44	1092865	18.03
4	UP/Bihar	6997	18.66	982730	16.21
5	West Bengal	2487	6.63	264031	4.36
6	Other North/East Indian States	2901	7.74	255570	4.22
7	South India	4021	10.72	431637	7.12
	Total	**37499**	**100.00**	**6061418**	**100.00**

Source: Annual Report 2013-14, Department of Tourism, Patan

The table 6.3 describes that highest 9963 tourists was from Maharashtra which is 27 percent of total flow of tourists from other Indian states in Patan district. It is followed by UP/Bihar and Rajasthan with 6997 and 6540 tourists respectively. In Patan district only 8 percent tourist was from other North/East Indian states and 11 percent tourists was from South India in Patan District.

6.6 Purpose of Tourism

The system recognizes four purposes viz. business, religion, leisure and other. It recognizes the single most dominant purpose for a given tourist and excludes scope for multiple purposes and ranking of these on the part of an individual tourist. The purpose of tourism in Patan district is shown in the table 6.4:

Table 6.4: Tourist Purpose in Patan District (2013-14)

Sr	Purpose	Patan District		Gujarat	
		No.	%	No.	%
1	Business	00	0	4887213	16.98
2	Leisure	37654	29.33	4742224	16.47
3	Spiritual	63475	49.44	6652315	23.11
4	Other	272600	21.23	12506242	43.44
	Total	**128389**	**100.00**	**28787994**	**100.00**

Source: Annual Report 2013-14, Department of Tourism, Patan

The table 6.4 shows that out of total tourists 37654 tourists went to Patan district to spend their leisure time which is 29.33 percent of total tourists where as 63475 tourist arrived Patan district to do religious tour which is 49.44 percent of total tourists. It is surprising to note that no one tourist arrived Patan for business purpose.

6.7 Tourist Class

The class of tourists is defined on the basis of character of hotel/guest house. The definition followed is generous. It is as follows.

Description	Class
Accommodation units having tariff above Rs.750/- for double bed room	High
Accommodation units having tariff for double bed room between Rs.350-749	Medium
Accommodation units having tariff up to Rs.349 for double bed-room	Economy

The class of tourists in Patan district is shown in the table 6.5:

The table 6.5 shows that out of total tourist 2.54 percent are from luxury class and 34396 are from high class which is 26.79 percent of total tourists. In Patan district, highest 49.44 percent tourists are from medium class whereas highest 43.44 percent tourists are from economy class in Gujarat state.

Table 6.5: Tourist Class in Patan District (2013-14)

Sr	Class	Patan District		Gujarat	
		No.	%	No.	%
1	Luxury	3258	2.54	4948305	17.19
2	High	34396	26.79	4681135	16.26
3	Medium	63475	49.44	6652315	23.11
4	Economy	27260	21.23	12506242	43.44
	Total	**128389**	**100.00**	**28787994**	**100.00**

Source: Annual Report 2013-14, Department of Tourism, Patan

6.8 Tourist Attractions in Patan District

Hemachandracharya Jain Gnan Mandir

Hemachandracharya, renowned Jain scholar and poet, is credited with formulating Gujarati grammar. His treatise 'Siddha Hema Shabdanushasana', written during the rule of Siddharaj Jayasinh, is seen as a counterpart to Panini's treatise on Sanskrit grammar. The poet built this Gnan Mandir, literally "knowledge temple", an ancient library that includes a number of ancient palm-leaf Jain manuscripts (some written in ink of gold) and literature that he wrote.

Jain Temples

Panchasara Parshvanath Jain Derasar is one of the largest of more than 100 Jain temples in Patan, a reminder of Patan's role as center of Jainism during the Solanki era, with sophisticated stone carvings and white marble floors that are characteristic of Jain architecture. It is also worth visiting Kapur Mahetano Pado, where the stone temple has a wooden interior. Jain temples were once all of fantastically and intricately carved wood until, it is said, the master-builder Uda Mehta saw a mouse carrying a burning candle in its mouth and realized that one mishap would destroy years of work, and from then on insisted that all Jain temples should be created in stone.

Mashru Weavers

Mashru weaving is also a craft worth observing. The fabric is woven in vibrant colors from silk and cotton threads, in a satin weave, with silk on the outer face of the piece, and cotton worn close to the body. It was initially only used by Muslim men because the Islamic law prohibited pure silk, but Hindu communities too began using it later. It is used by women in some Kutchi communities to stitch garments for their dowry, and was also exported to Turkey and the Middle East. When the

export market fell, the cheaper rayon replaced Mashru.

Patola Weavers

Patola is the name of the silk saris unique to Patan. One version of the Patola legend is that King Kumarpal (12th century) commissioned Patola robes from Jaina (South Maharashtra), a new one for every daily puja. When he learned the King of Jaina was sending him used clothes, he went to the south to attack and defeat the southern ruler. He brought back 700 Patola weaver families to Patan. Of those families, only the Salvis continue the craft today. Patola is one of the most difficult forms of weaving in the world. It uses a double ikkat style where the warp and weft threads are dyed meticulously before weaving, according to a pre-designed pattern. The weaver then aligns them perfectly on the loom, which naturally creates a unique combination of geometric delineation with soft hazy outlines. Besides in Patan, double ikkat is used only in Bali, Indonesia. It is said that an Indonesian king visited India, was awed by the Patola craft, and took it back to his land saying that only Indonesian royalty would be allowed to wear it. The saris take 4-6 months to make, with more than 70 days for the coloring of the silk threads, and about 25 days for the weaving.

They come in four styles: 1) for the Jains and Hindus, with flowers, parrots, elephants, and dancing figures, 2) for the Muslim Bohras, with geometric and floral design, to be used at weddings, 3) for Maharashtrian Brahmins, in solid dark colors bordered with designs of women and birds, called Nari Kunj, and 4) for traditional export markets in the Far East.

Rani Ki Vav

Rani (Queen) Udayamati commissioned this vav or stepwell, in 1063 in the memory of her husband King Bhimdev I of the Solanki dynasty. The vav was later flooded by the nearby Saraswati river and silted over until the late 1980s, when it was excavated by the Archeological Survey of India, with the carvings found in pristine condition. Rani Ki Vav is amongst the finest stepwells in India, and one of the most famous legacies of the ancient capital city. The vav's of Gujarat are not merely sites for collecting water and socializing, but also simultaneously hold great spiritual significance. They were originally constructed quite simply, but became more intricate over the years, perhaps to make explicit this ancient concept of the sanctity of water by carving it out in stone deities. You may thus enter Rani Ki Vav as if it is a subterranean temple.The steps begin at ground level, leading you down through the cool air through several pillared pavilions to reach the deep well below. There are more than 800 elaborate sculptures among seven galleries. The central theme is the Dasavataras, or ten incarnations of Vishnu, including Buddha. The avatars are accompanied by sadhus, brahmins, and apsaras (celestial dancers), painting their lips and adorning themselves. At water level you come to a carving of Sheshashayi-Vishnu, in which Vishnu reclines

on the thousand-hooded serpent Shesha, where it is said he rests in the infinity between ages.

Sahasralinga Talav

The Sahastralinga Talav (lake) occupies the north-western part of the historical city of Patan. It is on the left bank of river Saraswati. The 'talav' is reputed to have been built by Siddharaja Jaisinh, the Chalukyan ruler of Gujarat. An inscription found in the Shiva Temple in Vyala Kua Street of Patan indicates that the lake was part of a much larger work. Siddhraj Jaysinh built the reservoir Sahasralinga Talav, meaning "lake of a thousand lingas", just north of Rani Ki Vav in 1084, over a lake riginally known as Durlabh Sarovar, built by the King of Durlabhray. During his rule he had many artificial tanks built in different parts of Gujarat, but this one surpasses all the others, technologically, artistically, and spiritually.

Shankheshwar

Shankheshwar is an important tithas (place of pilgrimage)of Jainism. It is situated in the Patan district of Gujarat state of India. A fair is held here on the full moon days of the Hindu calendar months Chaitra, corresponding to March or April, and Kartik, corresponding to October or November, and the tenth day of the second half of Maghashirsha, corresponding to December or January. The temple ranks next only to those on Mount Shatrunjaya in Palitana, (Gujarat) in terms of importance to the Jain.

Sidhpur

One can reach Sidhpur via Unjha. It is situated in Patan district. Here one comes across rows and rows of palatial wooden 19th century townhouses. Painted in subdued pastel colours and built three-to-four storeys high, most of them were erected by the Bohras, Gujarat`s affluent mercantile Muslim community. Today, most of the houses remain locked for most part of the year and exhibit an oddly quiet and desolated European town look. But once a year (generally in December), the streets again pulsate with life, because the Bohra families return to Sidhpur for social ceremonies.

6.9 Project Identification and Funding by Government

Both Rani Ki Vav and Shastralinga Talav are very well maintained with all necessary tourist-infrastructure in place but heritage monuments across Sidhpur need conservation measures

and parking is a major issue here. Some projects identified by government to improve Patan circuit are as:

Rani –Ki-Vav Project

Sr.	Project Name	Indicative Cost (Rs. Cr.)
1	Conserve / Restore / Maintain Heritage and Archaeological Structures	25.00
2	Resurface Roads to Rani-ni- Vav (Patan) for last mile connectivity (2kms)	0.02
3	Redevelopment of Bus Station at Patan	1.00
4	Provision of segregated parking for taxis and private cars (15 ECS)	0.23
5	Provision of Signages within City of Patan	0.05
6	Provision of Gantry Signage at the entrance of Road Leading to Rani-ni-Vav	0.02
7	Provision of signages / story boards describing the heritage within Rani-ni-Vav	0.02
8	Development of Tourist Information Centre at Rani-ni-Vav	0.06
9	Construction of OHT	0.15
10	Drinking water facility (2 nos.)	0.32
11	Development of Vermi-composting facility in vicinity of destination and dustbins	0.22
12	Public Toilets (2 nos.)	0.14
13	Non Corrosive lighting of the monuments at Rani Ki Vav	1.00
14	Provision of solar powered street lights and high mast flood lights at Rani-ni-Vav	0.24
15	Conversion of the informal shops to formal	3.00
16	Provision of internet, telephony and mobile recharge kiosks in vicinity of temple complex	0.06
17	Provision of Police Station/ Chowki within 500 m of Destination; CCTV cameras	0.30

Shastralinga Talav Project

Sr.	Project Name	Indicative Cost (Rs. Cr.)
1	Conserve / Restore / Maintain Heritage and Archaeological Structures	10.00
2	Resurface Roads to Sahastralinga Talav (Patan) for last mile connectivity (2kms)	0.02
3	Provision of segregated parking for taxis and private cars (20 ECS)	0.30
4	Provision of Gantry Signage at the entrance of Road Leading to Sahastralinga Talav	0.02
5	Provision of signages / story boards describing the heritage within Sahastralinga Talav	0.02

6	Development of Tourist Information Centre at Sahastralinga Talav	0.06
7	Construction of OHT	0.15
8	Drinking water facility (2 nos.)	0.32
9	Development of Vermi-composting facility in vicinity of destination and dustbins	0.22
10	Public Toilets (2 nos.)	0.14
11	Non Corrosive lighting of Sahastralinga Talav	1.00
12	Provision of solar powered street lights and high mast flood lights at Sahastralinga Talav	0.24
13	Conversion of the informal shops to formal	1.80
14	Provision of internet, telephony and mobile recharge kiosks in vicinity of temple complex	0.06
15	Provision of Police Station/ Chowki within 500 m of Destination; CCTV cameras	0.30

Bindu Sarovar Project

Sr.	Project Name	Indicative Cost (Rs. Cr.)
1	Provision of segregated parking for private buses near temple complex (10 buses)	0.20
2	Provision of segregated parking for taxis and private cars near temple complex (25 ECS)	0.38
3	Provision of Gantry Signage at the entrance of Bindu Sarovar	0.02
4	Provision of signages / Information boards within temple complex	0.02
5	Construction of OHT	0.15
6	Seating and Resting facilities (benches / shades)	0.10
7	Landscaping within temple complex	0.10
8	Provision of CCTV Cameras	0.32

Rudra Mahal Project

Sr.	Project Name	Indicative Cost (Rs. Cr.)
1	Development of economic accommodation facilities in Sidhpur (2 units, 25beds each)	8.05
2	Resurface City Roads at entrance to various tourist destinations (4kms)	0.03
3	Develop Wayside Amenity along SH connecting Ahmedabad Sidhpur (1 unit)	0.50
4	Develop Wayside Amenity along SH connecting Patan Sidhpur (1 unit)	0.50
5	Develop Wayside Amenity at the entrance of Sidhpur (1 unit)	0.50
6	Redevelopment / Modernisation of Bus Station at Sidhpur	1.00
7	Provision of signages / Information boards within Sidhpur	0.04

Sr.	Project Name	Indicative Cost (Rs. Cr.)
8	Development of Tourist Information Centre at Sidhpur	0.06
9	Non Corrosive lighting of Rudra Mahal	1.00
10	Provision of segregated parking for taxis and private cars (10 ECS)	0.15
11	Provision of signages / Information / Story boards	0.02
12	Construction of OHT	0.15
13	Seating and Resting facilities (benches / shades)	0.10
14	Landscaping	0.10
15	Provision of CCTV Cameras	0.40
16	Conserve / Restore / Maintain Heritage and Archaeological Structures	5.00

Bohra Mansions Project

Sr.	Project Name	Indicative Cost (Rs. Cr.)
1	Non Corrosive lighting	1.00
2	Provision of segregated parking for taxis and private cars (10 ECS)	0.15
3	Provision of signages / Information boards within temple complex	0.02
4	Seating and Resting facilities (benches / shades)	0.10
5	Landscaping in vicinity of Heritage Houses / Mansions	0.10
6	Conserve / Restore / Maintain Heritage and Archaeological Structures	25.00

6.10 SWOC Analysis of Tourism Industry

The SWOC analysis of tourism industry in Patan district is shown in the box 6.1:

BOX 6.1: SWOC Analysis of Tourism Sector

Strength	Weakness
• Patan has historical monuments represents the great religious – Hindu, Jain and Islamic • The archaeological zone Rani ki Vav are in status of the world heritage site. • Medical tourism has high growth potential because of the availability of high quality of treatment	• Poor accessibility to many tourists destinations due to basic infrastructure and proper transportation. • Lack of basic amenities at many tourist destinations • Lack of information about tourist destinations • Unfavourable brand image as a tourist friendly destination • Lack of promotional activities • Lack of investors for Patan tourism
SWOC ANALYSIS	• Competition from South, East and Kachchh tourist circuits • Competition from other parts of Indian states.
• Patan upcoming as spiritual and heritage well being tourism. • Private sector investment opportunities. • Scope for urban and rural tourism • Scope for investment in new ventures • Joint ventures may encourage with private parties • Excellent infrastructure facilities.	
Opportunity	**Challenges**

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CHAPTER - VII

A Way Forward

Chapter 7

A Way Forward

Patan district is a relatively low human resource potential region in Gujarat state. District has a total population of 13.42 lakhs as per 2011 Census district accounting for 2.2 percent of the overall state population. District has witnessed lower decadal population growth in comparison to the overall state. Patan population has witnessed a decadal growth rate of 13.53 percent between 2001 and 2011 as against the state average of 19.17 percent during the same period. A significant portion of the district population lives in rural areas accounting for 79.07 percent of the total population. Population spread in the district is considerably lower than the state average with a density of 234 persons per sq.km as against state average of 308 persons per sq.km.

Education attainment levels in the district are lower than the state average. As per 2011 estimates, district has registered an overall literacy rate of 73.47 percent 1054 as against state average of 79.31 percent. Continuing regional and gender variations in literacy rates is a key concern within the district. Urban-rural literacy gap in Patan is estimated to be 13.75 percent comparable to the state average of 14.58 percent. Similarly, the district still has a male-female literacy gap of 22.27 percent as against 16.5 percent for Gujarat state. There is a greater need to embark gender specific approach in implementing mass education programs in the district. Increasing focus on literacy would create demand for education and training facilities within the district to support the economic growth of the region.

With the recent surge in investments in the oil and gas sector, Patan is progressively shaping up into an attractive destination for investors. The textile sector also contributes largely to the district economy. Patan Patola is one of the finest hand woven textile materials produced. Besides this, Mashru, a mixed fabric, woven with a combination of cotton and silk is also traditionally produced in Patan.

The tourism sector of the district is one of the sectors which have attracted major investment. There are many places of tourism delight like Queen's Step well or Rani Ki Vav, Sahastralinga Talav, Panchasara Parasvanath Jain temple. The district is also famous for the Patola saree

The district is the headquarter to the Hemchandracharya North Gujarat University and also has the Government Engineering College, K.D. Polytechnic College and Sheth M. N. Law College. The district has medium penetration of medical institutions with 30,516 people per institute. It has 29 primary healthcare centers, 13 community healthcare centers and 2 hospitals. Apart from the above, Patan also has Sonam Hospital and Urology Centre in Sidhpur, City Hospital & Gastroenterology Research Centre and Sewa International Hospital.

The road infrastructure of Patan comprises of National Highway 14, 15 and State Highway 7, 8 and 10 which connect the district with the major cities of Gujarat and India. The rail network is part of the Western railways connecting Patan with major cities in India such as Delhi and Mumbai via Ahmadabad. The nearest airport to Patan is located at Ahmadabad.

Owning to the soil characteristics, a majority of the district geographical land is cultivable (70 percent of total area). Patan has moderate rainfall conditions with the average rainfall in the last 10 years being 500 nm. Being a low rainfall witnessing region, Patan has a limited spread of irrigation facilities with only 28.89 percent of net cultivable area under irrigation. Certain talukas like Santalpur have only 5.23 percent of cultivable land under irrigation resulting in poor agriculture in the district.

Bajra, Cotton (desi)/cotton (irrigated), castor and sesamum are the key Kharif crops while Mustard, Wheat, Cumin, Pulse (Gram) and fodder crop (Lucerne) are the main Rabi crops grown in the district. The ratio of area under Rabi to Kharif crop is around 0.5 which indicates significant potential for improvement in multiple cropping. Main horticulture crops include spices, fruits (mainly mangoes) and vegetables. Currently usage of hybrid crop varieties is low with a need to promote this practice across crop categories. The district has no Taluka Seed Farms which are mainly targeted at improving the availability of quality seeds.

Cow and buffalos are main cattle varieties in Patan with 1,12,020 cows and 3,69,514 buffalos. The other prominent domestic animal under animal husbandry activities is goat. Availability of pasture lands indicates significant potential to promote animal husbandry in the district. Along with strengthening animal husbandry activities among small and marginal farmers through advanced rearing training, there is a need for integrating the animal husbandry with promotion of organic farming.

It is expected that a Human Development Report would identify the problems associated with human development in the reference area and offer some suggestions towards rectifying those problems. The objective of this concluding chapter is to reflect on some general guidelines that we hope will help the district in traversing the future path. This is an unenviable task, knowing fully well that without more detailed policy recommendations at the block level taking into account the characteristics and problems faced by each individual block, any general policy is bound to have limited impact on the human development of the individual blocks, at least in the short-term.

To make this exercise a successful one, it is imperative to arrive at an integrated participatory coordinated plan of development of each different area, based on the general guidelines found in this report. An essential step in this direction is to ensure consolidation from the grassroot level. Though a large section of people still depend on agriculture for their livelihoods, in the post liberalization era agriculture has become relatively unremunerative after the gradual withdrawal of farm subsidies. The lack of irrigation facilities also has limited the labour absorbing power of agriculture denying rural people very important employment opportunities. This needs to be taken care of immediately.

Horticulture offers considerable potential for employment generation and productivity growth in the district. But absence of local processing industries and poor storage and marketing facilities due to lack of rural infrastructure sometimes lead to huge loss on the part of the cultivators. Development of infrastructure and promotion of local agro-based industries are required to provide the farmers with incentives to cultivate these crops. Some projects need to be promoted on an urgent basis.

The growth of industrial output in the district has been lower than that of the state by a significant extent in the recent past. If infrastructure – particularly good roads and industrial power - can be properly developed, the district has the potential to become a very attractive destination for new industrial investment.

The achievement of the district in education is encouraging. But there is no scope of complacency and much is yet to be done. This is the time to consolidate and to make sincere efforts to improve upon aspects that were not properly attended to. The achievement of the district in reducing illiteracy and promoting female literacy is commendable. But the gender gap is still alarmingly high for many blocks. Literacy rates for some backward pockets and for some underprivileged communities are still unacceptably low. Thus there is need of geographical, community-based targeting of literacy programmes. Gender friendly non formal institutions and literacy centres should be established to reduce gender gap in literacy. The performance in school enrolment clearly gives a sign that the district in near future will achieve the target of universal enrolment. But drop out rates at all stages of education are alarmingly high.

Female enrolment falls drastically when the age of marriage is approached. Thus there is need to provide some incentive to retain girl students. The system of mid day meal has well known positive impact on retention. Now that the programme is extended to the upper primary level, a positive impact on retention can be expected. Introduction of financial grant can be effective to retain girls at a higher level of education.

The importance of female literacy in human development cannot be overemphasized. Increase in female literacy has significant positive impact on aggregate literacy, dropout, and on maternal and child health. The involvement of community and local Panchayat can be effective in reducing drop out of girl children. Proliferation of educational infrastructure at the primary level is better compared to educational institutions at a higher level.

Student teacher ratio and number of students per school increase substantially in secondary and higher secondary schools when compared to a primary school. Unavailability of college level infrastructure in the district is a well known obstacle to higher education. Thus along with consolidation of achievement at the primary level, proliferation of higher level institutions should be sincerely targeted. The quality aspects of education by improving physical infrastructure, full time teaching personnel should get attention.

Government programmes on education aim at improvement of educational scenario of the district. The successful running of adult education centres has resulted in eradication of adult illiteracy to a large extent in recent years. These programmes cannot be sustained if they are not linked with employment generation opportunities. Continuing Education Centres provide such employment opportunities. But there is need to converge the literacy programmes with other developmental programmes, particularly those geared towards employment generation.
The analysis of the health situation shows that there is scope for considerable improvement in almost all areas. The existing health infrastructure in most blocks does not satisfy existing national norms. This creates a tremendous pressure on blocks where the local population relies

heavily on public health facilities. A rather disturbing feature associated with public health in the district is that the reliance on public health facilities is low. This particular feature indicates the lack of faith of the people in public health facilities wherever alternatives are available even if they are more expensive. Apart from health care infrastructure and its accessibility, problems relating to maternal and child health also requires serious attention, particularly in view of their implications for subsequent generations.

These problems cannot be solved through a 'top-bottom' approach, but require building community awareness and involvement. NGOs can play an important role in this respect. The ICDS also has a major potential role. Gram panchayats have to be involved more actively. The scarcity of Female Health Assistants and trained Dais, and their non-availability in the locality are institutional impediments to improving the situation with respect to maternal health. This problem must be addressed by the Health Department. The state Government must also realize the economic importance of health and release financial resources accordingly.

In the agriculture sector, clearly the way forward for the district would be transformation of its agriculture to meet the consumption demands of the urban centres through specialization in the production of vegetables and horticulture crops. Connectivity and communication being crucial for development, sustained efforts should be made by the both the government and the community for maintenance of the national highways and arterial roads and for prevention of untoward incidences. While the district is well placed in the HDI ranking, attention is called for revamping the primary and secondary education in the government sector in rural areas to ensure equitable and inclusive human development. On the issue of employment, the work force needs to be reoriented to the opportunities in the entrepreneurial sector and to the job market requirements in the service sector.

Public private partnerships and participation of the community would be crucial in shaping and maintaining its development process. Here the rich social capital has to be capitalized. In conclusion, it will depend on the sagacity and the tenacity of the people of the district to realize and appreciate its potentials, recognise the pitfalls, optimize its strengths and opportunities to develop it into a model district.

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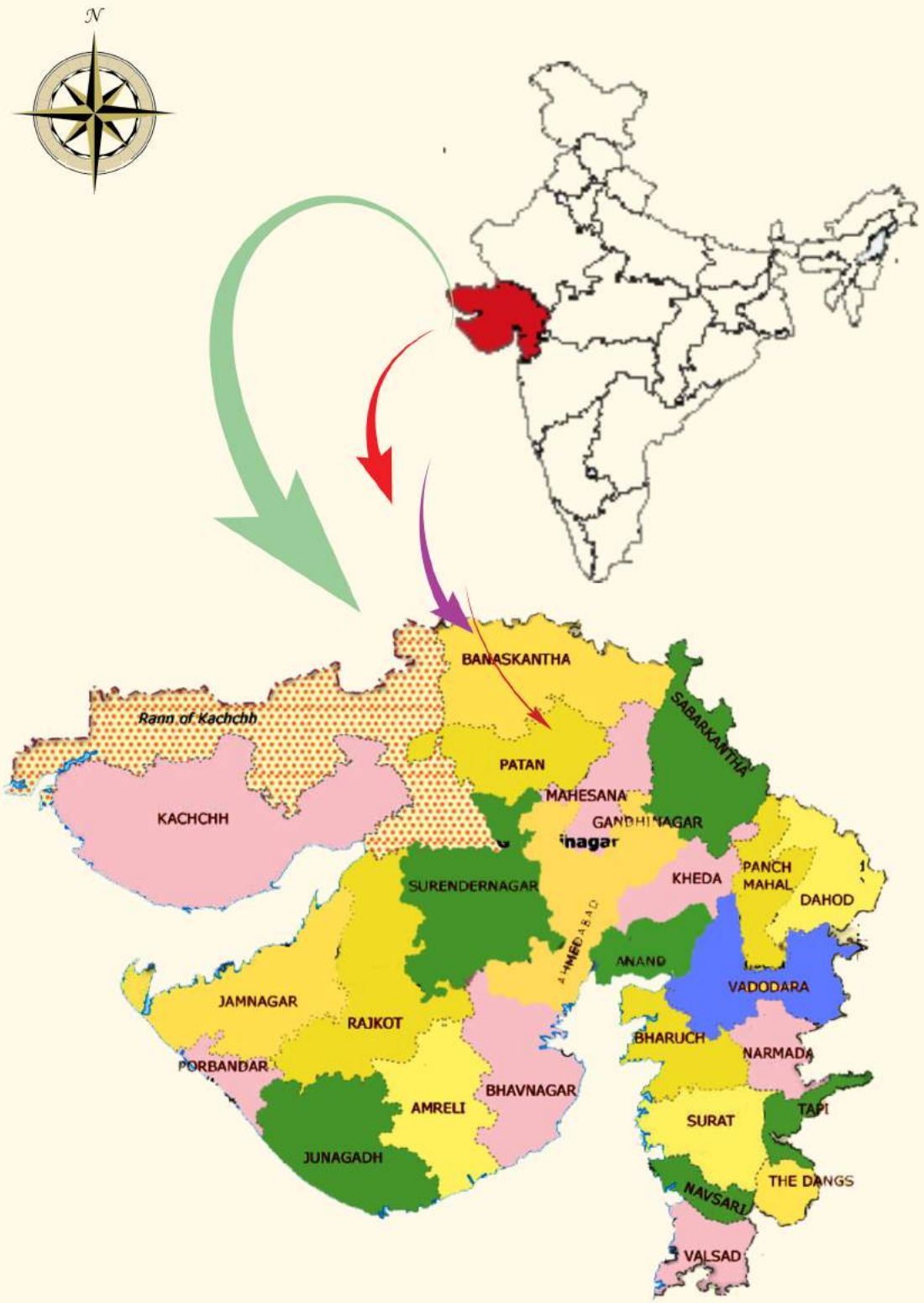
GUJARAT - PATAN



Rani-ki-Vav

(One of the UNESCO's World Heritage Site)