INTRODUCTION

1.1. Concept and Methodology

'Human development' and welfare are important and significant concepts in the overall economic development of any economy. Economic development or growth can be measured and identified in various ways. The most common criterion being the economic growth based on the increase in its gross domestic income/output (GDP). It is therefore, presumed that economic growth directly results in the overall development of a nation and its people. One of the earliest perceptions was that market forces which will lead to the spread of economic benefits equally or on an equitable basis to all including those at the bottom of the pyramid and thereby end poverty. This laissez faire approach faced intense criticism from many modern welfare economists. It has been established with data that mere increase in income or GDP will not ensure automatic distribution of the same to all in equitable manner and there has been hardly any direct correlation between increased GDP and enhanced standard of living of common man. Thus, it is a well established issue that human development is much more than economic advancement and it is also proven that mere economic prosperity of an economy need not necessarily reflect the actual well-being of its populace as it is something beyond these accomplishments. According to Mahabub Ul Huq (1995), income is only one of those options, which of course is the very important one. But, it is not the sum total of human life . There are a (few other choices like health, education, physical environment, freedom etc., are equally important). Because, income growth alone does not ensure even distribution within a society as people who have no, or lesser, access to income will have their choices constrained. 'Trickling down' of economic growth evenly being not ensured, is the fundamental reason why income expansion alone may fail to enlarge human options.

Understanding of development and human development is a conceptual change process that evolved over a period of time. Development, which was earlier likened to the economic growth process evolved in order to include social indicators. The Human Development approach was developed by a group of economists and thinkers led by Mahbub-ul-Haq and Amartya Sen, who worked on the UNDP Human Development Report. This approach considers the purpose of development as expanding people's choices so that people could lead life that they value and ultimately help in building human capabilities. According to Mahbub ul Haq, "The most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community." It also means providing, " 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 the community activities." Therefore, the concept of human development evolved as the focal point for the development of any nation.

The concept of 'Human Capital' revolves around the factors of production in augmenting production facilities through human skill and knowledge as well as efforts, whereas the theory of human capabilities focuses on the ability of human beings to lead their lives and they have reason to value with substantive choices. These two perspectives of the role of human beings are closely related but depend on the way one takes towards the process of development. The central message of the human development concept is that while growth in national production or income is absolutely necessary to meet all essential human objectives, what is important is to understand how this growth translates or fails to translate into human

development in society. Therefore, economic welfare with the concept of human welfare is to be the goal of an economy to prosper fully. The concept of human development is, thus, much broader than the conventional economic development as it goes beyond economic growth as an indicator of well being of the people. Many fast-growing countries discovered in late eighties that their high income growth (in terms of GNP) failed to reduce the socio-economic deprivation of substantial sections of their population. This led to the realization that development process was a much complex phenomenon than growth in domestic product alone and there was a need for a different approach to measure human welfare, which would take into account access to resources and services as well as deprivation of the basic facilities required for a comfortable living.

A formal methodology of measurement of human development in the form of indices for the first time was advocated by the UNDP in 1990 at the national levels. Since 1990 UNDP has been publishing Human Development Reports (HDR) with people centric themes. The purpose has been "To emphasize that the goals of development are choices and freedoms." Human Development Index (HDI) serves the purpose of broadening attention from GNP and other income related measures to two fundamental ingredients of freedom of living, namely the life expectancy and basic education. Each HDR focuses on a highly topical theme in the context of current development debate by providing path breaking analysis and policy recommendations. Over a period of time, four new composite indices for human development have been outlined and added in the reports viz. the Human Development Index, the Gender-related Development Index, the Gender Empowerment Measure, and the Human Poverty Index. The analysis also includes Multi-dimensional Poverty Index. All over the world, more than 600 regional, national and sub-national reports have been published so far in over 140 countries. This demonstrates the fact that the HDRs' have been acknowledged as a useful tool for policy formulation and planning.

Box 1.1. : Definition of Human Development

Human Development is defined as "a process of enlarging people's choices". The main values/ethics included in this concept and in any human development policy are :

- **Ensuring security of life and secure livelihoods for all;**
- **Equity in opportunities and capabilities;**
- **Equality between men and women;**
- **Distributive justice and sharing of national resource by all region/ethnic groups;**
- **Democratic governance and participatory development;**
- **Pursuit of sustainable development and conservation of nature;**
- **Human rights protection;**
- **Upholding human dignity and self- respect;**
- **Acceptance and accommodation of divergent cultures, ethnic minorities;**
- **Peace and non-violence.**

1.2 Factors Contributing to Human Development

The same methodology with some marginal changes has been adopted by most nations to measure the status of human development within their country. The UNDP publish these reports every year since 1990. The Government of India has released its first National Human Development Report (NHDR) in 2001. Efforts have been made since then to release such reports at the State and District levels reflecting the status of their districts/taluks. A Total of 27 State HDR's have already been prepared along with District HDR's. This has been undertaken to ensure a robust Human Development perspective at the micro-level.

The primary objective of DHDR is to mainstream human development perspective in the process of state planning by improving:

1. The statistical system

2. Financing of the HD initiatives and

3. Bringing Gender with a special focus.

The calculation of HDI would have three major options like long lasting and healthy life with access to knowledge and resources for a comfortable and decent life. There are other important factors determining the quality of human life like political freedom, community participation and physical security. These are not considered as less important but are difficult to measure appropriately. HDI is just a summary of measured picture of human development in any situation.

1.3 Human Development Reports in Karnataka

Karnataka has brought out two such reports in 1999 and 2005 at the State level.

The 1999 report provided a well-organised data covering a wide range of human development indicators. The 2005 HDR highlighted the relation between public investment patterns and human development outcomes. Further, Task Forces have been constituted to look into areas such as health and education. These Committees have submitted their reports to state government. Most of the reports have contributed in a significant way in highlighting the regional imbalances existing in the state.

1.3.1 District Human Development Reports

Karnataka State has successfully implemented the project of Strengthening State Plans for Human development (SSPHD) up to the end of 2009. As a part of the project, four districts (Vijayapura, Kalburgi, Mysuru and Udupi) were taken up for preparation of District Human Development Reports in the first phase on a pilot basis, These reports were released in the year 2010. In the second phase five more districts namely Bidar, Raichur, Davanagere, Chitradurga and Chamarajanagar were included. In the third phase eleven more districts were included for the preparation of District Human Development Reports. At this stage, the State Government decided to initiate the preparation of DHDRs for all the districts simultaneously.

The main objectives of undertaking District Human Development Reports (DHDRs) are:

1. To capture variations in the status of human development at the district level;

2. To enable Government to take a holistic view of the state's development outside the purview of normal functioning of the government;

3. To assess the strengths and weaknesses of the existing departmental policies.

In this background, the present human development report of Shivamogga district is not merely a status report, but emphasizes on development issues relating to human development which enhances the quality of life at the taluk level. The DHDR (District Human Development Report) may also provide the much needed data base to the District Planning Committee (DPC) of Shivamogga. It is likely to be of immense use in identifying human

development indicators in the process of grass root level planning. This report is not only aimed at finding positive synergies but also in identifying ways of strengthening existing environment for development.

1.3.2 Main features of the proposed DHDRs

In the present DHDR exercise, an attempt is made to estimate HDI both at the district and sub-district level using the same three dimensions but with certain changes in indicators reflecting the level of human development. Simultaneously, an effort is also made to arrive at a Gender Inequality Index (GII). To compute HDI, 11indicators are used covering the area of living standard, education and health. For the purpose of deriving HDI at the district and sub-district or taluk level, appropriate indicators are being used. HDI presents information on human development in three dimensions while GII provides information on gender differentials in achievements. The three basic dimensions of Human Development Index include health index, Education Index and Standard of living Index. The common methodology for the DHDR exercise has the following features;

- The proposed DHDR in every district will discuss uniform indicators with the same definition and sources.

- The DHDR provides methodology for calculating radar scale using proxy indicators on education, health and living standards reflecting the status of human development in two parts. The first part consists of sectoral achievements, while the second part includes taluk-wise position. In both the cases, the physical distance from the accepted norm is being measured.

- The guidelines provided in DHDR discuss methodologies for estimating HDI, GII, FSI, CDI, UDI and CTDI by using proxy (measurable) indicators. It measures the taluk-wise position in respect of each of these indices.

- Each DHDR will present all the indicators and indices at the taluk level in comparison to the district.

- Each DHDR will also bring out the specific issues of the district through appropriate case studies.

- The proposed DHDR will bring about uniformity in respect of presentation of tabulated data and contents of various chapters.

- The report analyses indices such as HDI, GII, FSI, CDI, UDI and CTDI as also the Composite Dalit Development Index (through a case study method)

The objective of all interventions is to bring about human development. A district human development report must address the issue of formulation of a strategy, which will accelerate the pace of human development. Therefore, the objective of the present exercise is to build a developmental path, which will guide human development in Shivamogga.

Box 1. 2 : Goals of Human Development

i. *Development must put people at the center of its concern.*
ii. *The purpose of development is to enlarge all human choices, not just income.*
iii. *It is concerned both with building up human capabilities and using the capabilities fully.*
iv. *Human development has four essential pillars – equality, sustainability, productivity and empowerment.*
v. *It defines the ends of development and analyses sensible options for achieving them.*
(UNDP, 2009)

The quality of data within a district is likely to be similar, but a comparison within the district provides a relative picture of progress and enables a comparison of blocks over conveniently defined indicators. But , there is need to build a strategy and formulate a framework, which is flexible enough to capture the specific needs of the district in terms of human development. Considering all these factors, the DHDR has been attempted which is, easy to understand, and enables to identify weak areas/sectors of the district.

The purpose of DHDR is to ultimately provide policy initiatives to planners. It is in this context, there is a need for DHDRs to come up with policy directives. The eventual purpose of the analysis is to arrive at an action plan which will help in bringing about corrective actions impacting human development. It is expected that such interventions will bring in to focus and attention of policies back to be people centric. This in turn will result in policy guidelines which will ensure expansion of human capabilities, widening of choices and enhancement of standard of living of all in the District. The final goal of DHDR is to measure the average achievement of the district and its taluks in the three basic dimensions of human development.

1.4 Methodology

There is an established methodology for Human Development Report (HDR) developed by UNDP, based on which international, national and regional/state HDRs are prepared. However, the methodology for District Human Development Report (DHDR) is at an evolving stage. It has certain constraints as the database for micro-level analysis is scanty. Considering the limitations on availability of sub-district level data, there are initiatives and efforts made by different States for DHDR by applying an alternative methodology. The initiatives in Kerala, West Bengal, and Karnataka deserve special mention as they have evolved appropriate methodologies. The DHDRs in these States have been prepared by choosing proxy variables to fill up data gaps by retaining (measurable) the overall framework of UNDP model. The methodology for DHDR in Shivamogga district is based on the clues drawn from the methodologies used in various DHDRs of different states and the guidelines issued by the Planning Department in this reagard.

The DHDR takes a closer look at Shivamogga district and it's seven Taluks. It analyses the level of attainment of development in the areas of education, gender, governance, standard of living, income, inequality as well as the status of socially deprived groups like Scheduled Castes and Tribes. All the available secondary data as well as the primary data collected during field research will be used to formulate DHDR of the district. The main limitation of the study is the non- availability of micro level data for every taluk. However, DHDR intends to identify areas in which efforts of development needs to improve. The present DHDR is the first holistic development report at a micro-level in Karnataka. It will be useful for policy formulation and development planning.

Human development is a process involving a number of factors. It is influenced by internal and external factors. The calculation of Human Development Index(HDI) and other sectoral indices for the district are based on these factors detailed below.

1.4.1 Health and Human Development

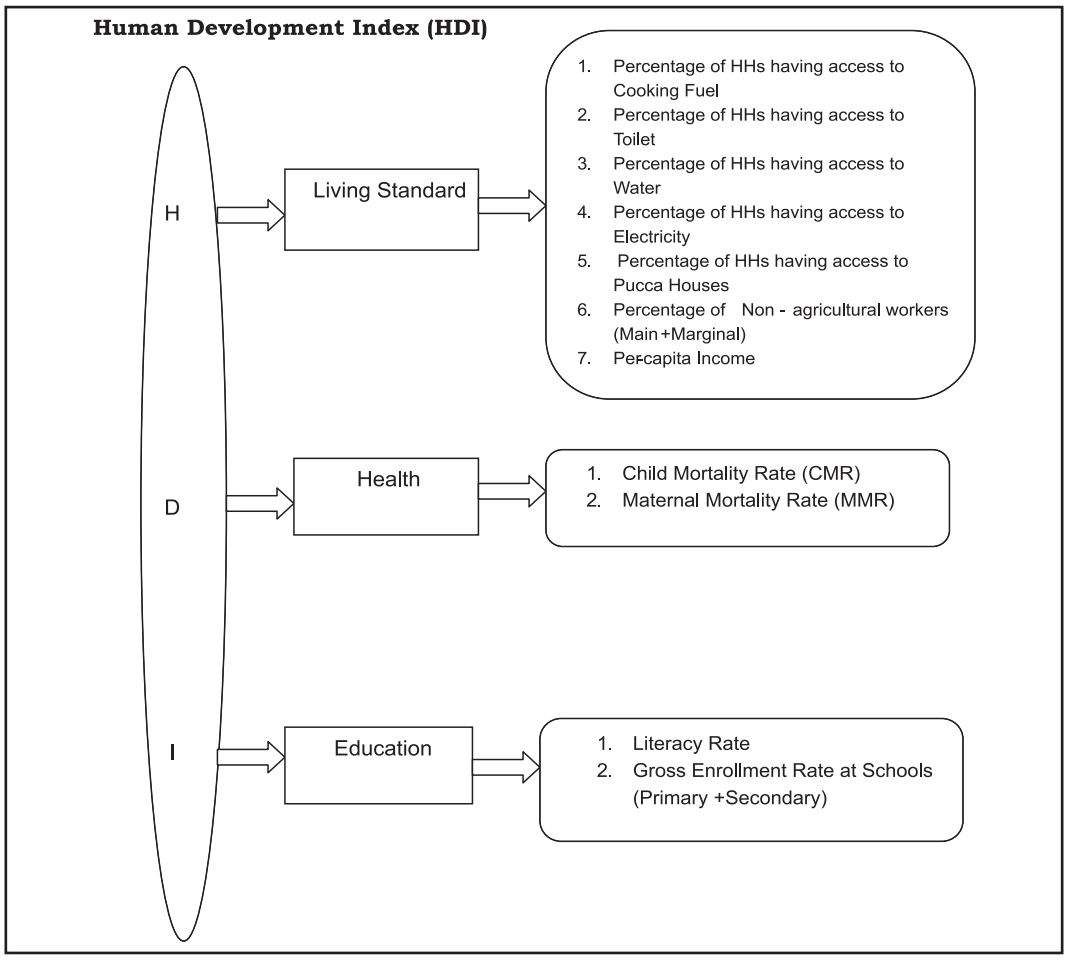
According to the WHO definition, “Health is a state of complete physical, mental and social

wellbeing and not merely absence of disease or infirmity". Broadly, life is understood as both 'wellbeing' and also being 'socially and economically productive'. Like the concepts of standard of living and levels of living, 'quality of life' is also important. Thus, the concept of health or quality of life is normally influenced by a number of factors like adequate food and water, housing, basic sanitation, healthy lifestyles, proper environment and freedom from communicable diseases. Human beings have a right to lead a healthy life, and thereby achieve positive human development. The state has a responsibility in ensuring the same. Health care is, thus, not only Medicare but an overall holistic health care, needed for ensuring a longer life to its people. Health characteristics include their appropriateness to human needs, availability, adequacy, accessibility, affordability, feasibility of schemes, etc., with operational efficiency and comprehensiveness of health services. Assessment of health status of an economy has to be from these angles while measuring quality of life. Health indicators selected in this analysis are done so with an intention of touching upon these factors of life.

1.4.2 Education and Human Development

Literacy is stated to be a basic factor responsible for capability- promoting, opportunity-enhancing and empowerment-manifesting social indicator. It is considered as a means to development as it is capable of expanding individual social opportunity and also generating human capability. Thus, economic development and human development are said to be accomplished together only when people are literate. Illiteracy, deprivation and poverty normally go together. Literacy is necessary for the fulfillment of human needs as it creates opportunities and offers choices, whereas poverty and illiteracy make people fatalistic and submissive, without providing them an opportunity to lead a dignified living. Ultimately, literacy empowers people and significantly enables them to participate in the process of development. The positive externalities of education are through creating awareness about socially destructive factors like IMR, MMR, CMR and other existing social evils in the society. Education, thus, is not only for the sake of 'something in life', but literacy and education have multiple roles in development. The indicators selected for education, thus, have to reflect factors, such as, literacy level, particularly, female literacy rate, size of 0-6 years' old child population and their enrolment, dropout rate, transition rate, Parent Teacher Ratio, SSLC and PUC pass percentage, school completion rate, school infrastructure and expenditure on education.

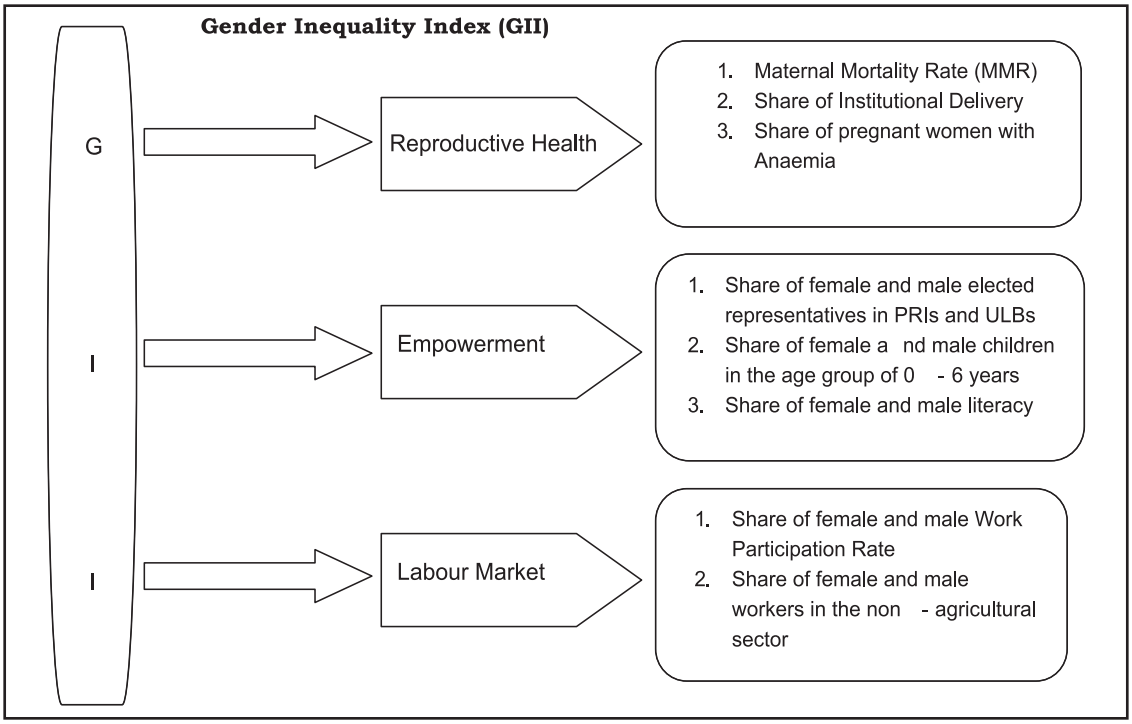
Quality of life of people is measured by the basic indicators like food, clothing and shelter, in addition to clean environment and safe drinking water. Human development indicators for livelihood are: purchasing power determined by the employment or earning to enable the health services for long life expectancy and education for obtaining better opportunities in life. The other important basic need, other than food and clothing, is shelter, which perhaps determines the economic and physical quality of living. Shelter includes access to water supply, basic sanitation, housing, education and basic health facilities. Human development indicators have to consider these as basic needs, review their extent of availability and other qualitative aspects to arrive at the right indices for HDI.



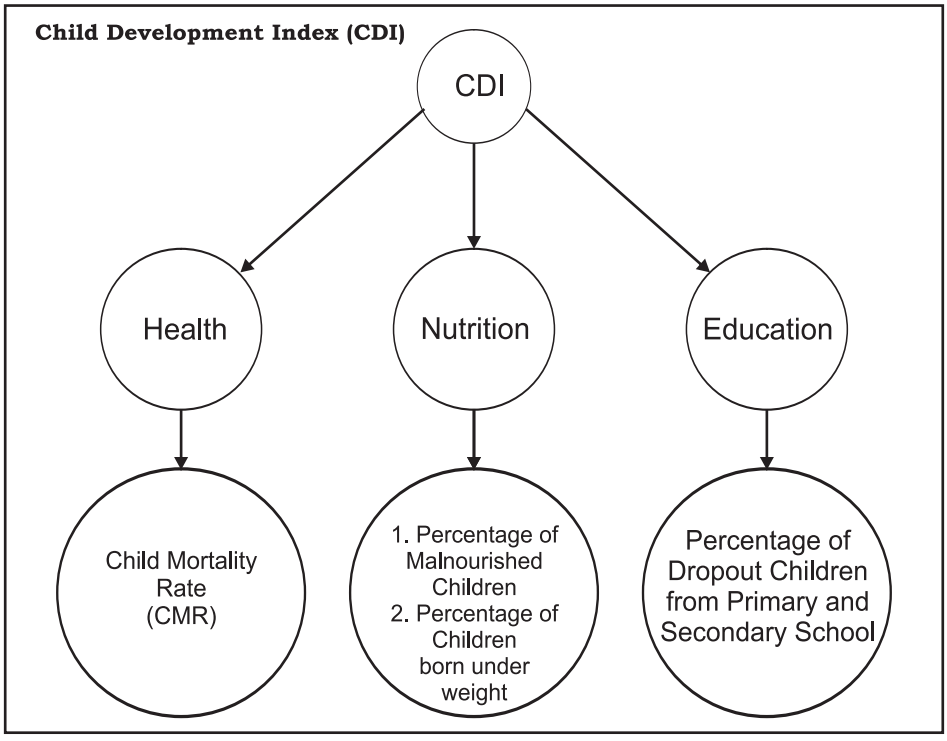
1.4.3 Gender and Human Development

Persistence of gender inequalities between individuals, groups and communities on the basis of their gender identity is a subject of major concern in human development. The identification of areas of gender differences among all sections of society through indicators applicable for males and females across various sectors is important. Benefits of human development have to be shared equally between both men and women. There should be equal access to resources, services and opportunities that are generated from development. A life with dignity, security and well being of citizens could be ensured only when the development process is equitably shared by men and women including those from the socially excluded classes of society. Gender sensitivity has to be improved at the programme implementation level. It is also essential to have reliable data to understand the extent of gender inequality across various dimensions of human development. Based on these factors, the indicators in assessment of Gender Inequality Index (GII) are finalized and findings are included in the Report.

The GII will be based on three dimensions such as reproductive health (with indicators like MMR, share of institutional delivery and share of pregnant women with Anemia);women's empowerment with indicators based on the share of female and male elected representatives in PRIs and ULBs; share of female and male children in 0-6 years of age group; share of female and male literacy and labour market based on share of female and male work participation rates; and share of female and male workers in the non-agricultural sector. The average of the three dimensions will reflect the GII.

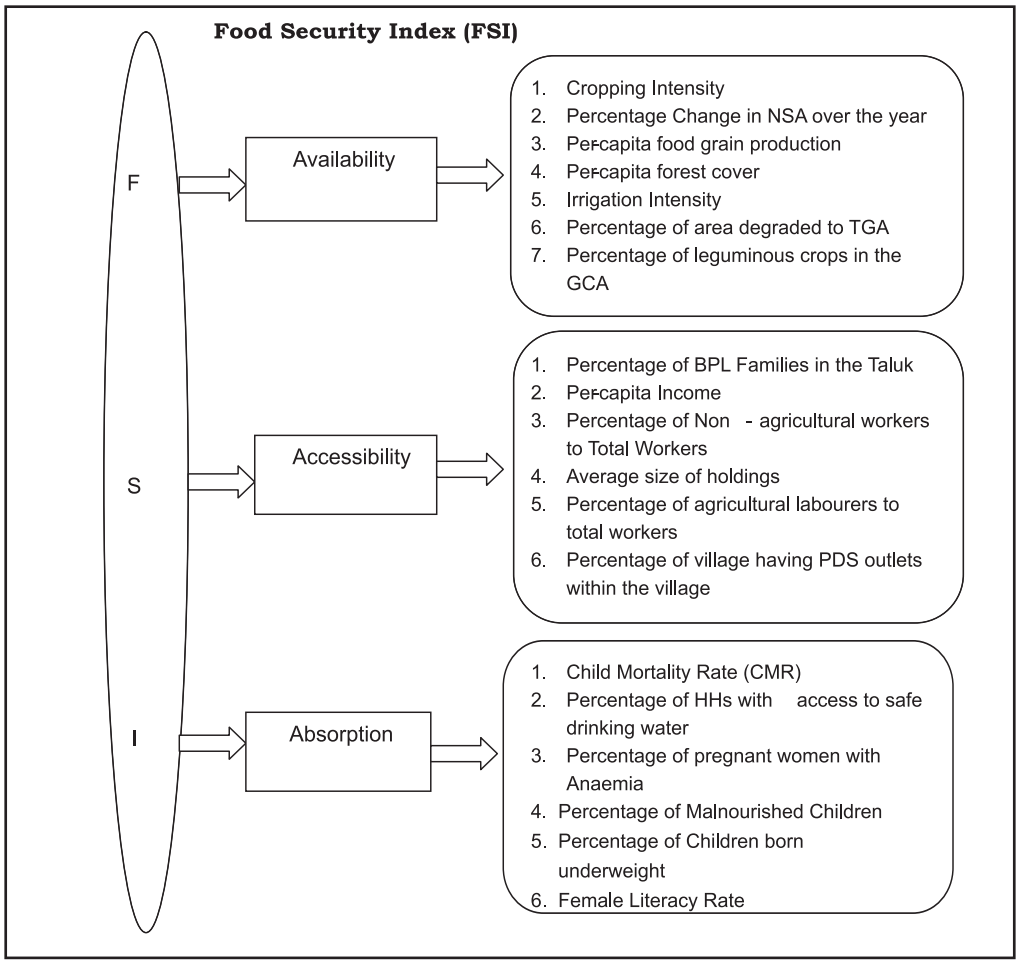


The Child Development Index (CDI) will be having three dimensions of health, nutrition and education - each reflected by CMR, percentage of malnourished children and percentage of dropout children mainstreamed.



The Food Security Index (FSI) will be having three main dimensions and 18 indicators such as availability, accessibility and absorption. The availability dimension includes indicators like cropping intensity, percentage change in net sown area, per capita food grain production, percentage of forest coverage to total geographical area, irrigation intensity, percentage of cultivable area under degradation (cultivable waste), and percentage of leguminous crops in the total cropped area. The accessibility dimension includes percentage of coverage of BPL families through ration cards to total ration cards issued, per capita income,

percentage of non-agricultural workers to total workers, average size of land holding, percentage of agricultural labour to total workers and percentage of villages having PDS outlets within the village. The Absorption Dimension includes CMR, percentage of households with access to safe drinking water, pregnant women with anemia, malnourished children and female literacy rate. The average of the three dimensions will reflect the overall FSI.



The Composite Taluk Development Index (CTDI) is a similar exercise of calculating the general development from all angles with 68 indicators, on different sectors including all the above, categorized into three dimensions, as in HDI, for district as well as taluks:

A. Living Standard / Livelihood

i. Demography
ii. Livelihood and Employment
iii. Housing and Assets
iv. Participation

B. Health

i. Health
ii. Sanitation
iii. Drinking Water

C. Education

The Composite Dalit Development Index (CDDI) is to understand the status of dalits with the help of a small area study in one of the villages. The study has been completed using secondary and primary data as a case study in Jade Gram Panchayath in Soraba taluk. Following are the areas of coverage in the special study:

- Social Inclusion
- Perception of Discrimination
- Freedom
- Increased Standard of Living

- Gender Equality and Access to Resources and
- Access to Basic Facilities

The Urban Development Index (UDI) is a special section for analyzing human development covering urban issues in the district, including all the ULBs. This is being done through analyzing 11 indicators. These aspects are studied and analysed in terms of their respective minimum standards that are to be reached by the ULBs in achieving expected development. Based on their performance, each ULB is ranked through calculation of an average index. The indicators are as stated below:

1. Percentage of Urban population to total population of the taluk
2. Percentage of Households without own houses
3. Percentage of slum population to total ULB population
4. Water supply – percentage of Households with tap water connection
5. Sewage/ Drainage – percentage of households with sewage and drainage facility(both close and open)
6. No. of hospital beds per 1000 population in the urban areas
7. Percentage of own resource mobilization to total receipts
8. Per capita expenditure on development works
9. Length of roads in kms. per sq. km. of geographical area of ULB
10. Crime rate per 10,000 population and
11. Road accidents per 10,000 population

The indicators, thus, have been finalized from the view point of assessment of quality of life in the district as well as at the sub-district level keeping the same three basic dimensions of human development. The indices have been calculated with the given minimum and maximum values for each of the indicators to enable the intra-district comparison with regard to each of these dimensions and finally the HDI. The methodology and calculations are detailed in Chapter- 3 of the Report.

Small Area Studies

As part of small area studies, we examined four specific issues to understand field level problems and also to document the same. Following are the four case studies conducted in the district.

1. Behaviour and Practices on Sanitation
2. The missing links in Reaching Out to the Drop-outs: A study of School Drop-outs in Sulebailur in Shivamogga Taluk
3. Slums and Human Development
4. Assessment of the Impact of Involvement of Women in Agri Business

The intention is to have the understanding of the adverse impact of such issues on human development and for taking appropriate policy decisions.

1.5 Data Collection, Compilation and Validation

The methodology used in compiling the data and development of report has been in accordance with the requirements, as indicated in the Guideline Document, viz., Preparation of District Human Development Report, 2013,

Human Development Division, Planning, Programme Monitoring and Statistics Department, Government of Karnataka. The data are from secondary sources either at the district or departmental level at the State headquarters including Census data, 2011.

The Small Area Studies were conducted by collecting field level data and through participatory methods like focus group discussions.

1.6 Measurement of Indices

Presentation of base line statistics and stock taking reports are in the form of tables.

For better clarity and description, data presentation through Radars for displaying information is also adopted. These are pictorial depictions of the performance of a comparable unit in respect of the various sectors such as health, education, poverty alleviation, drinking water, housing etc., based on deviation /distance of indicators from the accepted norms applicable for these indicators. To have a broad based approach while analyzing HDI, the Radar method is used as it provides the actual status of a taluk in relation to norms. This also enables one to have a picture of inter-taluk and intra-taluk comparisons. It also provides a comparative status of development over the past decade. This type of analysis can also be a report card of the taluks in the district.

Similarly, for issues of gender inequality index (GII), Child Development Index (CDI), Food Security Index (FSI) and Composit Dalit Development Index (CDDI) separate indices are developed, as indicated in the Guidelines document for DHDRs. A comprehensive and composite taluk level development index has been developed using 68 indicators and 11 for HDI. Against each of the above suggested indicators for assessment of human development, the lead agency has consulted data sources available both at the district and state levels, apart from all other relevant published sources. Besides this, workshops were conducted at the district and the taluk levels, to create awareness about the importance of promoting human development based policies and programmes and these were attended by the officials and elected members of the PRIs, ULBs, representatives from various NGOs, general public, and local leaders [for details see Annexure-1].

1.7 Concluding remarks

The DHDR is basically a tool to understand the status of development in terms of opportunities and services provided and improvement in the quality of life of people. It attempts to provide a micro-level analysis of human development. The taluk and district level indices will enable in examining the level of human development attained. This kind of analysis provides basis for policy formulation and planning so that choices for people to enlarge and empower them for healthy and creative lives.



Fig.1.1: Shivappanaika Palace



Fig. 1.2 : Kudli Temple at Shivamogga Taluk



Fig. 2.1: Map of Shivamogga District

DISTRICT OVERVIEW

2.1 Introduction

Shivamogga is one of the 30 Districts of Karnataka State. It is situated roughly in the mid- south-western part of the state. It ranks 9th in size among all the districts of the State. The district headquarter is 274 Km.s away from the capital of the state, Bengaluru. Shivamogga has seven administrative blocks, namely Bhadravathi, Hosanagara, Sagar, Shikaripura, Soraba, Shivamogga and Thirthahalli. There is some disparity in the development of these blocks. Research shows that Bhadravathi, Hosanagara and Sagar fare better in terms of development than Thirtahalli, Shikaripura and Soraba.

Shivamogga boasts of an eventful history and has rich cultural tradition. It is bestowed with abundant natural resources. The western area of the district consists of fascinating natural beauty, being clothed with dense tropical forests stimulated by heavy rainfall. The eastern area consists of an open country with some fine lakes and stony hills. The Sahyadri ranges are a part of the Western Ghats which feed rivers round the year. The Sharavathi Hydel Project and Varahi Project situated in the district provide a substantial portion to the state's power needs. Shivamogga is also called the rice bowl of the State.

2.2 Background and Brief Regional History

2.2.1 Origin of name

Like most of the districts in the state, this district also gets its name from its district headquarters town- Shivamogga. There are various traditional derivations about the origin of the name “Shivamogga”. 'Shiva-mukha' (the face of Shiva), 'Shivana moogu' (nose of Shiva) and 'Shivana-mogge' (buds of flowers meant for Shiva) are popularly accepted as the root of the word Shivamogga. There are several shrines in the district that are dedicated to Shiva which perpetuates the belief. The name is written and pronounced in kannada as Shivamogge and its anglicised form is 'Shivamogga'.

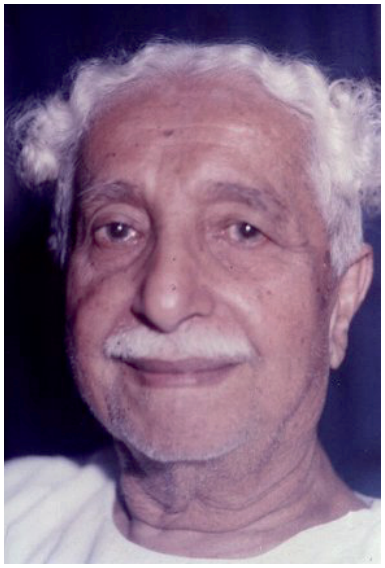


Fig 2.2 Kuvempu‘s Photo



Fig. 2.3: Kuvempu's House in Kupplali

2.2.2 Shivamogga's part in Freedom Movement

In 1930-31, a successful satyagraha was offered by women at Hechche in Sorab taluk of the district for recovery of properties of satyagrahis, purchased at government auctions in a neighboring taluk of North Kanara. Poet Kuvempu (Dr. K.V. Puttappa) from this district and several others wrote powerful patriotic lyrics voicing the freedom urge of the people. In August 1927, Gandhiji along with C. Rajagopalachari and Gangadharrao Deshpande visited Shivamogga, Bhadravti, Thirthahalli and Sagar taluks of Shivamogga district, in order to give a fillip to nationalist movement and constructive programme.

From 17th August 1942 onwards, a display of great courage and defiance was showed by people of Isoor village of Shikaripur taluk. Everyday processions were carried out round the village with slogans like 'Do not pay taxes', 'Cut down teak trees and wires', 'Burn the account books of gaudas and shanbhogues'. On 25th September when the village officer came for collection of assessment and preparation of pahani, their registers were seized by the village youths. The next day the villagers put up a sign board which declared that theirs was a free-village. A 'parallel Government' of youngsters was setup.

The post-independent era witnessed the re-organisation of states. Shivamogga was one of the districts in the old Mysore state. The name and jurisdiction of the district remained unaltered in old Mysore and Karnataka State. It was in the year1997 the district gave away its two taluks to the newly constituted neighbouring Davanagere district.

2.3 Physiographic Divisions of the District

The Greater part of the district lies in Malnad area. The eastern portion lies in the maidan region (an open level land). While the Thirthahalli, Hosanagara, Sagara and Sorba taluks come under malnad area, the taluks of Shikaripur, Shivamogga and Bhadravati form a semi-malnad and maidan area. The western portion with its tropical forests and mountain wilds present superbly enchanting natural scenes. There are three ghats, namely, the Agumbe ghat in Thirthahalli taluk, the Hulikal ghat and Kollur ghats in Hosanagar taluk.

The district slopes from west to east. The general elevation along the watershed is about 640 meters above the sea-level in the west, falling about 529 meters in the east. The western part of the district rests upon the Western ghats, called the Sahyadri. The interior part of the district is crossed by a chain of hills running from Mandagadde on the Tunga northwards between Anandapuram and Kumsi, and by a range from Alhawadi (Sagar taluk) westwards through Ikkeri to Talaguppa. On the east of the district, there are two lines of low and stony hills stretching to the south of the district. In Shikaripur taluk, there are lines of low hills on all sides where the malnad and the maidan areas meet.

2.3.1 Location

The district is situated between 13° 27' and 14° 39' North latitude and between 74° 37'and 75° 52' East longitude, in about the mid-south-western part of the state. Its greatest length from east to west is 152.9 km and from north to south in 128.8 km. It is bounded on the east by Davanagere district, on the south by the Chikmangalur district, on the west by Uttar Kannada and Udupi districts and on the north by Haveri District.

2.3.2 Administrative Units

The district is divided into two divisions and 7 seven taluks. The Sagar Sub-division covers the Sagara, Soraba, Shikaripura and Hosanagara taluks whereas the Shivamogga Sub-division covers Shivamogga, Bhadravathi and Thirthahalli taluks. The Deputy Commissioner is responsible for managing the district administration while the Assistant Commissioners are responsible for managing the sub-divisions of the district.

The Sagar taluk has the largest area while Bhadravathi is the smallest taluk. The seven

taluks of the district have been further sub-divided into 40 hoblies (revenue circles), each of which in turn consist of about 30 to 50 villages. Apart from this, the district has one Municipal Corporation, two City Municipal Councils, one Town Municipal Council, four Town Panchayats and one Notified Area Committee (NACs). For details see Table-2.2

Table No.2.1 : Details about Shivamogga District (No.)

Sl. No.	Taluks	Hoblies	Gram Panchayats	Inhabited villages	Un-Inhabited villages	Area in Sq. Km
1	Bhadravathi	6	39	138	7	690
2	Hosanagara	4	29	201	3	1423
3	Sagara	6	35	230	8	1940
4	Shikaripura	5	43	155	21	909
5	Shivamogga	8	37	195	19	1113
6	Soraba	6	39	279	27	1148
7	Thirthahalli	5	38	245	2	1254
	Total	**40**	**260**	**1443**	**87**	**8477**

Source: District At a Glance, 2012

2.4 Land, Soil and Natural Resource Endowments

2.4.1 Geology

Geologically, Shivamogga District consists of the most ancient rock formation of Archaean complex, which are composed chiefly of two systems, the Dharwar system (usually called Dharwar schists) and the gneissie system. Nearly two-thirds area of the district is covered by the Dharwar schists. The Shivamogga band forms a prominent belt from west to east and occupies a large area. This belt is made up of various types of schists, chiefly chlorates and in some places micaceous or hornblendic associated with volcanic rocks of different types. Along with them are found some highly altered sedimentary rocks such as quartzite, conglomerates, limestone, shales and banded iron stones (ferruginous quartzite).

The Shivamogga schist belt is split up into several small bands by intrusion of the granites and gneisses and they are:-

1. The schists of the Western Ghats extending in the neighbourhood of Agumbe;

2. The long band extending from Nagar through Tirthahalli southwards to Koppa and continuing northwards upto Honagere;

3. Shankaragudda schist belt which forms a north-south strip;and

4. The schist belt around Aramballi which extends south and east.

2.4.2 Granite Gneisses

The Gneissic system is much younger than the Dharwar system and it chiefly consists of granites and granitic gneisses. The granitic rocks vary in their structure, texture, color and other characteristics. The main granites in Shivamogga district include “Saulanga Granite”, and “Shivamogga Granite”. Literite is another geological formation which occurs in patches in the western parts of the district. Some of the laterites contain ferruginous and manganese patches.

The major soil forms found in Shivamogga district are red gravelly clay soil, red clay soil, lateritic gravelly clay soil, lateritic clay soil, medium deep black soil, non-saline, saline alluvo-colluvial soil and brown forest soil.

2.4.3 Mines and Minerals

The mining activity has been known to have flourished in the district in the past. It is one of the important districts known for mining even to-day. There are several places in the district having the relics of ancient iron industry which prove that the people of the district were familiar with mining. The iron ore deposits (Haematite and Limonite) are found in the Dharwar schist belt. There are fairly extensive deposits of low to medium grade manganese ore in the district. Limestone varying in composition from high calcium to dolomitic siliceous, argillite and other types occur as bands for a long distance in Dharwar schist. In addition to these main minerals, there are other minerals available in the district such as, Quartz, Titanium, Chromite, Garnets, etc.

Fig.2.4: Geological and Mineral Map of Shivamogga District



Source: Shivamogga District Disaster Management Plan, 2011

2.4.4 Flora and Fauna

The district has rich and varied flora. The major contributing factors for this are good rainfall and the topography of the district. In the Western ghat region, rainfall is heavy. Agumbe gets the highest average rainfall. There is a rapid transition from evergreen flora to the scrub type, i.e. from mesophytic to xerophytic, as one moves from west to east. The magnificent evergreen flora covers a narrow belt in the Western Ghats and it gradually merges into the moist deciduous towards the east and south. The far-eastern and northern portions are scrubby and comparatively little-wooded.

The fauna of Shivamogga district is rich and varied on account of tropical, evergreen, moist, deciduous and dry forests. The wild life in the high forested area of Shivamogga and Sagar taluk includes elephants, bison, antelopes, wild pigs, black monkeys, jungle cats, bears, red squirrels etc. A good number of species of birds are found in the woods of Shivamogga district. Among the important species are the parrot, vulture, kite, green pigeon, wood-pecker, partridge, kingfishers etc. There are teals, ducks, and wild geese found near the tanks of Shivamogga taluk. The district is also noted for game birds such as tree pie, jungle crow, gray tit, yellow-cheeked tit, parrots, peacocks, herons and storks. The reptiles like crocodiles are found in the Tunga and Bhadra rivers. Among the other species are the tortoise, chameleon and python found in the high forested areas. The snakes are found in large numbers in Malnad region. The green snake, krait, cobra, and viper are found in all parts of the district.

2.4.5 Forests

The forests of the district yield rich and valuable products. They include unlimited fauna and flora covering an area of 2, 76,855 hectares. According to an estimate by the Indian Institute of Science, there are five types of forests in Shivamogga district. They include the Southern tropical wet evergreen forests, Southern tropical semi-evergreen forests, Southern tropical moist deciduous forests, Southern tropical dry deciduous forests and Southern tropical Scrub forests. The areas of different types of Forests are as follows: Evergreen forests- 69459 hectares (16%), Semi-evergreen-88135 hectares (20.28%), Moist deciduous-130612 hectares (30.06%), Dry deciduous - 109539 hectares (25.21%) and Scrub Forests-24111 hectares (5.55%). The district comprises of three forest divisions, namely Shivamogga, Bhadravathi and Sagar. The forests of the district cover an area of 4, 34,516 hectares nearly 40.27 per cent of the land in the district. The Kan forest is evergreen forest preserved through the generations by village communities of Malnad region as sacred forests or sacred groves which are characteristic of Shivamogga district. During field investigation, it was observed that these ecological sensitive habitats are being destroyed and encroached at Halmahishi and Kullundi villages. The evergreen forests yield timber which is used for electric transmission poles and railway sleepers. The felled areas are being tended for getting the natural regeneration of valuable species. The deciduous forests supply timber, firewood, charcoal, bamboos, matchwood and plywood. The plantations of teak, silver oak and other valuable species are raised in the clear-felled areas for improving the potential of the forests and for meeting the demand for certain species. The Dry deciduous forests are useful for firewood and charcoal. There are also suitable areas in the district which are afforested with eucalyptus and other forest growing species under various schemes. The Dry scrub forests are afforested as a measure for soil conservation under relief works such as drought relief, famine relief and rural employment programme.

2.4.6 Rivers

The most important rivers that flow through Shivamogga district are the Tunga, Bhadra, Tungabhadra, Sharavati, Kumudvati and Varada. The Tunga and Bhadra unite to form Tungabhadra at Kudali which is 14kms from Shivamogga city. The Kumuddvati and the Varada are important tributaries of the Tungabhadra. Every river in the district has its own mythological background.

2.5 Demography

2.5.1 Population

Although the growth of the district is 6.71 percent, there has been a declining trend during the past few decades. The child population of the district is 35,279 as per 2011 census. The composition is 10.38 percent of the total population. Earlier, the child population was 40,758 in 2001 which was12.01 percent of the total population. This was higher in absolute numbers and in its proportion.

The initial provisional data released by 2011 census indicates that density of the population of Shivamogga is 207 persons per sq. km. This has increased from 194 persons per sq.km.in 2001.The district's urban population was 6,23,727, a population that had grown over ten years by 9.23% (compared to the rural population growth of 5.37%). The population structure on the basis of region in Shivamogga is in the ratio of 1.81:1. This implies that there is one person living in urban area for every two people living in rural area. This makes Shivamogga district to be predominantly rural in nature.

Bhadravathi and Shivamogga are the only towns having urban population of above one lakh (called the Class I towns). Shivamogga has a high growth of 17.6 percent while Bhadravathi has a negative growth rate of 5.95 percent. Thus, Bhadravathi could be termed as a "dying town". Further, the scheduled caste and scheduled tribe population of Shivamogga district is 17.58 percent and 3.73 percent respectively. The sex ratio in Shivamogga is skewed in favour of women with 998 women for every 1000 men. This has improved since 2001 where there were 978 women for every 1000 men.

Table No.2.2 : Sex-Composition of Population (No.)

Actual Population	1,752,753 (2011)	1,642,545 (2001)
Male	877,415	830,559
Female	875,338	811,986

Source: Census of India, 2001 & 2011

2.5.2 Density

The district has an overall population density of 207 persons per square kilometre. Bhadravathi and Shivamogga have higher density than the other taluks. Their density is 493 persons per sq. km. and 456 persons per sq. km respectively. (See Table-2.3 for details) It is interesting to observe that the density of population is higher in industrialised taluks rather than being a phenomenon of the district.

Table No.2.3 : Density of population-Taluk-wise - 2011 (No.)

Sl. No.	Taluks	Area (Sq.km)	Population	Population density
1	Bhadravathi	690	339846	493
2	Hosanagara	1423	118220	83
3	Sagara	1940	206319	106
4	Shikaripura	909	238229	262
5	Shivamogga	1113	507324	456
6	Soraba	1148	200809	175
7	Thirthahalli	1254	142006	113
	District	8477	1752753	207

Source: Census of India, 2011.

2.5.3 Sex Ratio

The sex ratio is indicative of the sex-composition of population. It is defined as number of females per thousand males. The overall sex ratio of the district is on an increasing trend over the last few years. The sex ratio has increased from 964 to 978 from 1991 to 2011. However, there is a sign of change in the sex ratio during the last decade from 978 to 998. This could be considered as a positive attribute.

Table No.2.4 : Taluk-wise sex ratio - 2011 (No.)

Sl.No.	Taluk	Sex Ratio	Child Sex Ratio
1	Bhadravathi	1001	952
2	Hosanagara	1021	973
3	Sagara	1017	966
4	Shikaripura	977	966
5	Shivamogga	987	955
6	Soraba	986	968
7	Thirthahalli	1032	944
	District	998	960

Source: District At a Glance, 2011.

2.5.4 Child Sex Ratio

Child sex-ratio in the age group of 0–6 years is also an important indicator of the composition of population. In 2001, child sex-ratio was 965 females per 1,000 males. Even Kerala, which had an overall sex-ratio above 1,000, suffered from lesser female in the age bracket 0–6 years. The adverse sex-ratio in the age group 0–6 years reflects the pervasive discrimination against girls and the high incidence of female foeticides. While it is seen that the sex ratio has been improving slowly; the child sex ratio is noted to have declined in the district. It is found that Bhadravathi, Shivamogga, Thirthahalli have sex ratios lower than the district average, though these taluks have experienced a marginal improvement in 2011 censes.

2.6 Literacy

The total literate in Shivamogga District in the year 2011 were 12, 63,016 of which 6, 74,938 were male and 5, 88, 078 were female. In 2001, the District had 10, 68,934 total literates. Shivamogga ranks sixth as far as the literacy in the state is concerned. The literacy rate of the district is 80.45 percent which has increased from 75.86 percent in 2001.

Table No.2.5: Details of Literacy - 2011 (No. & %)

Sl.No.	Taluk	Literate population	Total Population (7 & above)	Literacy Rate
1	Bhadravathi	242218	304567	79.53
2	Hosanagara	85092	106538	79.87
3	Sagara	150630	185935	81.01
4	Shikaripura	159348	210298	75.77
5	Shivamogga	377468	454343	83.08
6	Soraba	140170	178185	8.67
7	Thirthahalli	108090	130136	83.06
	Total	1263016	1570002	80.45

Source: District At a Glance, 2011

The taluk-wise comparison indicates that all the taluks have a literacy rate of more 75 percent with marginal variations. However, the need for further improvement cannot be ruled out.

2.7 Industry

Shivamogga is said to be industrially well-developed with a number of large scale and small scale industries. Industrial estates as well as self-employed artisans of the district have flourished in terms of trade and industry. Food and beverages sector is the leading industrial sector in terms of investment and income generation. There is great scope for investing into food processing and storage sector. The foundry units in the district have been very successful in producing quality products. They have been manufacturing components for automobile sector, electric motors, etc. There are three hydro-electric power units in Shivamogga with a capacity of 1469 MW. The hydro- electric power projects in Shivamogga district contribute to about 30 percent of the power generated in Karnataka state. There are other industries like Iron and steel, Paper Mill, Sugar Mill, Soaps and detergents, Dairy Units and Automobile based Units. The IT and BT units too have good opportunities.

Table No.2.6: Details about Industries - 2011 (No.)

No of Industrial estates	4
No of factories	227
No of SSI units	14,176
No of Large Scale units	12
No of workers in industry	55,531
Self employed artisans	13,126

Source: District At a Glance, 2011

Over 887 Small Scale Industrial units were set up in Shivamogga during 2011-12 (DAG, pg.107) generating employment for over 4,007 people. The number of enterprises engaged in trade, hotels and transport activities is also high at 12,431 units in the district. Most industries function in Shivamogga and Bhadravathi which employ 19,732 and 10,201 people. This, in comparison to Taluks such as Shikaripur or Tirthahalli which cumulatively employ 4,635 and 5,247 people shows the vast disparity in the development of industries in Shivamogga. The opportunities of employment in different industries are primarily the male workers. The district total of factory workers is 17,706 men as compared to 1415 women (DAG 2012, pg.106)

2.7.1 Income structure

The net domestic income for the year 2004 was Rs. 24,641 and for 2008-09 was Rs. 40,605. There is an increase of over 64.79 percent during the period under review. While the district has shown good growth, three taluks namely Thirthahalli, Shikaripuara and Shivamogga have performed below the district average (see Table 2.7).

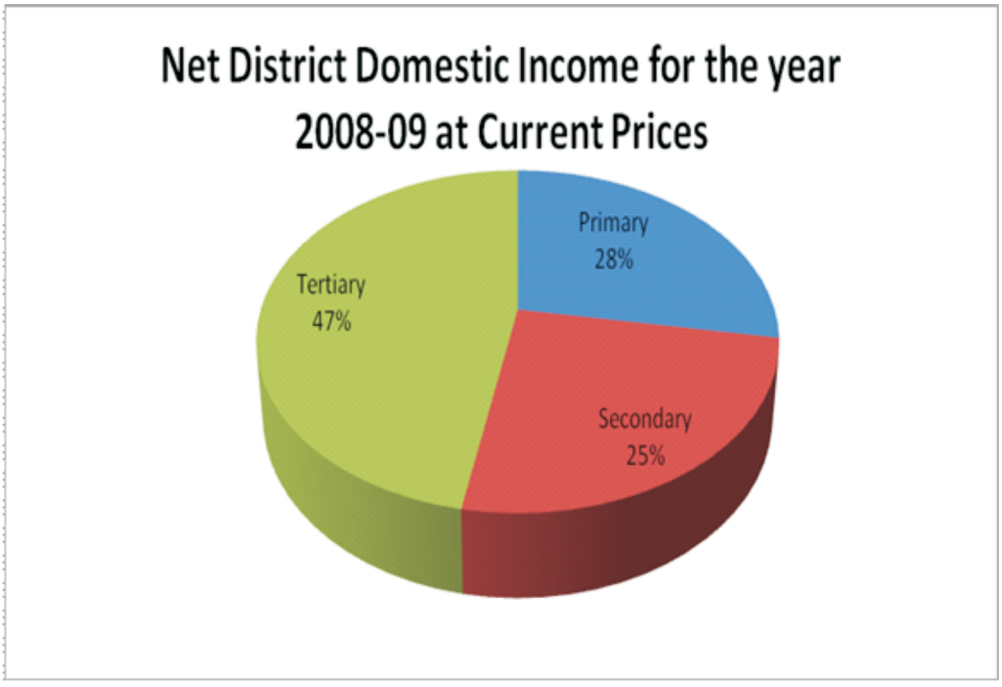
Table No.2.7: Taluk-wise Growth rate - 2004 & 2008 (No. & %)

Sl. No.	Taluk	Per capita Income (in Rs.)		Growth Rate
		2004	2008	
1	Bhadravathi	26840	50474	88.06
2	Hosanagara	29743	56475	89.88
3	Sagara	24293	43002	77.02
4	Shikaripura	19535	29961	53.37
5	Shivamogga	26287	36530	38.96
6	Soraba	20188	40810	102.15
7	Thirthahalli	24099	29417	22.07
	District	24641	40605	64.79

Source: Directorate of Economics and Statistics, 2004 & 2008

While looking at the incomes in each sector, Primary, Secondary and Tertiary, it can be observed that primary sector contributes to 28 percent of the total income, secondary sector contributes the least of 25 percent and the highest contribution comes from the tertiary sector with a share of 47 percent.

Fig.2.5: Net District Domestic Income for the year 2008-09 at Current Prices



On the contrary, when the proportion of workers is examined, it is observed that the share of workers in the agriculture sector is 57.77 percent and the sum total of the secondary and tertiary (non-agriculture) is 42.23 percent. This indicates imbalance in the ratio of workers and their contribution towards the total income.

2.8 Irrigation

Shivamogga is an agro-based economy. Agriculture is the main occupation of the people in the district. About 68 percent of the area is under agricultural crops, having irrigation facility for over 55 percent of the area. It is classified under the agro-climate zone. The major crops cultivated in the district are Paddy and Maize. The Sugarcane and Cotton are major commercial crops. The area under pulses is scanty. Groundnut and Sunflower are major oilseed. The area of irrigated land against sources (hectares under cultivation) as per 2012 is given in table 2.9.

Table No.2.8: Gross and Net Irrigated Area by Different Sources (No.)

Source	Gross Irrigated Area [in Ha.]	Net Irrigated Area [in Ha.]
Canals	57450	45240
Tanks	56738	53621
Wells	6082	4932

Source: Directorate of Economics and Statistics, 2010.

Further, it is to be noted that taluk-wise distribution of gross and net irrigated land provides an analysis of the variations within the district. In absolute terms, four taluks, namely Bhadravathi, Shikaripura, Shivamogga and Soraba have a major share of the total land irrigated in the district. However, the industrialised taluks of Bhadravathi and Shivamogga have maintained a significant ratio of irrigated land within the district. This is an encouraging trend as the process of industrialisation in these taluks has not created any disproportion in the land irrigated within the taluk (see table-2.9).

Table No.2.9: Gross and Net Area Irrigated Across Taluks - 2011 (No. & %)

Sl. NO.	Taluk	Gross Irrigated Area	%	Net Area Irrigated	%
1	Bhadravathi	37936	21.79	29233	20.41
2	Hosanagara	8300	4.77	7286	5.09
3	Sagara	15193	8.73	13346	9.32
4	Shikaripura	36301	20.85	28641	20.00
5	Shivamogga	32476	18.65	26285	18.35
6	Soraba	30569	17.56	26882	18.77
7	Thirthahalli	13333	7.66	11532	8.05
	District	174108	100.00	143205	100.00

Source: Department of Agriculture, 2011

2.9 Infrastructure

The infrastructure in Shivamogga is developing. While the basic infrastructure such as roads, electricity and water are largely available, more modern infrastructure like 'pukka' roads, institutions of higher education and specialized hospitals are yet to become a reality. A profile of basic infrastructure with its present status is given below:

2.9.1 Water

The major rivers of the district are the Tunga, Bhadra, Kumudwathi, Varada, Kushawati, Dandawati and Sharavathi. These rivers have been source for irrigation andpower generation.There are 9 major reservoirs in the district including Linganamakki, Ambligola and Tugna. All the rivers, together account for 350 Kms of river flow and 48000 Ha of water sheet. There are three Hydro electric power generation units (Sharavati project) in the district with a combined capacity of 1,469 MWs. The district has surplus power and accounts for 30 per cent of the power generated in Karnataka.

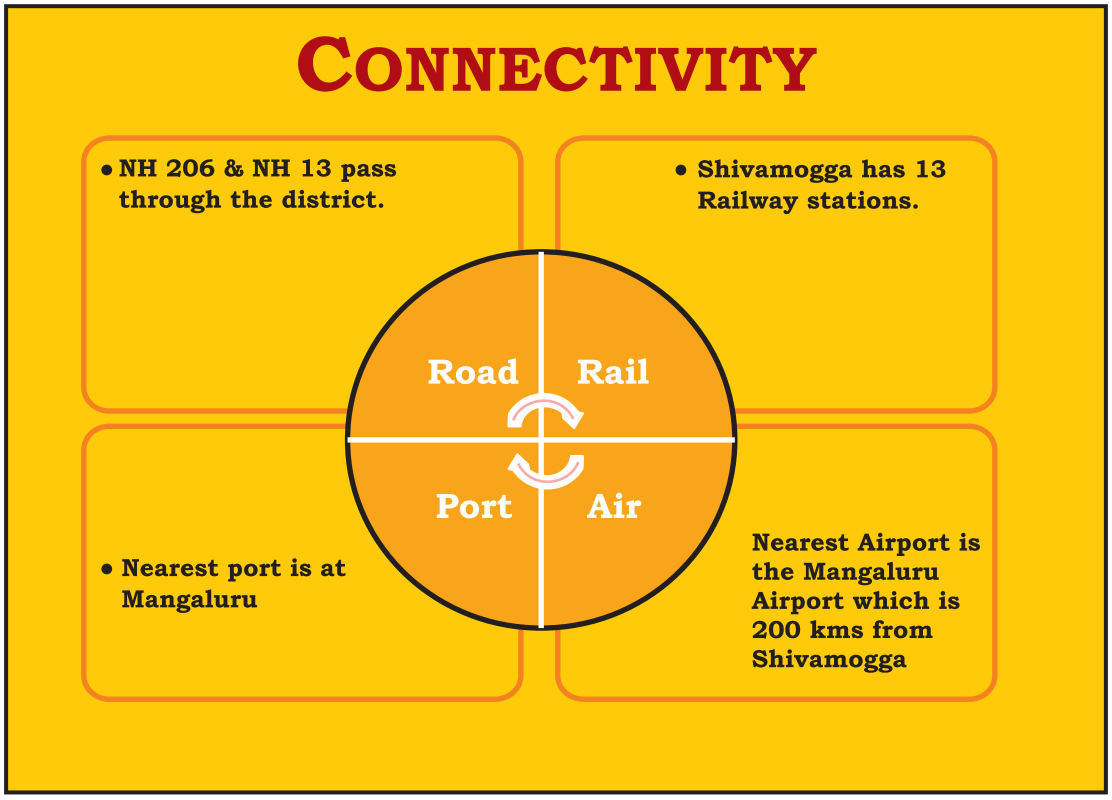
2.9.2 Hospitals

The Shivamogga district has 88 primary health centres along with 9 allopathic hospitals. The dispensaries and drug shops are available in plenty. The district has been the centre for various healthcare initiatives at Government level like TB control programme, polio immunization programme, etc. Many private hospitals and Nursing homes have also been functioning in different places in the district.

2.9.3 Connectivity

The district is well connected to the state capital, district headquarters and other places. All the four prominent ways of connectivity, namely the road, railway, port and air have their facilities available for the people of the district.

Fig.2.6: Connectivity



Source: Industries and Commerce Department, Shivamogga.

2.9.4 By Road

The new bus station at Shivamogga City is spacious and it can cater to 882 departures per day. It is one of the biggest bus terminals in the state. It offers facilities like parking bays, waiting lounges, restaurants, etc. This terminal, spread over five acres, has police outpost, computerized reservation counter and waiting rooms.

Shivamogga has a total road length of 6632 km with 222 km belonging to the National highways and 402 km belonging to state highways.

2.9.5 By Rail

Shivamogga city has a railway station. There are trains that run to and from Bengaluru and Mysuru. The Birur town Railway Junction provides connection to most parts of India. It is approximately 70 kilometres (45 minutes travel) from Shivamogga. The most popular trains from Bengaluru are the Shivamogga Express and the Inter-City Express. Another Inter-city train has been introduced between Mysuru and Talaguppa via Sagar Town.

2.9.6 By Air

Shivamogga airport is under construction in Sogane, 6 km from Shivamogga city. Airports at Bengaluru, Mangaluru and Hubli will be connected to Shivamogga airport. Shivamogga Airport is India's first private regional Greenfield airport developed under Public-Private–Partnership, in association with the

Government of Karnataka (GoK). The project is being developed by Regional Airport – Holdings International Limited, a pioneer in aviation infrastructure and services.

2.9.7 By Port

Shivamogga is very well connected by road and railway. This has helped the district to comfortably avail other facilities of connectivity through air and port. The nearest port facility is available at Mangaluru.

2.9.8 Tourism

The district is well known for its importance to tourism. There are many places attracting tourist from within and outside the state. It is also a destination for foreign tourists.Some of the prominent places are:

a) Mandagadde Bird Sanctuary: This is situated at a distance of 30 kilometres from Shivamogga City and it hosts some of the magnificent birds.

Jog Falls: This is most famous attraction in Karnataka State. It is the highest waterfall in India. It is located at a distance of about 100 kilometres from Shivamogga City. Jog Falls is created by the Sharavathi River dropping 253 m (830 ft), making it the second-highest plunge waterfall in India after the NohkalikaiFalls with a drop of 335 m (1100 ft) in Meghalaya. Sharavati, a river which rises at Ambutirtha, next to Nonabur, in the Thirthahalli taluk and takes the northwesterly course by Fatte petta, receives the Haridravati on the right below Pattaguppe and the Yenne Hole on the left above Barangi. On arriving at the frontier it bends to the west, precipitates itself down the Falls of Gersoppa, and passes that village (properly Geru-Sappe), which is some 29 kilometres distant, discharging into the sea at Honnavar in North Kanara.The Sharavati, flowing over a very rocky bed about 250 yards wide, here reaches a tremendous chasm, 290 m (960 ft) deep, and the water comes down in four distinct falls. The Raja Fall pours in one unbroken column sheer to the depth of 830 ft (250 m). Halfway down it is encountered by the Roarer, another fall, which precipitates itself into a vast cup and then rushes violently downwards at an angle of forty-five degrees to meet the Raja. A third fall, the Rocket, shoots downwards in a series of jets; while the fourth, the Rani, moves quietly over the mountain side in a sheet of foam. The Tourism Department has built steps from the viewpoint to the bottom of the hill where the waterfall can be seen at the opposite side. There are approximately 1400 steps built to reach the bottom of the hill.



Fig.2.7: Jog Falls



Fig.2.8 Kodachadri Hills

a) Tyavarekoppa Lion Safari: A great place to enjoy the unaltered nature and wildlife. It is at a distance of about 10 kilometres from Shivamogga City.

b) Tunga Anicut Dam: This is a picnic spot for local people and it is about 14 kilometres away from Shivamogga City.

Shivamogga district has several places of tourist interest and also gifted with many scenic beauties like Kunchikal Falls, Barkana falls, Achakanya falls, Vanake-Abbey falls, Hidlamane falls and Dabbe falls. There are hill stations & trekking places. In addition, the district is also famous for temples, art and architecture. There are about 40 prominent temples in the district. The district is famous for religious and heritage structures in art and architecture. It also acts like tansit point for other tourism potential areas in the adjoining districts.

2.10 Regional Perspectives and Backwardness

Shivamogga is a primarily a rural district. While Shivamogga, Bhadravathi and Hosanagara show robust employment trends and signs of modernization, the remaining taluks are mostly agrarian in nature. The status of development varies across taluks irrespective the level of urbanisation and industrialisation. An estimate of CCDI value and status of backwardness of different taluks of Shivamogga is given in table 2.11. The taluks of Shikaripura and Soraba have CCDI value of less than 1 implying backwardness. All the other five taluks have attained CCDI value of more than 1 (see Table-2.10). These taluks are considered to be relatively more developed. Thus, there is an imbalance in the status of development attained by different taluks Some of these observations imply that the future perspective of development needs to focus itself to a dynamic promotion of modernised agriculture and supportive employment generating industrialisation.

Table No.2.10: Taluk-wise Backwardness Indices – CCDI values

Sl. NO.	Taluk	CCDI Value	Rank in the State	Status of Backwardness
1	Bhadravathi	1.21	29	Relatively Developed
2	Hosanagara	1.07	47	Relatively Developed
3	Sagara	1.20	30	Relatively Developed
4	Shikaripura	0.92	86	Backward
5	Shivamogga	1.46	14	Relatively Developed
6	Soraba	0.82	126	More Backward
7	Thirthahalli	1.31	23	Relatively Developed

Source: HPCFRRI, D.M. Nanjundappa Report, 2002

With a view to obtain further insights into the regional developments in the district, few of the Grama Panchayaths in the taluks of Hosanagar and Sorba were selected for intensive study. In this connection, detailed in-depth discussions with a variety of stakeholders such as the community members, leaders, elected representatives, the panchayath and the taluk level officials. The summary of these discussions are presented below:

Sampkatte Grama Panchayath: Firstly, the two villages have been severly affected by the constructions of the dam during 1970 and 1986. While the affected families are said to have been provided with lands, they are unable to exercise rights on the lands allotted to them in the Bhadravathi taluk. Thus, these 15-20

families have become landless. Further, the Karnataka Power Corporation is said to have acquired lands in these villages resulting again in displacement. As a result, the prevailing scenario could be summarized below:

- There are no fertile lands.
- There is low yields, There is also the wastage of fertilizer due to the submergence of lands in the water
- There are no industries.
- These villages are located very far away from places such as the Sagara due to the non-execution of works such as the construction of a bridge which is expected to cost huge amount. The people continue to depend on the launch operated by the Government department.
- The students will have to traverse a distance of 5-10 kms. And there are no residential schools.
- Each of the household in these villages requires a road, well, house, electricity, kerosene oil etc., The villages require still more infrastructural facilities. Thus, it has become difficult to execute programmes such as the Indira Awas Yojana and Swachcha Bharath Abhiyan in the interior regions.

Nittur Gramapanchayath:

The highlights of the socio-economic conditions of the households in the panchayath is as below:

- There is acute water problem. The ground water is also depleting.
- The villages face heavy rains and are not able to take up agriculture. The yields in such crops such as Paddy, Arecanut is also very low and thus, agriculture is becoming uneconomical.
- There are problems related to livestock as well. There are no verterinary dispensaries. Even the dogs are reported to be dieing out of a certain disease. Every house is completely dependent on the market for the milk supply.
- No proper marketing facilities.
- About 50 per cent of the households are below the poverty line and most of them belong to the socially marginalized groups.
- There are no proper titles to the lands held by the community members.
- The Kasturirangan Report is also expected to play havoc on the lives of the farmers as certain restrictions are going to be imposed on the use of pesticides.
- There are lot of issues relating to the people occupying the forest lands.
- Even the grama panchayath office does not have a good building and is not located in a place accessible to the different villagers.

Thathoor and Shakunavalli Grama Panchayath:

Both these panchayaths are in the Soraba taluk. The highlights of the discussions held with the stakeholders highlight the relative socio-economic backwardness of these panchayaths. The critical issues facing them are:

- A large no. of households generally the agricultural labourers and the marginal farmers are said to be resorting to migration to the Chikamagalur district in search of employment. This is due to the possibility of higher wages that is offered by the coffee planters. This is said to be not only for reasons of sustenance, but also enhancing their

quality of life as well.

- Both the panchayaths have a large percentage of small and marginal farmers.

- In the Thathoor panchayath, a large majority i.e. more than 75 per cent belong to the Bhovi community. There are also people belonging to other communities. Some of the households in the Shakunavalli panchayath are able to obtain water from the Varada river for irrigation purposes.

- Due to the increased awareness as a result of the location of the GPs [more so in respect of Thathoor panchayath] the communities are said to be accessing the educational and the health facilities. The community members who have been able to complete courses such as the engineering are said to be gainfully employed in Bengaluru and elsewhere also.

- These villages are said to be confronted with problems such as poor telecommunication networks. This is said to be affecting the day to day functioning of the panchayath as well.

- There is the deficiency of the physical infrastructure as well.

The above discussions reveal that several pockets of the district are confronted with serious problems which require serious consideration.

2.11 An Overview

The preceding analysis of the district indicates the general background and possible areas of development. It is evident that Shivamogga is making progress with all its resources potentialities. However, there is need for a detailed analysis of progress and development with an emphasis to examine the contribution made by various schemes and programmes implemented by the State Government. This kind of analysis is attempted to explore possibilities of improving choices and enhancing opportunities for people to enable them to improve standard of living.

Fig 2.9: Sigandur Launch



COMPUTATION OF INDICES

3.1 Introduction

The present chapter attempts to analyze 7 indices designed and developed in connection with the human development exercise undertaken for the district. The chapter aims at ranking the different taluks not only across the 7 indices, but also in respect of different dimensions identified under each of these indices.

3.2 Human Development Index [HDI]

Method of Estimating HDI

To compute HDI both at the district and taluk level 11 indicators are used including the sub-indicators related to living standard, education and health. For purposes of deriving HDI at the district level, district level indicators, and for taluk, the respective indicators are used. **For the estimation of HDI, the following steps were followed:**

All computations are done at two stages. The first computation helps in understanding the relative positions of different taluks within the district. The second set of computation relates to the position of the district. As a first step, a minimum and maximum values were set for each of the above 11 indicators to transform them into indices lying between zero and one. For this purpose, the observed minimum and maximum figures for each of the indicators are taken. Since the Geometric Mean has to be calculated, the minimum value would be taken as 10 per cent less than the observed minimum value in the taluk for positive indicator and 10 % more for the maximum value for the negative indicator.

2. To convert the indicators into an index, the formula is

$$\text{Positive Indicator Index} = \frac{\text{Actual Value - Minimum Value}}{\text{Maximum Value - Minimum Value}}$$

$$\text{Negative Indicator Index} = \frac{\text{Maximum Value - Actual Value}}{\text{Maximum Value - Minimum Value}}$$

However, for per capita income, the actual per capita income, the minimum per capita income and maximum per capita income are to be converted into natural log values before converting into the index.

3. For computing sectoral indices (health, education and standard of living) geometric mean is used and the method of calculation is as below. Thus, there will be three indices; standard of living; health and education.

Sectoral Index = If $I_1. I_2 ..... I_n$ are the n indices for a particular sector, then the

geometric mean for the sector = $(I_1 \times . I_2 \times ..... I_n)^{(1/n)}$.

4. To compute HDI, the three sectoral indices are aggregated using geometric mean with

the following formula.

$HDI = (SI_l \times SI_h \times SI_e)^{(1/3)}$; where SI_l is the sectoral index for living standard, SI_h is the sectoral index for health and SI_e is the sectoral index for education.

The HDI has three dimensional indices viz., Living Standard, Health and Education. According to the analysis, Shivamogga taluk stands first with a score of 0.897 on the living standard indices among the 7 taluks. The next in rank are Bhadravathi [0.835] and Sagara taluks [0.455] with 2and 3 ranks respectively. The Soraba taluk has the least score i.e. 0.161 and thus, it gets the 7th rank. The variations across different taluks are quite significant

Table-3.1 Three dimensional indices of HDI

Sl. No.	Taluk	Living Standard		Health		Education		HDI	Rank with in the Dist.
		Score	Rank	Score	Rank	Score	Rank		
1	Bhadravathi	0.835	2	0.839	1	0.733	3	0.800	1
2	Hosanagara	0.260	6	0.539	3	0.475	7	0.405	5
3	Sagara	0.455	3	0.815	2	0.788	2	0.663	3
4	Shikaripura	0.377	5	0.215	7	0.713	4	0.387	6
5	Shivamogga	0.897	1	0.341	6	0.974	1	0.668	2
6	Soraba	0.161	7	0.355	5	0.648	5	0.333	7
7	Thirthahalli	0.391	4	0.480	4	0.613	6	0.486	4

On the health index, Bhadravathi taluk is found to be higher than other taluks, most importantly the Shivamogga taluk. The index value for the Bhadravathi taluk is 0.839. The next in rank is occupied by Sagara taluk (Table-3.1). The index value for the Shivamogga taluk is 0.341 and gets 6th rank. Shikaripura taluk has got a value of 0.215 and stands last in the ladder.

The educational index for all the taluks excepting the Hosanagara taluk is well above half way mark. Thus, the Shivamogga taluk gets a score of 0.974 and thus, the first rank in respect of this index. The Sagara taluk stands second with a score of 0.788. The Hosanagara taluk gets the last rank and the value is 0.475.

The HDI values for the taluks are found to vary from 0.333 to 0.800. While the Soraba taluk gets the least score, the maximum value is obtained by the Bhadravathi taluk. The score for the Shivamogga is 0.668 and secures the second rank in HDI. Sagara taluk gets an aggregated value of 0.663 and stands third among the seven taluks in the district. The rank for the Shikaripura taluk is 6th with a score of 0.387. The performance of the Hosanagara taluk is not very impressive and thus gets a value of 0.405 and consequently the fifth rank among the taluks in the district.

The aggregate HDI values reveal the following:

1. Of the three dimensions, there is relatively poor progress in terms of education followed by living standard and health in Bhadravathi taluk. In the event of attainment of a score of 1 each in living standard and education, the total aggregate value will be around 0.9 for all the three indices. Thus, the best improvements can be seen only when there is improvement in health dimension in terms of decline in Child Mortality Rate and Maternal Mortality Rate.

2. On the other hand, Soraba taluk which has the least HDI value would require vast strides to be made in the sphere of living standard and health. While the indicators such as access to modern cooking fuel, electricity, the type of house etc., may not have a direct bearing on the health of the mother and child, but they may have an indirect influence in the decline of mortality rates. The higher growth rates of population in the taluk might serve as a great impediment in reducing mortality rates.

3. The relatively higher rates of mortality in Shivamogga taluk are found to have their impact on health dimension and thereby on the human development index. This is definitely due to the large concentration of urban population in the taluk. As a result of their poor economic status and more importantly, the increased preference of the people in the district to avail the facilities in the district hospital has contributed towards lower health score for the Shivamogga Taluk. Thus, the poor HDI of Shivamogga taluk is not necessarily a true reflection of its status, but a reflection of the poor status in other taluks.

3.3 Gender Inequality Index [GII]

The GII attempts at analyzing the position of the women as compared to men in different public and private domains and at the household level. There are three indicators used. These include reproductive health, empowerment and labour market. The ranks assigned are based on the values for different indicators which are negatively related i.e. the highest score gets the least rank and vice-versa.



Fig 3.1 Cultural Programme at Anganwadi Centre at Shivamogga

1. Aggregating across dimensions within each Gender Group using Geometric Mean

For Females

$$G_F = \sqrt[3]{\left[\left(\frac{1}{MMR} \right) x\ D\ x\ ANE \right]^{1/3} * [R_F \times CHLD_F \times LIT_F)^{1/3} * [WPR_F \times NAG_F \times WAGE_F]^{1/3}}$$

For Males

$$G_M = \sqrt[3]{1 * [R_M \times CHLD_M \times LIT_M)^{1/3} * [WPR_M \times NAG_M \times WAGE_M]^{1/3}}$$

2. Aggregating across Gender Group using a Harmonic Mean.

$$HARM(G_F, G_M) = \left[\frac{(G_F)^{-1} + (G_M)^{-1}}{2} \right]^{-1}$$

3. Calculate the Geometric Mean of the Arithmetic Means of the each Indicator

$$G_{\bar{F}\bar{M}} = \sqrt[3]{\overline{health}, \overline{empowerment}.\ \overline{LFPR}}$$

Where

$$\overline{health} = \left[\frac{\left[\left(\frac{1}{MMR} \right) x\ D\ x\ ANE \right]^{1/3} + 1}{2} \right]$$

$$\overline{empowerment} = \frac{[R_F \times CHLD_F \times LIT_F]^{1/3} + [R_M \times CHLD_M \times LIT_M]^{1/3}}{2}$$

$$\overline{LFPR} = \frac{[WPR_F \times NAG_F \times WAGE_F]^{1/3} + [WPR_M \times NAG_M \times WAGE_M]^{1/3}}{2}$$

4. Calculating the GII by comparing th equally distributed Gender index to the reference standard The GII value ranges from Zero (no gender inequality across dimensions) to one (total inequality across dimensions)

$$GII = 1 - \frac{HARM\ (G_F, G_M)}{G_{\bar{F}, \bar{M}}}$$

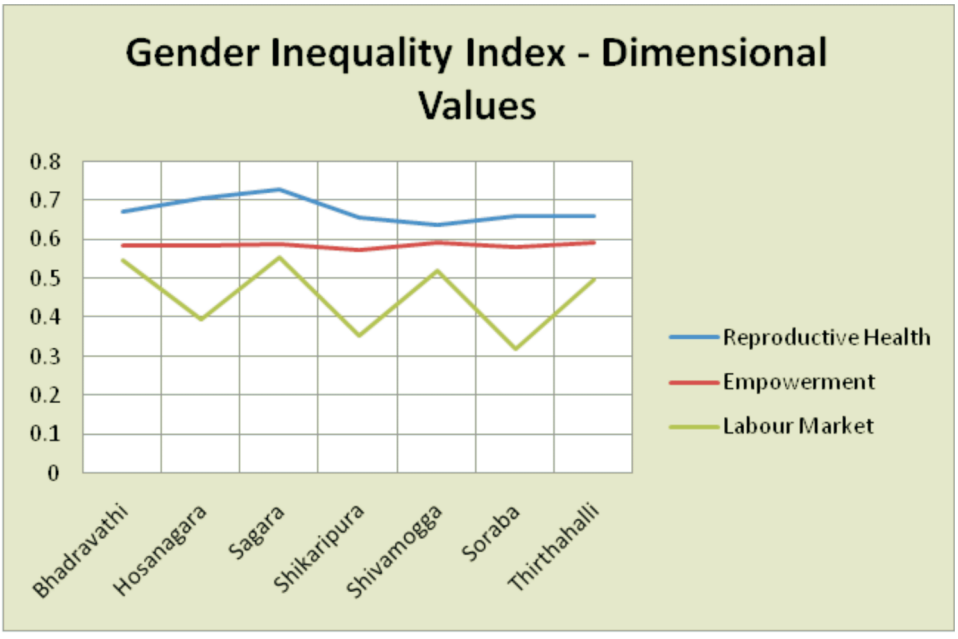
Table-3.2 Indicator values of GII

Sl. No.	Taluk	Reproductive Health		Empowerment		Labour Market		GII	Rank with in the Dist.
		Score	Rank	Score	Rank	Score	Rank		
1	Bhadravathi	0.670	5	0.584	3	0.545	6	0.081	5
2	Hosanagara	0.704	6	0.584	4	0.395	3	0.081	6
3	Sagara	0.728	7	0.587	5	0.554	7	0.062	1
4	Shikaripura	0.657	2	0.574	1	0.354	2	0.076	3
5	Shivamogga	0.637	1	0.592	7	0.521	5	0.091	7
6	Soraba	0.661	4	0.581	2	0.321	1	0.066	2
7	Thirthahalli	0.660	3	0.592	6	0.499	4	0.080	4

3.3.1 Reproductive Health: In terms of reproductive health, the least score is 0.637 and the highest score is 0.728. Thus, Shivamogga and Sagara taluks which have the highest and the least values get ranks of 1 and 7 respectively. The status of women in Sagara taluk need to improve with that of other taluks. It implies that variations in reproductive health across taluks are not significant.

3.3.2 Empowerment: The women in Shivamogga district are not found to be quite different as regards their empowerment is concerned. There may be a better representation in various public offices, mobility in society and so on. The scores for different taluks are within a narrow range of 0.574 to 0.592 (see Table-3.3).This implies that women in Shivamogga district are empowered in a similar pattern across taluks. Inspite of higher exposure and urban concentration along with better educational facilities, Shivamogga is found to be not supporting empowerment of women as much as other taluks.

Fig.3.2: Gender Inequality Index - Dimensional Values



3.3.3 Labour Market: The women in Shivamogga district is found to be confronting wide varied situations in terms of opportunities, wage differentials and the nature of occupations pursued by them. Soraba taluk has the lowest indices value of 0.321 and as a result gets the first rank. Sagara taluk on the contrary, gets the highest value of 0.554 and thereby gets the 7th rank. Thus, the relatively developed taluk such as the Sagara seems to be withholding or not promoting women's interests in the economic domain. On the other hand, the relatively less developed taluks seem to be quite different. It is necessary to understand factors promoting or preventing advancement of women in the economic domain.

The GII value, which is an aggregate of reproductive health, empowerment and the labour market dimensions, is 0.062 for Sagara taluk with first rank. In contrast, the GII value for Shivamogga taluk is 0.091 with rank 7 in the district. It is important to note that relatively poorer values speak of poor status for women in the district. Thus, there is need to neutralize those factors which are not promoting equality in the district.

3.4 Child Development Index (CDI)

The three dimensions under the Child Development Index are the Health, Nutrition and Education. The average of these three indices decides the status of the taluk in the district.

Computation of Child Development Index

The indicators have been broadly categorised under three parameters that influence the HDI. All the above indicators are negative in nature except for the education dimension. The index values for each of the indicators are calculated by using the following formula –

$$\textbf{Index Value = For Negative indicator} = \frac{\text{Maximum Value - Actual Value}}{\text{Maximum Value - Minimum Value}}$$

$$\textbf{Index Value = For Positive indicator} = \frac{\text{Actual Value - Minimum Value}}{\text{Maximum Value - Minimum Value}}$$

The index values for each of the indicators would range between 0 and 1 and the CDI is the average of index values of the three indicators – health, nutrition and education with the highest value indicating better child development. The composite child index is the geometric mean average of the index values of all sectoral indicators.

Table-3.3 Scores and Ranks of Three dimensions of Child Development

Sl.No.	Taluk	Health		Nutrition		Education		CDI	Rank with in the Dist.
		Score	Rank	Score	Rank	Score	Rank		
1	Bhadravathi	1.000	1	0.974	1	0.620	5	0.892	1
2	Hosanagara	0.344	5	0.620	4	0.276	6	0.465	4
3	Sagara	0.625	3	0.401	5	0.000	7	0.357	7
4	Shikaripura	0.000	6	0.377	6	1.000	1	0.439	5
5	Shivamogga	0.953	2	0.709	3	0.811	3	0.795	2
6	Soraba	0.344	5	0.178	7	0.896	2	0.399	6
7	Thirthahalli	0.578	4	0.806	2	0.803	4	0.748	3