Understanding HIV & Development

An analysis from Bellary District in Karnataka, India








UNDP India

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Foreword

The National AIDS Control Programme III focuses on district-level action, and aims at strengthening the capacity of actors and services at that level. This district report on Bellary comes at the right time and offers the HIV sector an important approach for effective HIV and AIDS interventions. It underscores the criticality of taking cognisance of the development challenges in a particular area for efficient HIV response.

The case of Bellary clearly indicates that neither quantity of funding, nor vertical interventions with a focus on certain population groups can guarantee reversals in the epidemic. The impact of HIV interventions is dependent on a wide gamut of factors such as the situation of women, migrants, children and marginalised populations. The quality of governance is equally important as it determines the successful implementation of HIV interventions. If the most basic services, rights and opportunities are not available to people in districts and villages, it is unlikely that any amount of knowledge and awareness on HIV will lead to behaviour change – an absolute essential to turn around the epidemic.

HIV interventions have primarily focused on specific target groups. We need to broaden this focus, and develop programmes that make women help themselves, improve governance and delivery of services, and reduce poverty and inequality. Partnerships with other development programmes and schemes will develop a more comprehensive HIV response. Adopting strategies that are complementary in nature will ensure that resources for the national programme are well utilised.

Finally, I would like to congratulate all those who were involved in the preparation of the report and hope that other districts will emulate this understanding in planning processes.

(K. Sujatha Rao)

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Principal Secretary to Government
Planning and Statistics Department

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Message

I am pleased to know that, UNDP, New Delhi, has brought out a pilot study on Bellary district relating to prevalence of HIV/AIDS with a focus on human development in technical collaboration with the Institute of Economic Growth, New Delhi, a leading research organization. The pilot study is distinct as it recognizes close linkages between HIV/AIDS and human development. The study recognizes the socio-economic and cultural factors responsible for high prevalence of HIV/AIDS in a low human development district like Bellary. It is also disturbing to note from the study that recent upsurge in economic growth in the district has not been consistent with human development mainly due to unequal distribution of economic gains. I hope that this report which is the outcome of an interactive process at different levels generates more discussion on this subject of prevalence of HIV/AIDS and human development and enables the evolution of a more meaningful strategy to tackle this epidemic.

I am sure the findings of this study will go far in sensitizing policy makers, administrators, field level functionaries, NGOs and the civil society at large, about HIV/AIDS and its impact upon human development indices and above all, will enthuse them to consider innovative approaches towards improving the situation in the district.

(LAKSHMI VENKATACHALAM)
Principal Secretary to Govt.
Planning Programme Monitoring &
Statistics Department

United Nations Development Programme

Message

UNDP and the Government of India have produced many human development reports, but this one is unique. The Report *Understanding HIV & Development* critically appraises both the HIV epidemic and the human development status in the district of Bellary in Karnataka.

As the Report argues, economic and social conditions can influence the HIV epidemic. Above all, HIV can reinforce already existing inequalities. There is sufficient evidence that HIV has a severe impact on women, children, and the poor who cannot access basic services, and participate in development. At the same time, those living in areas without equitable growth are less likely to benefit from HIV programmes. The report also argues that the quality of governance has an impact on the quality of the HIV response.

HIV is not just about increasing awareness and improving medical care. The Report stresses the need to focus on development patterns to sustain benefits from HIV programmes. It recommends that the HIV response be made an integral part of the district planning process and the overall development response. It urges planners and policy makers to understand how HIV and development are related. The report also challenges professionals working in the HIV sector to analyse development conditions to respond to the HIV epidemic.

Globally, India has led the preparation of several Human Development Reports at the state and district levels. They are increasingly being used as an essential tool for evidence based planning. Human Development is a priority for UNDP, and I am happy that the Report has been prepared along with the Government.

I would like to acknowledge the efforts of research team at the Institute of Economic Growth. I would especially like to thank the District Administration of Bellary and the Karnataka State Planning Department for helping in the production of this report.

Deirdre Boyd
Country Director

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KARNATAKA STATE AIDS PREVENTION SOCIETY

NO. 4/13-1, Crescent Road, High Grounds, Bangalore – 560001

Nilaya Mitash
Project Director
Karnataka State AIDS Prevention Society

Message

Karnataka is one of the six states with high prevalence of HIV in India. Around 2.5 lakh populations are living with HIV in the state, with northern districts being most affected. Bellary is one of the districts with high prevalence of HIV. It is also a priority district for focused intervention on prevention of as well as care & support for people living with HIV and AIDS.

The district report, which gives details on literacy, migration and industries, helps us to understand the nature of the epidemic in the district. An interesting feature of the report is that it reviews the nature of the economic growth in the district, and analysis it viz-a-viz the nature of the HIV response in the district.

Karnataka State AIDS Prevention Society is committed to reversing the epidemic in the state. This analysis will help us make our HIV interventions on prevention in the district more strategic and effective. It will guide us in the design of our response in other districts in the state as well.

Nilaya Mitash
Project Director

Arvind Shrivastava, IAS
Deputy Commissioner and
District Magistrate

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Message

I'm extremely proud that Bellary is the first district that has developed a district level HIV report, which analyses the epidemic from the human development perspective. The Report makes important findings – it concludes that development and HIV prevalence are related, and that both have an impact on the other.

This Report offers district planners a unique way of addressing the HIV epidemic, by demonstrating how it is closely linked to inequality, the pattern of economic growth and, how these factors can affect the course of the HIV infections in a given area. To reduce prevalence in Bellary, it would be essential that we address development issues by improving the status of poor, women, devadasis, migrant labourers and workers.

This Report is also a valuable tool for Bellary to understand the factors that influence HIV in Bellary, and help the district administration to strengthen action at the district level. We are committed to reduce HIV prevalence in Bellary, and recognise many areas for improvement. We will take all steps necessary to reduce economic and social inequality in the district.

I hope that this report will be an inspiration for others to plan their HIV response in a comprehensive manner.

District Commissioner
Bellary

Acknowledgements

Preventing HIV and AIDS has been accepted as a critical challenge for human development and is one of the important Millennium Development Goals. Several countries including India are committed to meet the targets for these goals. There is now consensus that for an effective HIV prevention and control programme, the interventions need to look beyond health and address the factors that fuel the epidemic. This report is an attempt to better understand the close linkage between economic growth, governance and human development for effective and sustained HIV interventions at the district level.

The authors are grateful for the leadership provided by the National AIDS Control Organisation. The support received from the State Government of Karnataka and the District Administration of Bellary, under the leadership of Arvind Shrivastava, was valuable. Equally important was the guidance and involvement of the Chief Executive Officer of the Zilla Panchayat.

The contributions and inputs of all the representatives from the district administration, especially from the line departments, are greatly appreciated. Many thanks also to all NGO partners, and doctors from the Voluntary Counselling and Testing Centre (VCTC) and PPTCT centres who took out time to give their feedback about the situation in Bellary. Finally, this report would not have been possible without the unconditional support from the Bellary District AIDS Control Society (BDAPS), especially Dr. Jai Kumar, Prahlad Rao and Najma Nabiwale. Special thanks to Seetha Parthasarthy for editing the report. We would also like to acknowledge the contribution of Dr. T.R. Chandrasekhara from Kannada University in Hampi.

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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ANC	Ante-natal Clinic
ANM	Auxiliary Nurse Midwife
ART	Anti-retroviral Treatment
BDAPS	Bellary District AIDS Prevention Society
BJP	Bharatiya Janata Party
BSS	Behavioural Sentinel Surveillance
CACL	Campaign Against Child Labour
CAGR	Compound Annual Growth Rate
CCDI	Comprehensive Composite Development Index
CEO	Chief Executive Officer
CHARCA	Coordinated HIV/AIDS Response through Capacity Building and Awareness
CHC	Community Health Centre
CMC	City Municipal Council
CMO	Chief Medical Officer
CSO	Central Statistical Organisation
CWPR	Child Workforce Participation Rate
DIC	District Industries Centre
DLHS-RHS	District Level Household Survey-Rapid Household Survey
DMC	Drought Monitoring Cell
DRP	Devadasi Rehabilitation Programme
DSA	District Situation Assessment
DSP	District Strategic Plan
ESIC	Employees' State Insurance Corporation
FDI	Foreign Direct Investment
FHAC	Family Health Awareness Campaign
FPAI	Family Planning Association of India
FRU	First Referral Unit
FSW	Female Sex Worker
GCWA	The Global Coalition on Women and AIDS
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GoK	Government of Karnataka
GSDP	Gross State Domestic Product
H.B. Halli	Hagaribommanahalli
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HPCFRRI	High Power Committee for Redressal of Regional Imbalances
HRG	High Risk Group
HSS	HIV Sentinel Surveillance
IBM	Indian Bureau of Mines
ICTC	Integrated Counselling and Testing Centre
IDU	Injecting Drug User
IEC	Information, Education and Communication
IIPS	International Institute for Population Sciences
IML	Indian-made Liquor
IMR	Infant Mortality Rate
IPR	Industrial Policy Resolution
IT	Information Technology

JSW	Jindal Steel Works
JVSL	Jindal Vijayanagar Steel Limited
KHDR	Karnataka Human Development Report
KHPT	Karnataka Health Promotion Trust
KSAPS	Karnataka State AIDS Prevention Society
KSBCL	Karnataka State Beverages Corporation Limited
KSRSAC	Karnataka State Remote Sensing Applications Centre
KSWDC	Karnataka State Women Development Corporation
MASS	Mahila Abhivruddhi Mathu Samrakshana Samasthe
mm&P	Mines, Minerals and People
MSK	Mahila Samakhya Karnataka
MSM	Men who have Sex with Men
MYRADA	Mysore Resettlement and Development Agency
NACP	National AIDS Control Programme
NCW	National Commission for Women
NDDP	Net District Domestic Product
NER	Net Enrolment Ratio
NFHS	National Family Health Survey
NGO	Non-Governmental Organisation
NHDR	National Human Development Report
NHRC	National Human Rights Commission
NMDC	National Mineral Development Corporation
NSDP	Net State Domestic Product
PHC	Primary Health Centre
PLHA	People Living with HIV/AIDS
PPTCT	Prevention of Parent to Child Transmission
PRI	Panchayati Raj Institution
PUC	Pre-University College
RCH	Reproductive and Child Health
RDPR	Rural Development and Panchayati Raj
RNTCP	Revised National Tuberculosis Control Programme
RTI	Reproductive Tract Infection
SC	Scheduled Caste
SHDR	State Human Development Report
SHG	Self Help Group
SSA	Sub-Saharan Africa
SSI	Small Scale Industries
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
ST	Scheduled Tribe
TB	Tuberculosis
TFR	Total Fertility Rate
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
VCTC	Voluntary Counselling and Testing Centre
VIMS	Vijayanagar Institute of Medical Sciences
WPP	World Population Prospects
WPR	Workforce Participation Rate
ZP	Zilla Panchayat

Glossary

Access to Safe Drinking Water	If a household has access to drinking water supply from taps, hand pumps, bore wells or tube wells within or outside the premises, it is deemed to have access to safe drinking water.
Adhyaksha	President of the Zilla Panchayat
Arrack	Strong spirits distilled mainly from fermented fruits, grains, sugarcane, or the sap of coconuts.
Child Labourers	Working children between 5 and 14 years
Child Workforce Participation Rate	The number of children in the age group 5-14 years who are in the workforce to the total number of children in the same cohort.
Couple Protection Rate	An indicator of the prevalence of contraception in the community. It is defined as the percentage of eligible couples effectively protected against childbirth by one or the other approved methods of family planning, viz. sterilisation, intra-uterine device, condom or oral pills.
Crude Birth Rate	Number of births per 1,000 population in a given year
Crude Death Rate	Number of deaths (from all causes) per 1,000 estimated mid-year population in one year, in a given place.
Devadasi	Literally, courtesans of God, meaning their lives centre in and around temples. According to tradition they are in the service of Yellamma, the Hindu goddess of fertility.
Dropout Rate	The percentage of the number of children to total enrolment dropping out of the school system in a particular level in a particular year.
Gram Panchayat	Village level local government
Gross Domestic Product	The sum of value added at every stage of production of all final goods and services produced within a country in a given period of time.
Gross Enrolment Ratio	The number of students enrolled in a level of education whether or not they belong to the relevant age group for that level – as a percentage of the population in the relevant age group for that level.
Head Count Ratio (poverty)	The ratio of population living below the poverty line to total population.
Infant Mortality Rate	It is the ratio of deaths under 1 year of age in a given year to the total number of live births in the same year; usually expressed as a rate per 1,000 live births.
Labour Force	It is defined as the total persons working (or employed) and seeking or available for work (or unemployed).
Life Expectancy at Birth	Average number of years a new born child is expected to live under current mortality conditions.

Literacy Rate	The ratio of the number of literates above seven years to total population.
Mahila Samakhya	A Government of India sponsored programme for education and empowerment of women in rural areas.
Net Enrolment Ratio	Number of students enrolled in a level of education who belong to the relevant age group as a percentage of the population in the age group.
Net State Domestic Product	The state specific Net Domestic Product (NDP) which is derived by deducting the depreciation from the GDP of the state.
Sex Ratio	Number of females per thousand males
Slum	Slum is a compact area with a collection of poorly built tenements crowded together usually with inadequate sanitary and drinking water facilities.
Taluk Panchayat	Taluk level local government
Taluk	A unit of government in some countries of South Asia. It generally consists of a city or town and a number of villages and is part of a larger district within a State or Union Territory. The government body at this level is called Taluk Panchayat.
Total Fertility Rate	The average number of children a woman would have if she were to pass through her reproductive years bearing children at the same rates as the women now in each age group.
Work Participation Rate	The proportion of total workers (main workers and marginal workers) expressed as percentage of total population. This is considered a very crude measure since it does not take into account the age structure of the population. For making specific comparisons, the age specific WPR would be ideal.
Zilla Panchayat	A three-tier panchayati raj system with elected bodies at the Gram, Taluk and District levels constituted as per the 73rd amendment to the Constitution for greater participation of the people and more effective implementation of rural development programmes (and to function as units of local self government). The Zilla Panchayats were constituted as per the provisions of The Karnataka Panchayat Raj Act, 1993.

Executive Summary

"My notion of democracy is that under it the weakest should have the same opportunity as the strongest."- *Mahatma Gandhi*

Bellary, one of 27 districts in Karnataka, has the dubious distinction of having more helicopters than any other district in the State and many are owned by home-grown millionaires. Alongside prosperity for some, there are stark inequalities for others. Bellary is the third richest district in Karnataka and yet it also ranks third in the incidence of poverty. Ironically, still the Devadasi practice continues in Bellary[1]. The modern co-exists with the ancient and all do not have the same opportunities.

Where basic human "opportunities" or capabilities like longevity, educational attainment and a decent standard of living are grossly inadequate, HIV has the potential of taking the form of an epidemic. At the same time, HIV and AIDS is also the single most important factor for reversing human development.

For the first time in India, a report highlights gaps in human development and analyses how they might be linked to shortcomings in HIV interventions. It finds that three key factors may have altered the course of the epidemic in Bellary: unequal and unprecedented economic growth, poor governance, and inadequacy of HIV interventions.

Bellary is among the top four districts with highest HIV incidence in Karnataka. With an estimated 22,000 HIV infections and 1.1 percent HIV prevalence among the general population, Bellary has become the focus of most of the recent discussions on HIV and AIDS in the state. It was also identified as one of the priority districts requiring intervention, and was the first in the country where the United Nations Development Programme's (UNDP) district interventions related to HIV and AIDS were rolled out. This was part of the joint United Nations project "Coordinated HIV/AIDS Response through Capacity Building and Awareness" (CHARCA).

However, CHARCA and other similar interventions have not had a significant impact since recent surveillance statistics indicate an increase in HIV prevalence among those visiting ante-natal care (ANC) and sexually transmitted infection (STI) clinics. The report highlights the factors that might have influenced this situation and targets development agencies and policy makers to help them better understand the links between development and the HIV and AIDS situation in the district. This will eventually help develop effective policies to prevent, control and mitigate HIV.

[1] Devadasi is a religious practice in parts of southern India, including Andhra Pradesh, whereby parents marry a daughter to a deity or a temple.

Agriculture is the main occupation in Bellary. The district is also rich in mineral resources, especially iron ore. It is among the backward districts of Karnataka, both economically and in terms of human development. It ranks 18 among the state's 27 districts in terms of overall human development and is among the bottom five districts on the education front. Women are especially worse off, with female literacy of only 45.2 percent against the state average of 56.8 percent. Marriage below the legal age of 18 is also common. Bellary has a sizeable scheduled caste (SC) and scheduled tribe (ST) population but their indicators on a host of human development parameters are quite adverse. The district has a sizeable population of the Devadasis – a tradition which has degenerated into a culturally sanctioned system of initiating young girls into the sex trade, though the two are not always synonymous. Bellary also has a large mobile population comprising migrant workers as well as people who move away from home for work. This mobility is often fraught with risks and uncertainties and takes place under exploitative conditions. All this increases the vulnerability of the district to HIV and AIDS. More than 0.42 percent of the total adult population of Bellary and 1.11 percent urban adult population are engaged in high-risk activities which lead to HIV and AIDS.

The study found that there has been a sudden and strong upsurge in economic growth in Bellary after 1999, fuelled mainly by the mining industry. This growth has been inconsistent with human development since the gains from the mining boom have not been evenly distributed and wealth has remained concentrated in a few hands. An indication of this inequality is that while Bellary is among the top three districts in terms of per capita income, it also has the third highest incidence of poverty. The benefits emerging from rapid economic development have neither been reinvested in the local economy in the form of industries or infrastructure, nor have these been used to improve welfare.

There is a significant extent of illegal mining in Bellary and this has generated informal and unorganised sector employment, with high degree of job insecurity and little welfare benefits for workers. The pattern of economic development has created a rich and powerful class of individuals, who may also have a significant role to play in the HIV and AIDS epidemic. The existing inequality has resulted in human deprivation, and increased human poverty in the state, which in turn has heightened vulnerability to the epidemic. The third National Family Health Survey (NFHS-3) shows that unsafe sexual practices increase with a rise in the wealth index. On the other hand, people with lower economic and social equity are more vulnerable to HIV and AIDS because of their inability to participate fully in the growth, and access services and opportunities that can improve their lives.

There has been a lack of progress in implementing key policies that could improve basic human development parameters like education, health and women's empowerment. The boom in illegal mining, with consequent disregard for labour and environmental regulations, the inability to curb child labour and implement laws relating to the abolition of the Devadasi system underscore the need for effective governance. All these increase the vulnerability of the district as a whole to HIV and AIDS.

Bellary has been the focus of several interventions to address HIV and AIDS. There has been a rapid expansion of counselling and testing centres in the district. A series of information, education and communication activities have been undertaken and several non-governmental organisations (NGOs) have also been active in the area. The collective response to the epidemic has been hampered by the inadequate reach of interventions and weak environment for implementation. These features, combined with the lack of efforts to mainstream HIV and AIDS interventions into other development programmes and district-level planning, have prevented a faster or sustainable impact of these interventions.

Based on these findings, the report has come up with a list of recommendations to effectively address the HIV and AIDS situation in Bellary.

- The political leadership will have to recognise, acknowledge and act on the key constraints that prevent Bellary from moving from a low human development growth path to a higher one. The new vision for Bellary's development should envisage a broader economic development path, moving it away from iron ore extraction as the main vehicle of growth. Sectors and industries that would demand and generate higher skill employment should be encouraged to make Bellary turn towards a growth path that is consistent with human development.

- The quality of governance needs to be improved significantly, by first enforcing and implementing existing laws, rules and regulations that will prevent corruption and improve the welfare of workers, children and women. Planning for other critical areas of growth and development would also require good governance as a key component for such plans to be successful.

- Interventions to cover all un-reached population groups need to be planned and ways found to mainstream such interventions to the extent possible, so that these are sustainable and move beyond short-term programmes. In the absence of fundamental changes in the pattern of development in the district, such interventions could bring in merely short-term gains.

Ultimately, new and improved strategies in all the three areas – development, governance and response – need to be carried out simultaneously to bring about a significant change in the course of the epidemic in Bellary.

Introduction

According to the *Human Development Report 2001* (UNDP 2001), "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. Without these, many choices are simply not available, and many opportunities in life remain inaccessible." The HIV and AIDS epidemic affects these fundamental tenets of human development, and is, in turn, affected by them as it is more prone in areas where such basic capabilities are inadequate. Thus, viewing HIV and AIDS through the lens of human development – rather than focusing on the virus itself – makes the process of addressing it more people-centric (Dzenovska et al 2005). As stated in *Regional Human Development Report on South Asia* (UNDP 2003), "the linkages between the two are mutually reinforcing in the sense that HIV can undo gains of human development, and the lack of human development can trump any strategy against HIV."

The Human Development Report (HDR) was first launched in 1990 "with the single goal of putting people back at the centre of the development process in terms of economic debate, policy and advocacy[1]". The goal was to go beyond income to assess the level of people's long-term well-being. Since its launch, four composite indices for human development have been developed — the Human Development Index, the Gender-related Development Index, the Gender Empowerment Measure and the Human Poverty Index. Each HDR also focuses on a highly topical theme – like HIV and AIDS – in the current development scenario of countries and regions. The HDRs are developed at the regional, national and sub-national levels, and since 1990, more than 600 such reports have been produced in over 140 countries.

India has the distinction of having produced the first sub-national State Human Development Report (SHDR) for the state of Madhya Pradesh in 1995. Since then, many states have published their SHDRs, some (including Karnataka) more than once. India also published a National HDR (NHDR) in 2001. The reports are prepared by independent experts, and are aimed at improving public accountability and action.

Several national and regional HDRs have addressed the relationship between human development and HIV and AIDS. Many have identified HIV and AIDS as the single most important factor for reversing human development. A comparative analysis of different HDRs (Dzenovska et al 2005) shows, for example, that countries

[1] http://hdr.undp.org/en/humandev/reports/, accessed 7 November 2007.

like Botswana, Uganda and Zimbabwe identify HIV and AIDS as a serious threat to health, security and development, causing social exclusion and eroding people's sense of dignity and self-esteem. In Zambia, more teachers are killed due to AIDS than the number of newer teachers graduating from colleges. Clearly, apart from committing more national resources to preventing the spread of HIV, addressing the issue of growing poverty and deteriorating human development will become an equally daunting task.

While there is a vast amount of literature and research on the different facets of HIV and AIDS in India, there is as yet no document that looks at the situation through the lens of human development. This report – the first of its kind in India – looks at the epidemic in Bellary, Karnataka, using the human development approach. In particular, it focuses on three key factors that may alter the course of the epidemic: the quality of economic growth, the nature of governance, and the extent and adequacy of interventions. The report argues that all three are necessary for making an impact on the epidemic. A pattern of economic growth that is not consistent with human development can render a good set of interventions ineffective, even in well-governed areas. Similarly, quality economic growth and potentially effective interventions may not achieve the desired results, when delivered in a poorly governed area. While there is a significant correlation between quality growth and governance, they need not always go hand in hand, and, therefore, these are being separately analysed in this report.

Bellary district in northeastern Karnataka, has a population of 2.03 million, according to the 2001 census. Though it is rich in mineral deposits, it is one of the most backward districts in the state. It has been at the centre of most of the recent discussions on HIV and AIDS in Karnataka, because its incidence of HIV positive cases was second only to Bangalore urban district in 2002 (Mahila Samakhya-Karnataka 2002). More recent data from the Karnataka State AIDS Prevention Society (KSAPS) has put it among the top four districts in the state with respect to cumulative HIV positive cases in the 1987-2004 period[2] and has identified it as one of the priority districts requiring intervention. Bellary has been the location of one of the district-level interventions related to HIV and AIDS supported by the United Nations in India. The project, `Coordinated HIV/AIDS Response through Capacity Building and Awareness' (CHARCA), was conceived with the primary objective of reducing the vulnerability of young women to sexually transmitted infections (STIs) and HIV.

[2] www.khpt.org, accessed 7 July 2007.

Though there has been a small decline in prevalence in a few high-risk groups, CHARCA and other similar interventions do not appear to have significantly turned the course of the epidemic around in Bellary. The issue was high on the political agenda with the then Union Minister of Health vowing, in August 2003, to make Bellary "free from AIDS" in the next five years[3]. In spite of that, the infection only continued to spread in subsequent years. It was, therefore, deemed necessary for development agencies, like the United Nations Development Programme (UNDP), working in the area to have a greater understanding of the key development factors that have affected the HIV and AIDS situation in the district. The current research was prompted by the view that effective policy-making for prevention, control and mitigation would require a deeper understanding of the links between development and the epidemic in Bellary.

Aim

The focus of the third phase of the National AIDS Control Programme (NACP) is on building state capacity and district-centric planning. It is hoped that this research will provide relevant data and insights to strengthen the planning process. It is also expected that the report would assist UNDP and other bodies working on HIV prevention, treatment and impact mitigation in the district to understand the ground realities better and design more effective interventions.

Objective

The main objective of the report was to put HIV and AIDS in the context of the development of the district, and to find underlying causal relationships between the spread of HIV and developmental factors like economic growth, patterns of industrial development, extent of poverty, occupational patterns, migration, education, status of women, governance and other relevant variables. This objective also meant focusing more on the impact of human development on HIV rather than that of HIV on development. This approach was considered essential since not enough is known about how different development parameters affect the spread of the virus, especially in specific contexts and conditions that are unique to each country/region.

[3] http://www.thehindu.com/2003/08/10/stories/2003081006500400.htm, accessed 20 July 2007.

Human Development and HIV and AIDS[1]

Since the AIDS epidemic hit the world more than two decades ago, the focus on and interest around it has been unparalleled in modern times. The rapidly increasing mortality experienced by countries in sub-Saharan Africa in the early days of the epidemic was reminiscent of the Black Death in Europe a few centuries ago and was seen as having the potential to wipe out the modest progress in development made in the poor countries. The essentially behavioural nature of the HIV epidemic meant that, unlike in the case of the plague, policy makers had fewer prevention tools that could quickly control the spread of the virus. Around this time, development experts, economists and many others started to talk about the economic impact of HIV and AIDS, and subsequently the "socio-economic impact". This started to happen as communities were not only facing high economic costs but also had to deal with disintegration of families, increase in the number of orphans and widows as well as high levels of stigma and discrimination.

Like most fatal diseases, the first visible economy-wide impact of HIV and AIDS is felt on the demographics of a country: it affects the size of the population through higher mortality rates and fewer births because of more women in the reproductive age dying earlier than in a no-AIDS scenario. Despite the inadequacy of vital registration systems in many of the affected countries, there is evidence now of the increasing impact of HIV and AIDS on death rates in the 15-49 age group (Stover et al, 2006).

The Population Division in the Department of Economic and Social Affairs of the United Nations brings out the World Population Prospects (WPP) based on an integrated epidemiological and demographic model. The 2004 revision of the WPP confirms the severe toll that AIDS is continuing to have in many countries, via its impact on life expectancy, morbidity and mortality. For instance, the WPP states that life expectancy in the 40 affected African countries declined from 48.2 years in 1990-95 to 45.7 years in 2000-2005. Life expectancy was lower, in 2000-2005, by 0.9 years than it would have been in the absence of AIDS in the affected Asian countries, 1.3 years in the affected Latin American and Caribbean countries and 0.7 years in the affected more developed countries. Also, the epidemic is shifting the distribution of deaths by age, with 60 percent of all deaths

[1] This chapter is based on a report entitled `Socio-Economic Impact of HIV and AIDS: Mainstreaming Policies of Impact Mitigation' by Gupta et al (2007) and 'Socio-Economic Impact of HIV and AIDS by Pradhan et al (2006) UNDP, 2006.

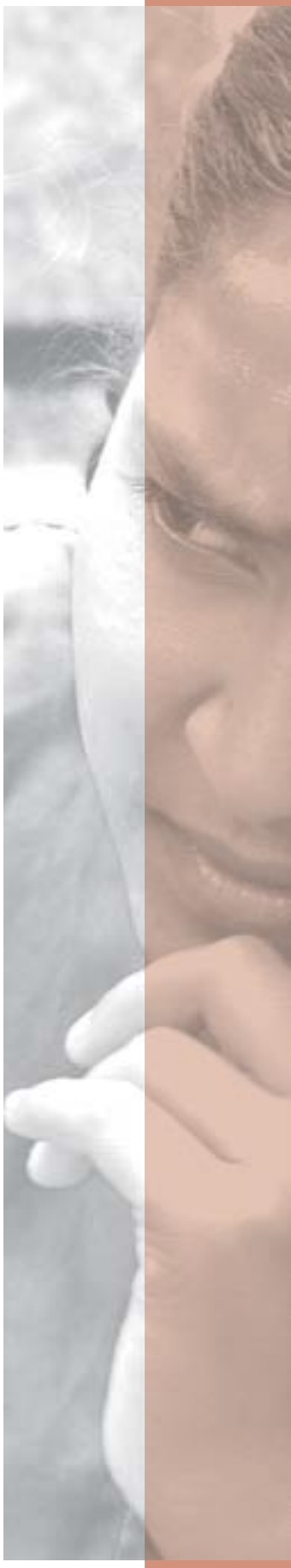
occurring in the 20-49 age group in sub-Saharan Africa. The re-shaping of the population structure due to AIDS has serious implications on the composition of the household, the labour force and productivity of a society.

These facts indicate that the HIV and AIDS epidemic is probably unique among diseases in its ability to have an impact on the demographics of a country, both in the short and long-term. This, in turn, can seriously affect the economic growth and development of a country. At the same time, while these macro-economic impacts are important to understand, the epidemic also has enormous emotional, social and psychological impact on households and individuals, due to the following unique characteristics:

- In many countries, HIV disproportionately strikes those sections of society that are socially and economically more vulnerable.
- Women are more vulnerable to infection given their lower status in the family and lack of education and awareness.
- The major mode of transmission in the developing world – sexual contact – increases the chance that multiple members of the same household will contract the virus.
- There is a long time lag between the first appearance of illness and mortality, resulting in long periods of treatment and high burden of costs of care, for both households and the economy.
- The epidemic has high treatment costs despite significant progress made worldwide in reducing the prices of drugs and offering subsidised treatment.
- A significant decline in household earnings due to the sickness and death of people in the productive age group leads to a deepening of poverty.
- Those affected by HIV and AIDS face high levels of stigma and discrimination.

It is because of all these reasons that the subsequent impact of the epidemic on economic agents – individuals, households, sectors or economies – can be substantial. The most important feature of the epidemic is this *confluence* of factors that heightens the possible economic impact in comparison to other diseases.

What is the exact mechanism through which such a catastrophic event has an impact on an economy? One of the first longitudinal researches on the economic impact of HIV and AIDS was a World Bank project entitled `The Economic Impact of Fatal Adult Illness from AIDS and Other Causes in Sub-Saharan Africa', which looked at more than 800 households in Kagera, Tanzania, in the early



1990s. The research defined impact of any illness and/or death as a combination of three factors[2]:

- **shock** to the resource endowments of economic agents;
- **coping** behaviour of the economic agents in response to the shock; and
- outcome of these two events on the **well-being** of the agents.

If coping were costless, there would be no need to study the economic impact of any disease. Since coping is costly, it reduces welfare, and necessitates the study of the economic impact at the macro, sectoral and micro levels comprising households and individuals. Welfare – comprising multiple parameters – is at the very core of human development, and thus, it is critical to understand that the epidemic has a severe impact on the human development of a country.

At the macro level, the epidemic reduces the rate of growth of gross domestic product (GDP), accumulation of human capital, and alters the magnitude and allocation of public resources away from those factors that promote human development.

At the sectoral level, major effects include reduction in agricultural output and commercial industries including agro-industry, mining, construction, transport and tourism, shortage of quality education, decline in primary and secondary education, rising costs of health care and crowding out of care of other patients, and adverse effects on public finance and public services.

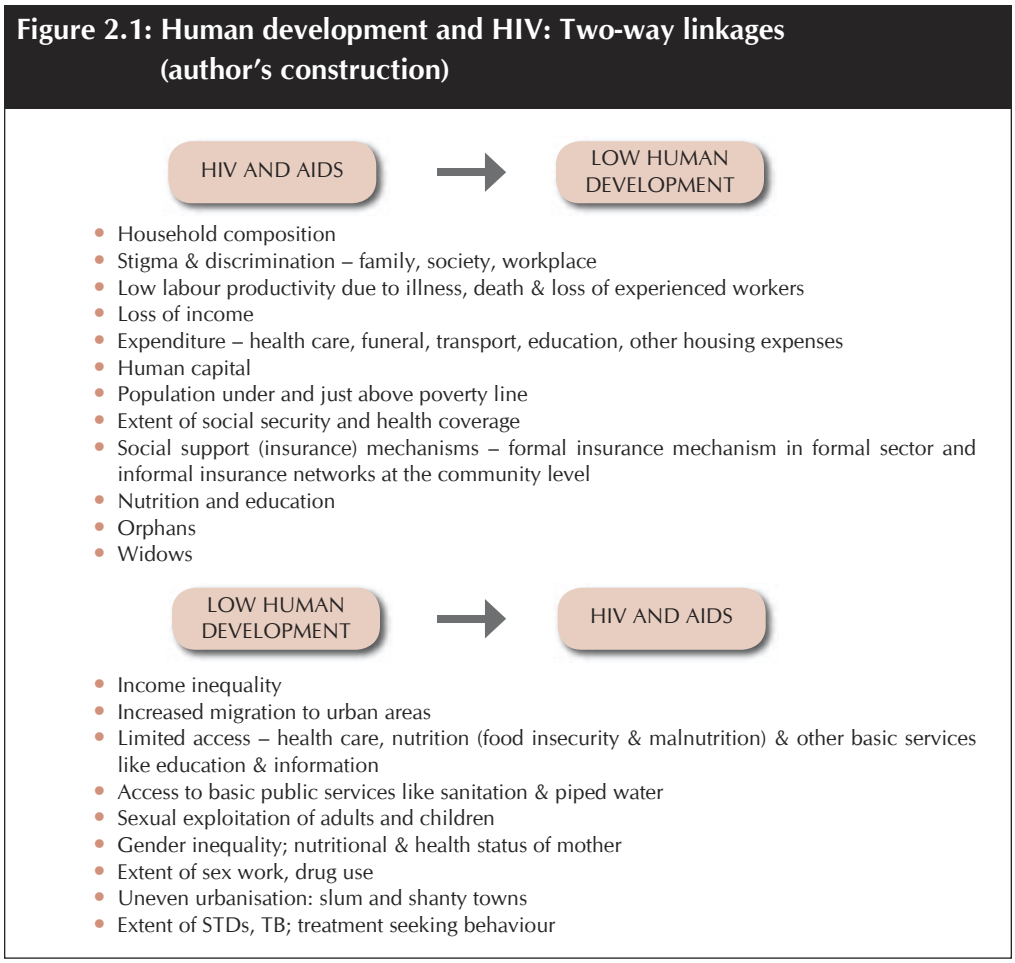
Finally, at the household and individual level, the most immediate visible impact of an adult illness/death is on the following variables:

- reduced income, due to inability to work and reduced productivity;
- increased expenditure on treatment and funeral expenses;
- lower per head essential consumption due to lower income and higher expenditure on treatment;
- lower nutrition;
- withdrawal of children from schools – boys to work to supplement income and girls to look after the younger siblings and care for the sick;
- withdrawal of savings and sale of assets;
- toll on mental and physical well-being of the caregivers;
- reduced emotional well-being; and
- increased number of orphans, widows and female-headed households.

A point that is not discussed as often as the economic impact of HIV and AIDS is the relationship between the epidemic and human development: while the epidemic can reduce development at all levels, the pattern of development can result in increasing vulnerabilities of economic agents such as individuals, households, firms, industry, which, in turn, leads to a more rapid spread of infection.

[2] See http://www.worldbank.org/html/prdph/lsms/lsmshome.html for an annotated questionnaire, accessed 1 October, 2007.

Figure 2.1: Human development and HIV: Two-way linkages (author's construction)



Source: Gupta, Indrani

An extensive literature review of impact studies (Gupta et al 2007) points towards one common theme that runs through all the studies: the close link of the epidemic with low human development, especially poverty. There is now wide agreement among economists that the most important cause of persistent poverty is too little economic growth, especially in the poorest countries. The other reason is persistent inequalities within countries that prevent the poor from participating in whatever little growth occurs (Chen and Ravallion 2000).

There is a very high correlation between consumption poverty and a host of socio-economic variables, including health. At the micro level, inadequate income goes hand-in-hand with poor health, greater illiteracy, low levels of education, lower status of women etc, which essentially amounts to low human development. Thus, growth is a necessary but not sufficient condition for improved human development, and poverty alleviation policies need to focus on a wider range of indicators. Finally, empirically it is often difficult to separate the two-way relationship between low human development and the factors that facilitate the rapid spread of HIV, and as Figure 2.1 indicates, there is a link between the two, which needs to be acknowledged by policymakers.

Recent UNAIDS estimates (UNAIDS and WHO 2007) indicate that 8.6 million people were living with HIV and AIDS in Asia in 2006. Different countries of the region are at different stages of the epidemic. Cambodia, Myanmar and Thailand have high prevalence rates. However, the aggregate numbers hide more than they reveal. Firstly, a small increase in the prevalence rate in populous countries will translate into large absolute numbers. For example, India and the People's Republic of China account for most of Asia's infected cases due to their large populations. Secondly, while overall prevalence may be low, many of these countries have nascent epidemics in specific groups, where infection rates are very high.

The major mode of HIV transmission is through unprotected sex. This, as well as other modes like injecting drug use and infected blood supply, is closely correlated with low human development. There are many reasons which force women into sex work – and poverty is a key determinant. Lower human development also makes women unable to ensure safer sexual behaviour from their partners. This could also be a reason why youth and adults become dependent on drugs, individuals cannot access safe blood (which is costlier) and people migrate for employment. Low human development and its resultant lack of socio-economic empowerment also makes people more vulnerable to discrimination – whether based on caste, gender, sexual preference, or religious beliefs because they have lesser power to negotiate. Finally, the socio-economic impact of HIV is felt most strongly by the poor.

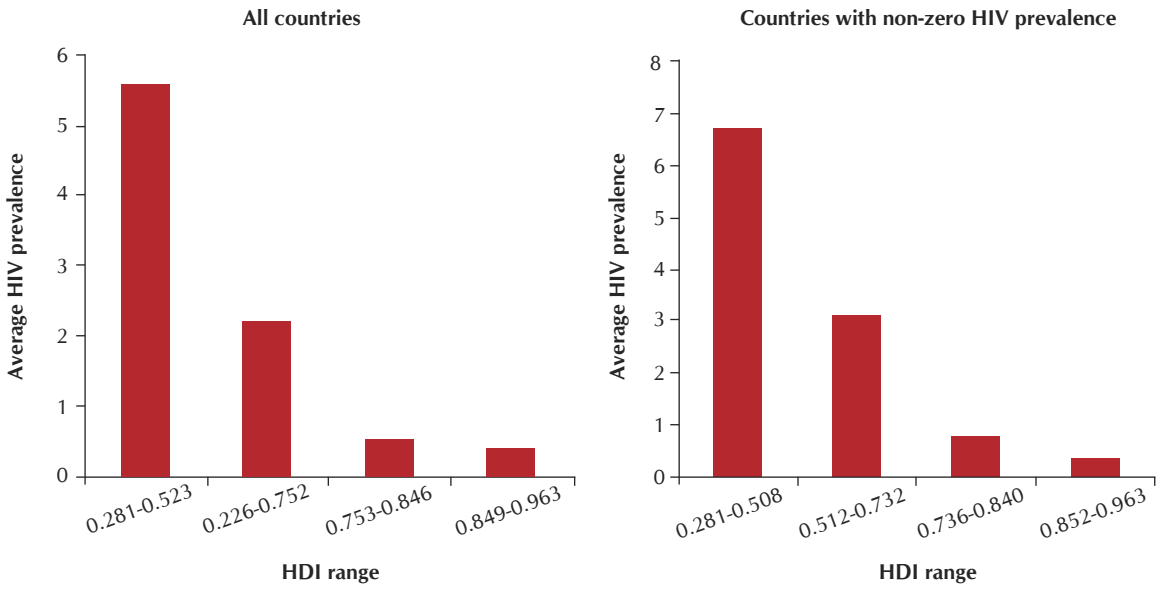
Most importantly, low human development inhibits access to services and information such as preventive messages on behaviour change, which are essential to prevention and control strategies across countries.

All these variables are more adverse in the poorest countries and among the poorest people within nations. Figure 2.2 succinctly brings out the relationship between human development indicators and HIV. The Human Development Index brought out by UNDP has been divided into four quartiles and plotted against the average HIV prevalence for (a) all countries, and (b) countries with non-zero prevalence. Both the graphs indicate clearly that there is a very high negative correlation between HDI and HIV prevalence: HIV prevalence is lower on an average in countries with higher HDI and vice versa.

The presence of significant poverty and large groups of population with low human development make countries and populations within countries vulnerable to HIV (see for example Piot et al 2007, UNICEF 2007, Kristensen 2007). A study of 72 developing countries, done by Martha Ainsworth, Mead Over and others for the World Bank in 1997, showed that low incomes, high inequality, high ratio of urban males to females and significant male-female literacy gaps all contributed significantly to the spread of HIV levels (World Bank 1999).

It is thus clear that poverty – defined in its broadest sense as a lack of human development – is the main factor that brings together policies on prevention and

Figure 2.2: Human development index and HIV: A comparison



control on the one hand, and impact alleviation on the other. The susceptibility of populations in countries to HIV, and the subsequent ability to cope with the impact is closely correlated to socio-economic factors. Anti-poverty and social welfare programmes that alleviate human development status are one of the best ways to reduce both the spread of the virus and its subsequent impact by improving access to key services, providing equal opportunities and choices. The *Regional Human Development Report on South Asia* (UNDP 2003) clearly states that "given the early stage of the epidemic in South Asia, it is important to address the structural factors such as poverty and livelihood, gender and human rights, for effective prevention, care and support. In order to do this, it is essential to get the epidemic out of the `public health' box and address it as a mainstream development issue."

There is consensus that low human development can be a factor in the spread of HIV, and behaviour patterns of individuals in countries with better human development can play a key role in deciding the course of the epidemic. This is immediately obvious for women, who do not have the power to negotiate safe sex, and cuts across social and economic classes. A poor or a rich woman may be equally incapable of negotiating space in a male-dominated society. Some of the more recent studies have argued that it is not only poverty that is fuelling the epidemic, but also the risky sexual behaviours of the richer sections of society. The study by Gillespie et al (2007) suggests the presence of a "weak positive relationship between national wealth and HIV prevalence across countries in sub-Saharan Africa". It also highlights the fact that richer individuals living in urban areas tend to have more mobility and are more likely to engage in risky behaviour, including having sex with multiple partners.

A relevant paper in the present context that looked at the links between development and HIV prevalence found that countries need to reach a threshold level of development in order for sexual practices to become safer; at lower levels of development, it is likely that even rich individuals will practice unsafe sex, since most others are doing that as well (Clark and Vencatachellum 2003[3]). The authors contend that if the production technology of an economy is such that an individual's income depends on the aggregate level of human capital in the economy, and he expects a large proportion of the population to be engaged in unsafe sex, the person is more likely to engage in unsafe sex himself.

This finding is consistent with the hypothesis that a development pattern where wealth is concentrated among a few individuals while a large majority has low income may facilitate a faster spread of HIV. This could happen especially if there are cultural and social practices that promote unsafe sex. The case of Bellary seems to fit well into this model: the development pattern is exacerbating social and economic inequality, while keeping Bellary in a low human development trap.

A key role in such a development pattern is played by the rapid growth in the mining sector. There is now enough evidence from other parts of the world, especially Africa that the mining sector, with its typical workforce profile, could have contributed to the rapid spread of the infection. Furthermore, the socio-cultural and socio-economic environment, such as gender roles and poor housing conditions, are also analysed as contributors to an unfavourable environment for dealing with HIV/AIDS." (Shisana and Letlape 2004). The situation in Bellary is no different as it has a significant presence of backward classes (and women) with very low human development indicators.

[3] http://cirano.qc.ca/pdf/publication/2003s-25.pdf, accessed 1 October 2007.

Methodology

The research for this project was coordinated to a great extent by the Bellary District AIDS Prevention Society (BDAPS), which helped the team organise meetings and workshops and collect primary and secondary data, and information.

The work was initiated with a one-day meeting with the Chief Executive Officer (CEO) of the Zilla Panchayat, Bellary, and his team comprising the Chief Planning Officer (CPO), and representatives from the Departments of Women and Child Development, Health and Education. This was followed by a workshop with key stakeholders. The workshop organised at the office of the Deputy Commissioner had representatives from local government administration and different departments like health, education, commerce, industry, public and private health care providers, and non-governmental organisations (NGOs).

The research team held several rounds of individual meetings with key stakeholders. The data and other information collected were for the state of Karnataka, the district of Bellary and the taluks of Bellary district. The information covered two areas: growth and development, including key human development parameters, and HIV and AIDS.

The research drew heavily on secondary sources of information, the major ones being village-level data on various development parameters obtained from the Samanya Mahiti – Karnataka Village Information System; HIV prevalence/surveillance and client profile data for prevention of parent to child transmission (PPTCT), anti-retroviral treatment (ART), tuberculosis (TB), sexually transmitted diseases (STDs), voluntary counselling and testing centre (VCTC), etc; employment and migration data from various government and non-governmental sources; the report of the High Power Committee for Redressal of Regional Imbalances, or the Nanjundappa Report, for human development indicators at the taluk level; data on mining from the Chief Labour Commissioner, Bellary; data on child labour from the District Labour Office; data on alcohol from the Karnataka State Beverages Corporation Limited and Commissioner of Excise, state and district; baseline and endline reports of the CHARCA project; government and non-governmental sources of information on both human development and HIV and AIDS. These include published and unpublished material as well as information accessed on relevant websites. Significant use was also made of reports in newspapers and journals.

The primary sources included the following quantitative and qualitative data:

- A background paper on updating the indicators for identification of disparities/backwardness of taluks, based on the Nanjundappa Report.

- Results from a month-long household survey of 600 migrant households in three taluks conducted in June 2007, to analyse the magnitude, nature and characteristics of migration.
- A survey among those attending STD clinics, women attending the PPTCT Centre, and individuals attending the Revised National Tuberculosis Control Programme (RNTCP) at hospitals. Data was collected for 30 days in each of the three sites at Bellary and Hospet.
- Nine focus group discussions and key informant interviews held among various groups.
- An initial workshop held in Bellary with key stakeholders.
- Discussions with experts within the government as well as outside.

Information pertaining to the taluks was the most difficult to obtain, and therefore, much of the analysis focuses on the district as a whole.

Quantitative and current data on growth and development were easy to come by given the availability of the Karnataka Human Development Reports for 1999 and 2005, and the Karnataka Development Report (2007). Since quantitative data on many of the relevant parameters, especially for HIV and AIDS, was difficult to obtain, the team relied much more on secondary and qualitative data.

The major government offices in Bangalore and Bellary were contacted. Among the NGOs, MYRADA helped significantly with data and information.

The participants for the focus group discussions/key informant interviews were selected from the following groups: high risk groups like commercial sex workers, men who have sex with men and injecting drug users; adolescents boys and girls (separately); slum dwellers; male and female garment workers; mining workers; boys and girls in hostels; religious groups; agriculture labourers and farmers' associations; steel manufacturing units; panchayati raj institutions; and health care providers.

The broad themes of the focus group discussions were: the state of development in Bellary; economic and social inequality; the status of women, the attitude of men; the role of the mining/garment industry; migration; status of the HIV and AIDS epidemic; high risk behaviour; cultural norms in Bellary; differential behaviour of the rich and poor; treatment-seeking behaviour; and private versus public health providers. A complete list of references for secondary sources is given at the end of this report.

Thus, the research was carried out in an inclusive, rather than an exclusive, manner. The team kept the major stakeholders involved, obtained their views and took their inputs till the end of the research. The high level of appreciation and cooperation that the team received during the research process indicates the timeliness and usefulness of the objectives of the report. It is, therefore, hoped

that there will be a collective ownership and willingness to put the results to good use as well.

Limitations

Since the focus of the research was the district, there were constraints on the type of data and information that could be accessed.

- While economic inequality and income distribution are central to the discussion related to Bellary, relevant data was not available, making the discussion dependent on non-quantitative information.
- Taluk-level data was not available for key HIV-related indicators like prevalence and deaths. In fact, estimated cumulative figures on HIV and AIDS and AIDS-deaths were also not available for the district as a whole.
- Since there was no data available on the profile of those infected or the infections in different sectors of the district, it was not possible to estimate the impact of HIV and AIDS on sectors like education, transport etc.
- While coverage data for public health care interventions were available, it was almost impossible to get similar data from the private sector.
- While it was fairly easy to arrive at figures on employment in legal mines, published documents providing estimates of workers in illegal mines were hard to come by. The analyses, relied heavily on the only report that was prepared by a fact-finding mission, anecdotal evidence available from websites, as well as reports in newspapers and magazines.
- The practice of Devadasis in Bellary was another under-researched area. The report had to rely on academic studies that were sometimes slightly dated and anecdotal evidence available from websites, as well as journalistic reports.
- There was no direct evidence or research on governance in Bellary. The report relied on indirect indicators of governance, which is central to effective policymaking.

Given these constraints, the analysis in the report has been made on the basis of existing evidence and opinions to fill gaps in the quantitative data.

Karnataka and Bellary – An Overview

Karnataka is one of the four southern states in India. It was formed in 1956, and now has 27 revenue districts. Apart from being rich in flora and fauna, the state has abundant mineral reserves and the country's largest gold deposits.

Population

According to the 2001 Census, Karnataka has a population of 53 million (27 million males, 26 million females) and is the ninth largest state in India. Between 1991 and 2001 it experienced a decadal population growth rate of 17.5 percent. The overall sex ratio in the state improved from 960 in 1991 to 965 in 2001; however, the child sex ratio (0-6 years) declined drastically from 960 in 1991 to 946 in 2001.

Sixty-six percent of the state's population lives in rural areas. The proportion of scheduled caste (SC) and scheduled tribe (ST) population in the state is 16 percent and 7 percent respectively. The state has an overall literacy rate of 67 percent. However, the gap in terms of literacy rates of men and women is 19 percentage points (76 percent literate males compared to 57 percent of literate females).

Economy[1]

Karnataka had a gross state domestic product (GSDP) of Rs. 1940.09 billion ($ 46.19 billion) in the fiscal year 2006-2007. It remains the fastest growing state since the mid-1990s in terms of both GDP and per capita GDP. Karnataka now has the sixth highest per capita GDP among all states, and was ranked third in 2006 in terms of foreign direct investment (FDI) inflows, has less poverty, more employment and less inflation compared to national averages.

Over the years, the primary sector, which accounted for 44 percent of state GDP during 1980-81 (at current prices) fell to 19 percent in 2004-05. There has been a substantial rise in the tertiary sector's share in GDP during the same period. Karnataka has emerged as the leader in the field of information technology (IT) and is the base of some of India's biggest software firms. The share of the secondary sector, on the other hand, increased marginally from 23 percent to 28 percent.

[1] This section is based on 'Karnataka Human Development Report 2005' and Karnataka Wikipedia. http://en.wikipedia.org/wiki/Karnataka#Economy, accessed 15 July 2007.

Currently, close to 56 percent of the workforce in Karnataka is engaged in agriculture and related activities. The state's climatic condition and poor irrigation facilities, however, have made agriculture extremely dependent on the monsoons. Of the 175 taluks in the state, 80 were declared as drought affected by the Department of Revenue (Drought Monitoring Cell 2004), resulting in significant migration. This feature, coupled with the fact that a majority of the workforce is engaged in agriculture, makes Karnataka's development pattern slightly more unstable than would seem otherwise.

Though Karnataka's economic record has been impressive, and seemingly consistent with human development, the benefits have not flowed equally to all the 27 districts. A High Power Committee for the Redressal of Regional Imbalances was constituted in 2000, under the chairmanship of Dr. D.M. Nanjundappa, former Deputy Chairman, State Planning Board, Government of Karnataka. The Nanjundappa report, based on a comprehensive list of 35 indicators of socio-economic development, concluded that while the districts in northeast Karnataka and some districts in northwest Karnataka were underdeveloped, there were districts in south Karnataka that were also doing poorly. Bellary, situated in northeast Karnataka, was ranked eleventh among 20 districts[2] in 1998-99 (GoK 2002).

Bellary

Bellary, a land-locked district, has seven taluks – Bellary, Hadagalli, Hagaribommanahalli (H.B. Halli), Hospet, Siruguppa, Sandur and Kudligi. Harapanahalli taluk, which was earlier in Bellary, was transferred to Davangere district during the re-organisation of the districts in 1997.

Population

The population of Bellary in 2001 was 2.03 million, with the rural population at 65 percent of the total population and SCs and STs at 36.50 percent. The district experienced a decennial population growth rate (1991-2001) of 22 percent, which was five percentage points higher than the state average (17.52 percent). Between 1991 and 2001, the sex ratio improved from 966 to 969, against the state average of 960 and 965. However, the child (0-6 years) sex ratio for the district declined from 956 in 1991 to 947 in 2001. There is not much difference in the infant mortality rate (IMR) between the state and the district (54 and 53 respectively). However, Bellary district's performance in total fertility rate (TFR), at 3.1, is worse than the state average of 2.4[3]. The mean age at marriage for males has come down from 24.6 years in 1998-99 to 24.1 years between 2002 and 2004, while it has gone up by three months for females from 18.5 years to 18.8 years over the same period. However, the figures in both the cases are still lower than the state averages (RHS-RCH 1998-99 and DLHS-RCH 2002-04). The above-seven literacy

[2] These were the number of districts prior to the restructuring of districts in 1997.
[3] Source: GoK 2006 (for IMR) and 'District Level Estimates of Fertility from India's 2001 Census, Christophe Z. Guilmoto, S. Irudaya Rajan (EPW February 16, 2002)' (for TFR).

Table 4.1: Key demographic indicators of Bellary: Comparison across taluks							
Indicators	**Bellary taluk**	**H.B Halli**	**Hadagalli**	**Hospet**	**Kudligi**	**Sandur**	**Siruguppa**
Rural population	308,728	159,886	144,704	153,499	227,633	156,998	168,842
Urban population	316,766	0	23,414	221,450	44,550	34,168	66,502
% of urban to total	50.6	0	13.9	59.1	16.4	17.9	28.3
Decennial population growth rate (1991-2001)	26.3	18.4	14.1	19.8	24	22.2	24.2
Density of population (person/sq km.)	370	164	177	415	168	166	227
Sex ratio (no. of females per 1000 males)	961	980	977	977	955	945	999
Sex ratio (0-6 age group)	940	926	978	955	945	948	947
Literacy rate (population aged 7 years and above)	59.7	58.1	60.3	60.9	59.5	53.4	43.6
% of SC population to total population	16.2	18.7	22.4	20.2	19.2	16.8	19.3
% of ST population to total population	16.3	13.6	7.8	16.1	27.1	27.1	17.9

Source: Karnataka Administrative Atlas, Census of India, 2001

rate in Bellary district in 2001 was 57-69 percent among males and 45 percent among females. Table 4.1 highlights a few demographic indicators at taluk level.

Economy

Agriculture is the major occupation in Bellary, providing livelihood to 67 percent of the labour force, according to the 2001 Census. The net irrigated area is 37 percent of the net sown area, against the state average of 25 percent. Due to the scarcity of rains (below normal for 2001-04) and lack of proper irrigation facilities, agriculture in some of the taluks, particularly the western ones, of the district has been severely affected. In 2004, the Drought Monitoring Cell declared four of the seven taluks (Bellary, H.B. Halli, Hadagalli and Siruguppa) as drought-affected[4].

Bellary is endowed with rich natural resources and metallic and non-metallic mineral deposits. The iron ores of the Bellary-Hospet region are considered to be among the highest grades in the world. The region emerged as one of the key producers of iron ore in the country only after 1999, when the Union Government permitted the private sector to export iron ore and China became the major buyer.

In addition, Bellary has other traditional industries, like textiles, sugar and alcohol. However, despite the abundant mineral reserves, the industry sector as a whole has not picked up. As a result of this skewed development, Bellary remains one of the most backward districts of Karnataka, ranking 18 among 27 districts in terms of human development in 2001 (GoK 2006).

[4] http://dmc.kar.nic.in/data/annual/y04.pdf, accessed 3 May 2007.

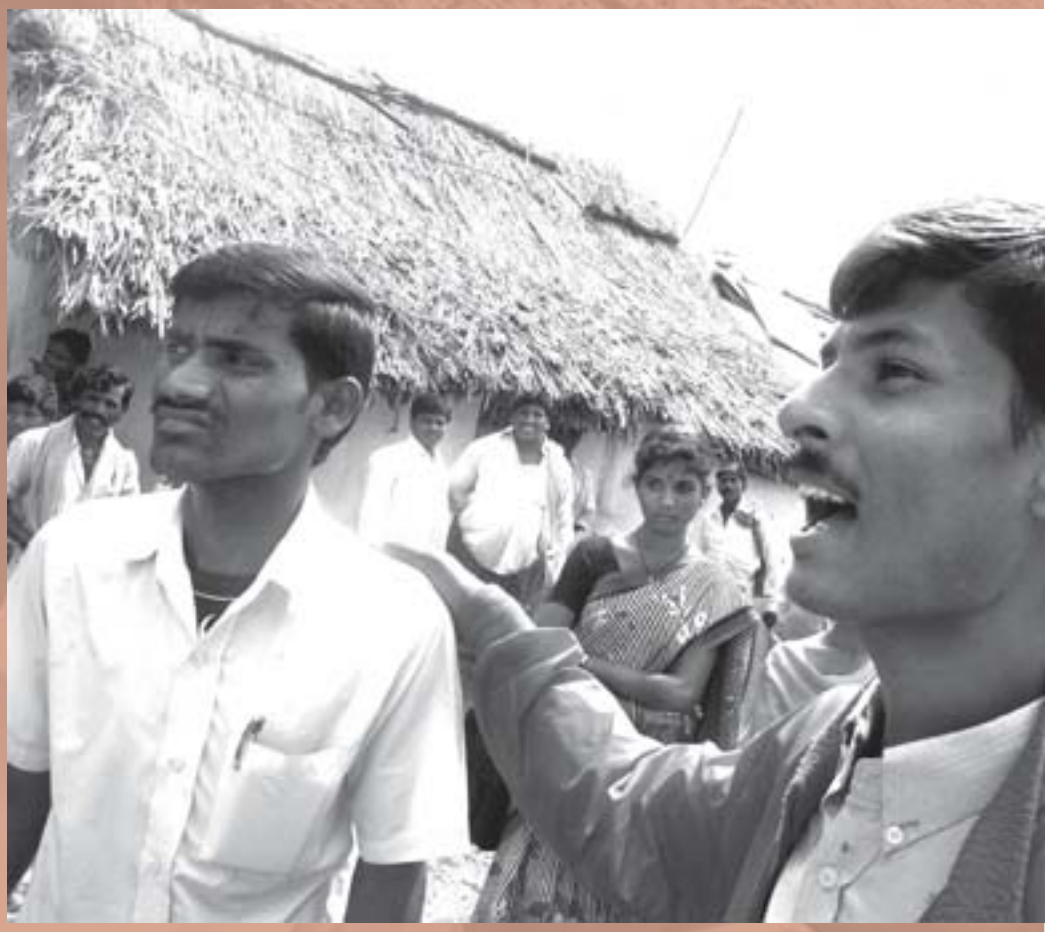
Administrative and Political Set-up[5]

The Revenue and the Rural Development and Panchayati Raj Departments manage the district administration in Bellary. The Rural Development and Panchayati Raj department work to improve the living conditions of the people and bringing about economic and political awareness in the rural areas through various schemes. The department acts as an implementing agency for the Karnataka Panchayati Raj Act of 1993, to bring about democratic decentralisation in the governance of the state's rural areas. It coordinates and monitors the three-tier panchayati raj institutions (PRIs) – Zilla Panchayat, Taluk Panchayat and Gram Panchayat.

The Zilla Panchayat at Bellary was constituted to ensure greater participation of the people in administration and more effective implementation of rural development programmes. It consists of 36 members elected from geographically demarcated constituencies in the rural areas of the district, apart from the member of Parliament, members of State Legislative Assembly and State Legislative Council and the Adhyaksha (presidents) of seven Taluk Panchayats of the district.

Several newspaper reports indicate a significant nexus between profits from mines and political power and indicate that there are many mine-owning politicians in the district. Despite possible political implications, allegations against illegality in the mining sector were severe enough to make the Chief Minister order an enquiry into illegal work in this sector in 2006.

[5] Bellary District Official Website, accessed 15 June 2007.



Economic Growth and Sectoral Distribution

The net state domestic product (NSDP) of Karnataka increased at a compound annual growth rate (CAGR) of 6.4 percent between 1995-96 and 2004-05. It is important to look at the contribution of the three main sectors – primary sector, which involves the process of changing natural resources into primary products and includes activities like agriculture, fishing, forestry, and mining and quarrying; secondary sector, which includes industries like manufacturing and construction that create a finished or usable product; and the tertiary or service sector, which involves the provision of services to businesses as well as final consumers, and includes industries like banking and insurance, transport, retailing, communication, public administration etc. As they mature, economies generally shift away from the primary sector to the secondary sector and finally, the tertiary sector.

The share of the primary sector in Karnataka's economy declined from 35 percent in 1995-96 to around 20 percent in 2004-05, while the share of the tertiary sector increased from 42 percent to 55 percent, indicating the economic progression of a typically developed economy, where the tertiary sector dominates the total output (Figure 5.1a and 5.1b).

Figure 5.1a: Net state domestic product by industry of origin at 1993-94 prices (in Rs.)

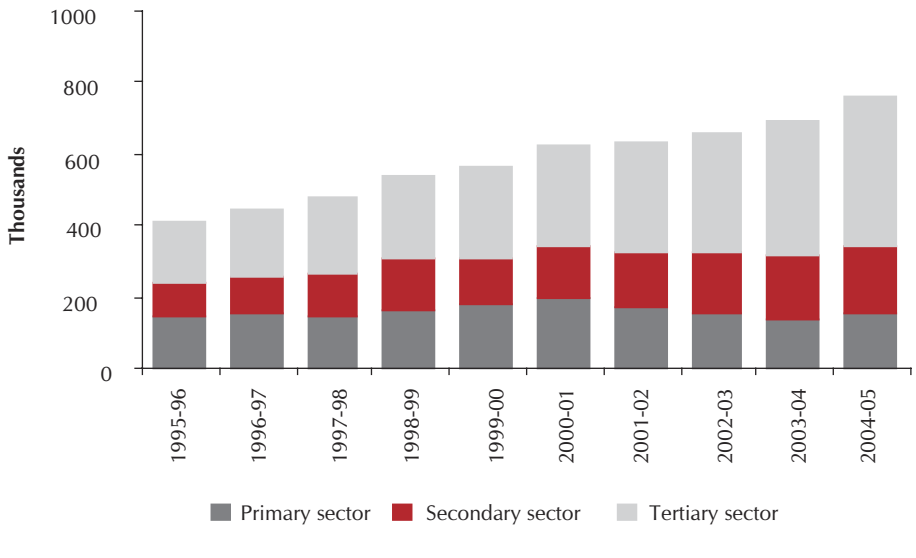
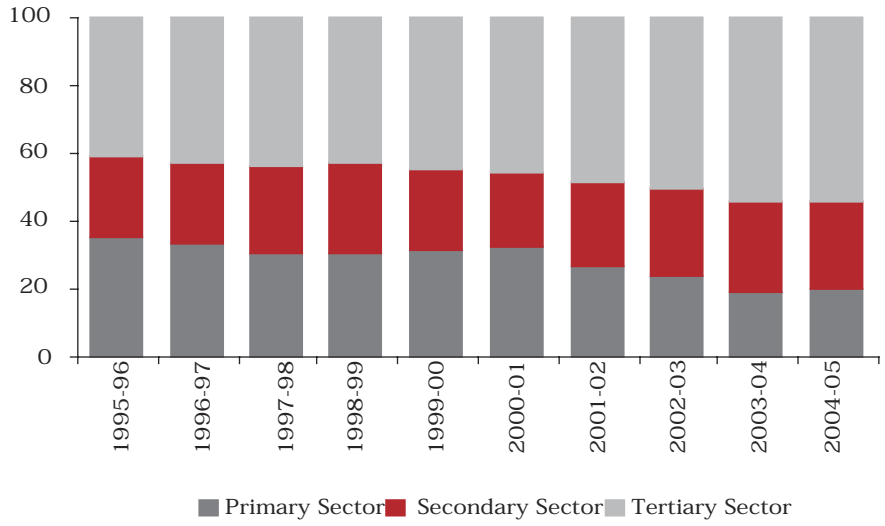
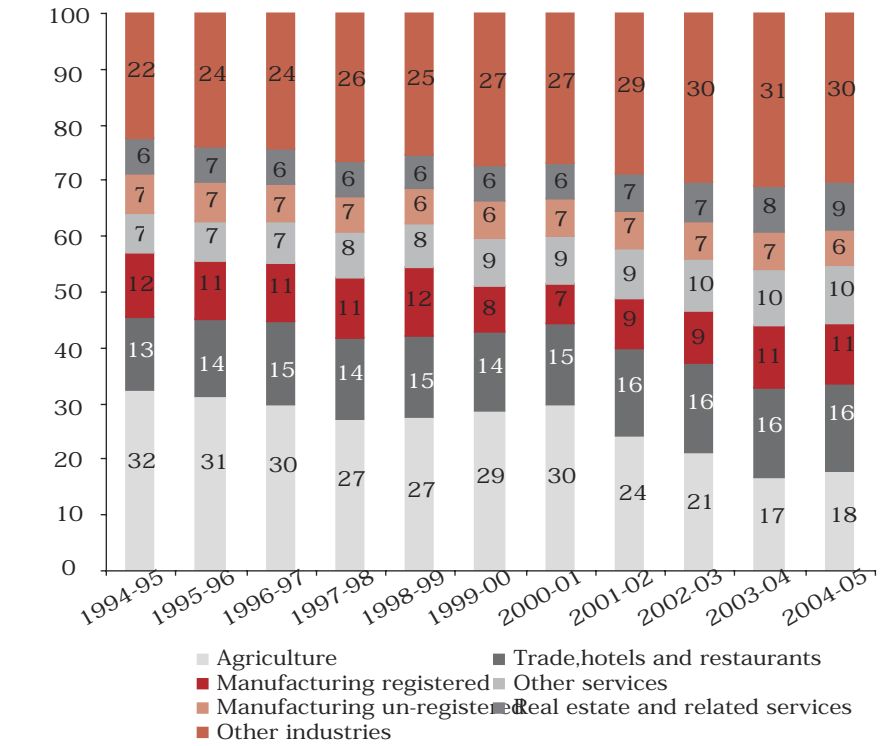


Figure 5.1b: Share of sectors in net state domestic product at 1993-94 prices (in %)



The rate of growth of the tertiary sector (9.5 percent) has been more than ten times that of primary sector (0.8 percent), which has seen negative annual growth in the four years between 1995-96 and 2004-05 (CSO 2007). The relative positions of the top five industries in terms of income remained more or less unchanged over the last decade (Figure 5.2).

Figure 5.2: Share of various industries in state income



Agriculture, with a steadily declining share, still tops the list. The industries that have seen the highest CAGR include communications, railways, and mining and quarrying. The mining and quarrying industry, which plays a large role in Bellary's economy, has seen impressive CAGR of 11.29 percent. However, its share in total income has declined from 0.39 percent in 1995-1996 to 0.27 percent in 2004-05.

The net district domestic product (NDDP) of Bellary in 2003-04 was Rs. 33,032 million, and per capita NDDP was Rs. 15,770. Bellary's share in the NSDP was 4.8 percent in the same period, ranking it fifth among all districts. While the primary and secondary sectors contribute 21.4 percent and 35.4 percent to NDDP respectively, the share of the tertiary sector (43.2 percent) is below the state average of 54 percent, indicating a relatively greater role of non-service industries in Bellary's economic development. Bellary has the highest share of the secondary sector in total income among all the districts in Karnataka (Economic Survey, Karnataka 2004-05). However, industrial development in Bellary has relied more on traditional industries like textiles and not on newer industries requiring high human capital.

One-fourth of Bellary's district income comes from registered manufacturing industries, which includes textiles and steel industries (Figures 5.3 and 5.4). The importance of the allied steel industries in Bellary is also borne out by the share of mining and quarrying, which is at 8.1 percent as compared to 0.86 percent for the whole of Karnataka. However, if the share of illegal mining in the district is taken into consideration, it will result in a much bigger share in district income for mining and quarrying and a relatively smaller share for registered manufacturing.

Figure 5.3: Distribution of income across sectors in Bellary

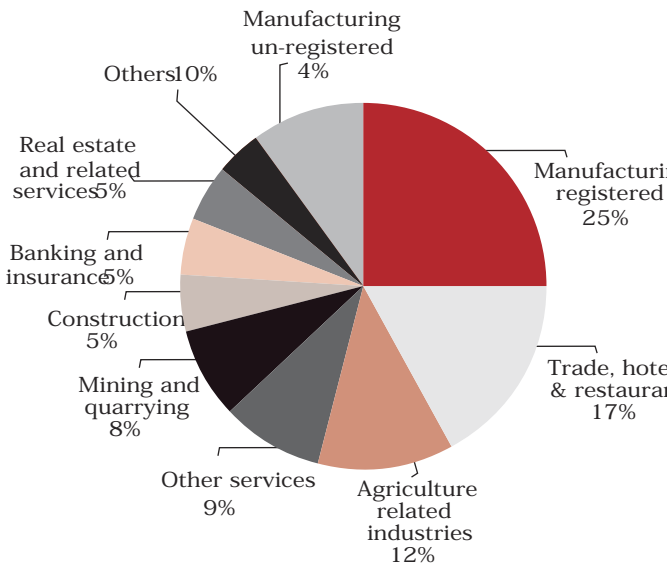
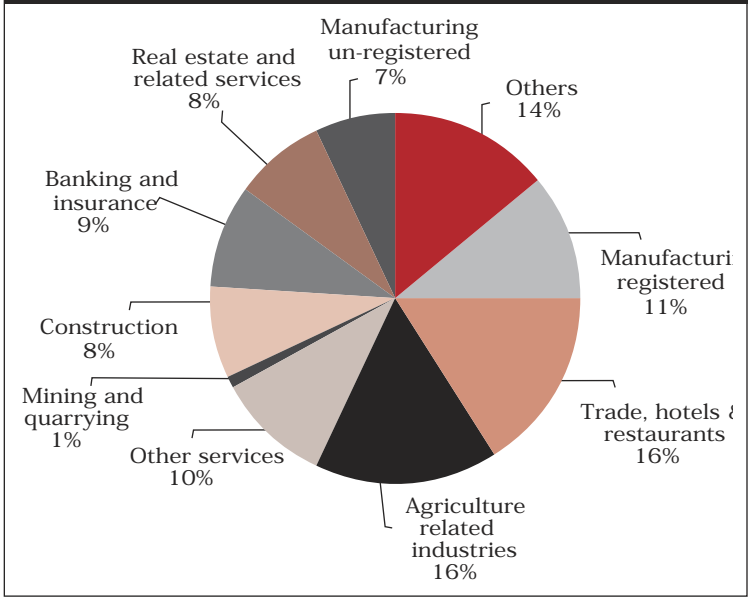


Figure 5.4: Distribution of income across sectors in Karnataka



Per Capita Net District Domestic Product

Table 5.1 indicates the growth in per capita NDDP (at constant prices) for the districts of Karnataka. The per capita NDDP of Bellary increased by 140 percent (CAGR of 6.9 percent) from Rs. 6,591 in 1990-91 to Rs. 15,770 in 2003-04. The district's rank in terms of per capita NDDP also increased from ninth to third making it the third richest district of Karnataka, after Bangalore Urban and Dakshina Kannada.

Table 5.1: Per capita NDDP at constant prices: Comparison of districts in Karnataka

District	1990-91 (in Rs.)	Rank 1990-91	2003-04 (in Rs.)	Rank 2003-04	Growth between 1990-91 & 2003-04	CAGR (in %)
Bangalore Urban	8,739	5	25,578	1	192.7	8.6
Bangalore Rural	5,736	19	13,863	6	141.7	7.0
Bellary	6,591	9	15,770	3	139.3	6.9
Koppal	4,983	25	11,650	11	133.8	6.8
Mysore	6,219	12	12,471	8	100.5	5.5
Dakshina Kannada	12,110	2	24,114	2	99.1	5.4
Dharwad	7,114	6	12,816	7	80.2	4.6
Hassan	6,094	15	10,490	13	72.1	4.3
Haveri	4,428	27	7,549	26	70.5	4.2
Gulbarga	5,003	24	8,524	21	70.4	4.2
Gadag	5,344	23	8,894	18	66.4	4.0
Shimoga	7,087	8	11,693	10	65.0	3.9
Udupi	9,751	3	15,564	4	59.6	3.7
Kolar	5,584	20	8,788	20	57.4	3.5
Uttara Kannada	7,105	7	11,073	12	55.8	3.5
Belgaum	6,351	11	9,880	14	55.6	3.5
Bidar	4,676	26	7,256	27	55.2	3.4
Bagalkot	5,946	18	9,090	17	52.9	3.3
Mandya	6,145	14	9,247	15	50.5	3.2
Davangere	6,201	13	9,197	16	48.3	3.1

Contd.

Contd.

Table 5.1: Per capita NDDP at constant prices: Comparison of districts in Karnataka						
District	**1990-91 (in Rs.)**	**Rank 1990-91**	**2003-04 (in Rs.)**	**Rank 2003-04**	**Growth between 1990-91 & 2003-04**	**CAGR (in %)**
Tumkur	5,562	21	8,146	22	46.5	3.0
Chitradurga	6,077	16	8,842	19	45.5	2.9
Raichur	5,517	22	7,921	24	43.6	2.8
Bijapur	5,968	17	7,930	23	32.9	2.2
Chikmaglur	9,280	4	12,014	9	29.5	2.0
Chamarajnagar	6,364	10	7,585	25	19.2	1.4
Kodagu	14,960	1	14,121	5	-5.6	-0.4

Sources: GoK (2006), GoK (2005)

Bellary has seen a sharp increase in its income only recently. The district income grew by 63 percent between 1998-99 and 2003-04 against 47 percent between 1990-91 and 1998-99. This rise can perhaps be attributed to the opening up of the mining sector to private players in 1999.

Sectoral Patterns of Growth

Table 5.2 indicates the share of the three sectors in the total income of Bellary and Karnataka for three reference periods: 1998-99, 2001-02 and 2003-04.

The secondary sector seems to be contributing more to the overall growth of Bellary, compared to the state as a whole. Its share in Bellary's economy grew from 23 percent in 1998-99 to 35 percent in 2003-04, while the tertiary sector grew more rapidly at the state level. Though the share of the tertiary sector in Bellary's economy fell from 46 percent in 2001-02 to 43 percent in 2003-04, it continues to contribute a large proportion to the district economy, due to the growth of transportation, banking and insurance, and business generated out of trade, hospitality (hotel and restaurant) and communication.

Table 5.3 gives a further breakdown of growth by broad industries during the 1999-2004 period. Registered manufacturing, mining and transport have seen spectacular rates of growth (248, 226 and 190 percent respectively), indicating inter-

Table 5.2: Share (in %) of three sectors for three reference periods				
Region	**Year**	**Primary**	**Secondary**	**Tertiary**
Bellary	1998-99	35.3	23.2	41.5
	2001-02	36.6	17.5	45.9
	2003-04	21.4	35.4	43.2
Karnataka	1998-99	32.2	23.3	44.5
	2001-02	27.8	22.1	50.1
	2003-04	19.4	26.5	54.1

Source: GoK (2006), GoK (2005)

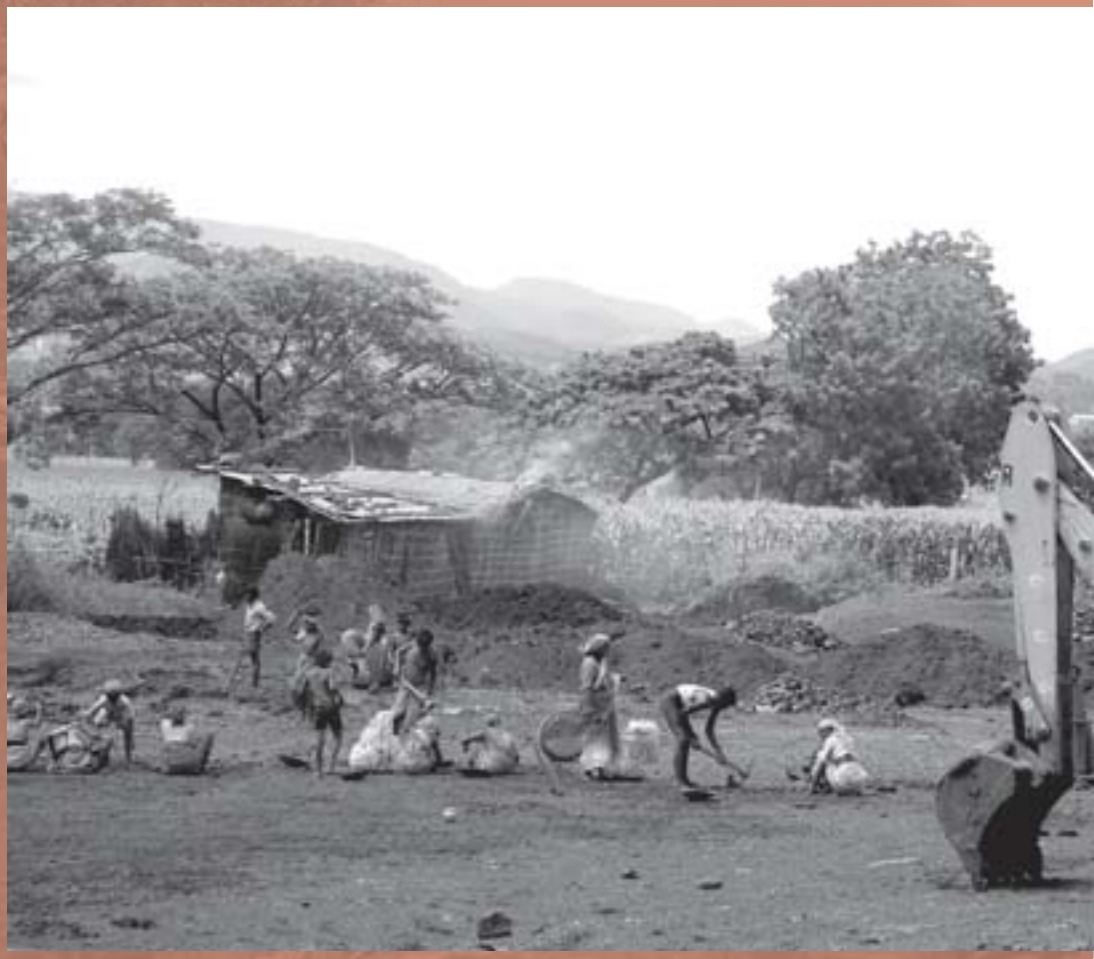
Table 5.3: Distribution and growth of income from various industries in Bellary Rs. in lakh at constant (1993-94 prices)					
Year	**1998-99**	**Proportion 1998-99 (in %)**	**2003-04**	**Proportion 2003-04 (in %)**	**Growth (in %) between 1998-99 & 2003-04**
Manufacturing registered	24,381	11.28	84,948	25.72	248
Mining and quarrying	8,212	3.80	26,805	8.11	226
Transport by other means	3,799	1.76	11,031	3.34	190
Banking and insurance	8,802	4.07	15,911	4.82	81
Trade, hotels & restaurants	32,301	14.95	55,393	16.77	71
Communication	4,713	2.18	7,840	2.37	66
Other services	20,844	9.64	30,602	9.26	47
Storage	74	0.03	108	0.03	46
Real estate and related services	11,211	5.19	15,736	4.76	40
Manufacturing un-registered	9,211	4.26	11,564	3.50	26
Construction	14,000	6.48	17,569	5.32	25
Forestry and logging	3,083	1.43	3,408	1.03	11
Electricity, gas and water supply	2,634	1.22	2,903	0.88	10
Railways	1,167	0.54	1,083	0.33	-7
Public administration	6,762	3.13	4,898	1.48	-28
Agriculture and animal husbandry	64,148	29.68	40,126	12.15	-37
Fishing	778	0.36	393	0.12	-49
Total	**216,120**		**330,318**		**53**

Source: GoK (2005)

linkages among these industries. The share of registered manufacturing doubled from 11 percent to more than 25 percent over the period, whereas agriculture – which had the highest share in total income in 1998-99 – saw a sharp decline of 18 percentage points during the period. The primary sector experienced negative growth rates in areas like agriculture and fishing and it is the mining sub sector that has been containing the rapid decline in its share in total income.

It is often surmised (though no studies exist to substantiate this) that the growth of the many-layered agricultural sector is relatively more equalising than that of the almost bi-polar mining industry, with its mine owners and operators on the one hand, and those who work for them on the other. This type of growth is more likely to lead to a concentration of wealth in a few hands, which is what Bellary has seen in the recent past.

Since the mining sector plays such a pivotal role in Bellary's development, the next chapter analyses in some detail the growth of this sector.



Iron Ore Mining

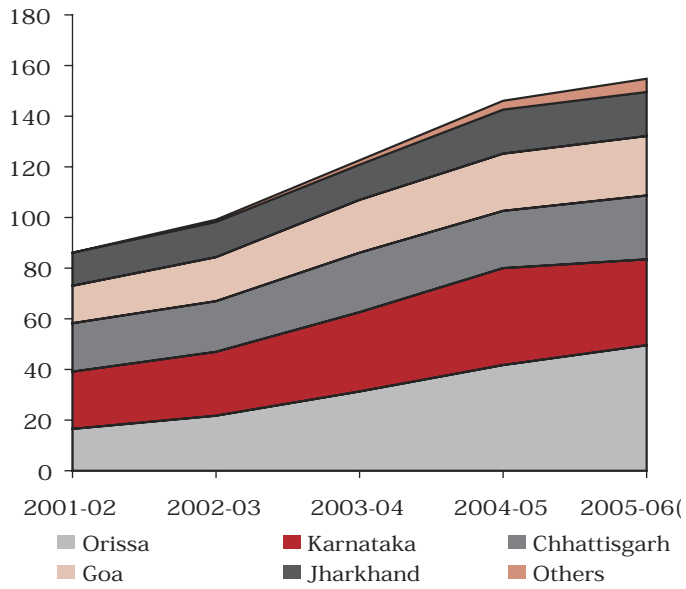
Pig iron produced from iron ore is one of the main raw materials used in steel production. The total iron ore reserves in India have been increasing at 1.75 percent every year on an average and, as of 2005, stand at 25.25 billion tonnes, up from 17.56 billion tonnes in 1980[1]. During the same period, India produced 1.66 billion tonnes of iron ore. India ranks fourth in iron ore production in the world[2].

Karnataka is the richest among the 15 iron-ore resource states and accounts for 41 percent of the total iron ore resource of India (IBM 2006). Since mining is a key factor in Bellary's development, a brief discussion on the role of regulation in the mining sector is given in Box 6.1.

The change in regulation and legislation for the mining sector in India led to a tremendous growth in iron ore production as well as export (Figure 6.2).

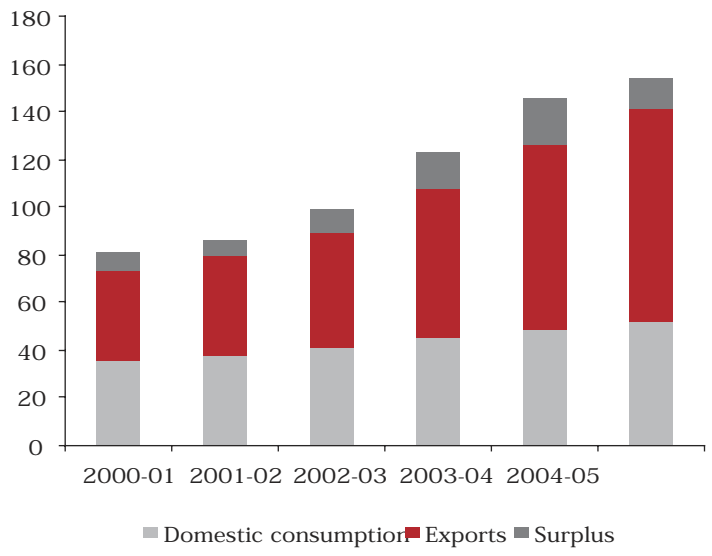
New mines are mainly contributing to the global, rather than the domestic market. China – the world's single largest producer and consumer of steel (Anand 2007) – will continue as a major consumer even beyond the summer Olympics in 2008 in Beijing. India has now become the world's third largest exporter of iron ore, after Australia and Brazil (Chin 2006).

Figure 6.1: Iron ore production in Indian states
(in million tonnes)



[1] http://www.fedmin.com/html/noteiron.pdf. These resources do not include around 1000 million tonnes of haematite iron ore recently discovered in the Kabirdham district of Chhattisgarh.
[2] http://mines.nic.in/imsene.html, accessed 8 August 2007.

Figure 6.2: Distribution of total iron ore production in India (in million tonnes)



Iron Ore and Mining in Bellary

Karnataka has around 9,032.2 million tonnes of iron ore reserves, of which around 1,500 million tonnes are in the Bellary-Hospet region, according to the National Mineral Policy (Planning Commission, 2006). Though Bellary has been producing iron ore for a long time, the number of mining leases for iron ore in the district increased dramatically after the 1999 amendments in regulations

Box 6.1: Role of regulation in mining sector

The first legal framework for regulation and development of mines in independent India was the Mines and Minerals (Regulation and Development) Act, 1948. Mining of major minerals like coal, lignite, mineral oils, iron ore etc. was reserved exclusively for the public sector through the Industrial Policy Resolution, 1956 (IPR). The Mines and Minerals (Regulation and Development) Act, 1957, was a comprehensive legislation for the regulation of mines and development of minerals, applicable to all minerals except mineral oils. Under this Act, state governments were empowered to frame their own rules for mineral concessions for minor minerals. The role and controls of the Central Government over mining were made more stringent through amendments in 1972 and 1986, which brought about a 'regulatory regime' in mining activities.

Thirteen major minerals – including iron ore – were opened up to the private sector through the 'National Mineral Policy', 1993 with the aim of offering a more conducive environment for foreign participation. Amendments in the Mines and Minerals (Regulation and Development) Act were made in 1994 to simplify the grant of concessions. However, the lack of significant private participation till the late nineties, brought forth another amendment in 1999 giving more and exclusive powers to state governments and allowing them to grant and renew licenses and leases, approve mining plan, terminate mining plans and de-reservation of reserved areas.

Source: National Mineral Policy 1993, Ministry of Mines

relating to mining. The leased out land almost doubled, as can be seen from Figure 6.3. A majority of this land (63 percent) as well as leases (68 percent) fall in the Sandur taluk.

As a result of the 1999 reforms, the contribution of Bellary to total iron ore production in India almost doubled from 10.4 percent in 1989-90 to about 20 percent in 2004-05 (Table 6.1). Currently, Bellary and

Figure 6.3: Number of iron ore mining leases and land leased in Bellary

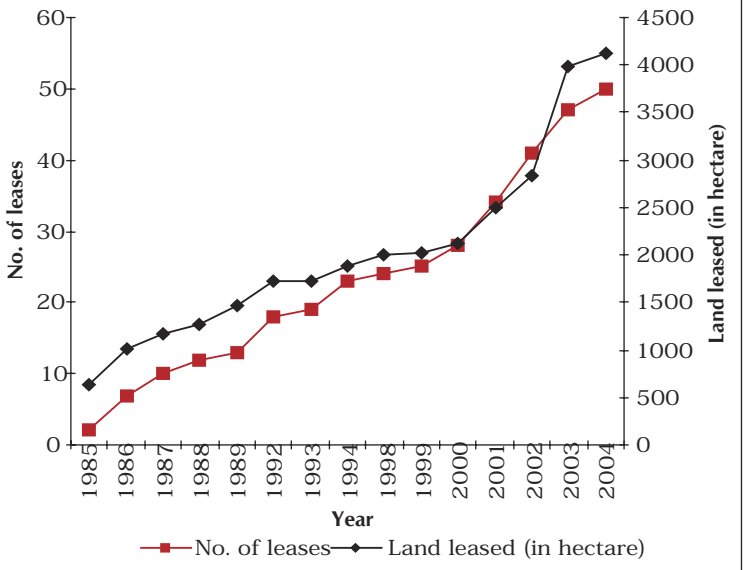


Table 6.1: Iron ore production: Comparison of Bellary, Karnataka and India

Particulars	Production of iron ore (in '000 tonnes)			Growth in %	
	1989-90	1997-98	2004-05	1990-1998	1998-2005
Bellary	5,766	8,985	28,177	56	214
Karnataka	11,439	16,123	37,962	41	135
India	55,437	75,723	145,942	37	93
Bellary as a proportion of India (in %)	10.4	11.9	19.3		

Source: Indian Minerals Yearbook, various years.
Note: 2004-05 figures for Bellary are provisional

Chikmaglur districts together constitute around 90 percent of the total production of Karnataka.

Mining activities in the district are carried out by 50 establishments, with the National Mineral Development Corporation (NMDC) being the only public sector firm. Four[3] of the country's 11 large non-captive iron ore mines (excluding NMDC) in 2004-05 were from the Bellary-Hospet sector (Planning Commission 2006). With the commissioning of the Jindal Vijayanagar Steel Limited (JVSL) – now known as JSW Steel Limited (Upstream)[4] – around 1995, the mining activities in the district have undergone a sea change.

[3] Large non-captive iron ore mines were MSPL Limited, V.S. Lad and Sons, Mysore Minerals Limited and Kariganur Mineral Mining Industry.
[4] http://www.jsw.in/JVSLUS.htm accessed 12 July 2007.

The first impact of a booming industry is felt on employment generation. Bellary has seen dynamic growth in employment in mines, as well as in ancillary activities like construction, trade, transport etc. The drought that gripped the state (mostly the entire northern part of Karnataka) for three consecutive years saw thousands of agricultural labourers from villages in the state as well as from the neighbouring states of Andhra Pradesh, Tamil Nadu and Maharashtra take up employment in the mines[5].

There is also large-scale illegal mining in the district. While there are no estimates on the workforce employed in these illegal mines, a fact-finding report on child labour, *Our Mining Children*, gives some insights into the employment situation (Mines, Minerals and People[6] or mm&P, 2005). The report, based on the private mining sites in Hospet and Sandur area, estimates that 400,000 casual labourers are working in the iron ore mines in Bellary district. Of these, 50 percent[7,8] are child labourers, mainly girls, and very young boys, some of whom were only five years of age. Even the transportation sector employs at least 1.5 lakh casual workers in the three taluks of Bellary, Hospet and Sandur, most of whom are young boys.

Most of the workers, especially those in the illegal mines, are migrant labourers working on a daily wage basis. Miners prefer them to local labourers, mainly to avoid giving adequate perks and benefits. These casual labourers, including women and children, work in extremely hazardous situations and live in dismal conditions[9,10,11] mostly in plastic tents, which are not large enough for an entire family. They do not have access to even the most basic needs like drinking water and sanitation[12] let alone other social and medical benefits. With the lack of any kind of social cohesion among these workers, they become highly vulnerable to

[5] http://bellary.com/ironoreexport.htm, accessed 1 August 2007.

[6] 'Mines, Minerals & People' (mm&P) is a national alliance of communities and workers fighting the exploitation in the mining industry. The alliance works with more than 150 local organisations, people's movements and workers' unions in India. The alliance works for the issues concerning land and resource rights, labour rights and environment issues at a national level through research, campaign support, lobbying, policy level dialogue and legal and media advocacy.

[7] The fact-finding team observed that most of the children – who have no prescribed working hours or wages - were 'forced' into all forms of mining activities like digging, breaking stones, sieving, loading, dumping, transporting and processing activities of iron ore mining without adequate safety equipment, making them susceptible to injuries and accidents, apart from chronic mining-induced health problems.

[8] http://www.deccanherald.com/Content/Jun212007/metrothurs200706208478.asp.

[9] http://bellary.com/ironoreexport.htm viewed on July 12, 2007.

[10] http://www.hinduonnet.com/fline/fl2311/stories/20060616002104300.htm.

[11] http://www.hindu.com/2007/05/21/stories/2007052107810300.htm.

[12] http://www.hinduonnet.com/fline/fl2311/stories/20060616004904600.htm.

Table 6.2: Classification of mining activity in Bellary				
Particulars	**Legal mining**	**Illegal mining**		
Classification of mining activities	Approved land Registered miner Declared quantity	Approved land Registered miner Undeclared quantity	Non-approved land Registered miner Undeclared quantity	Non-approved land Non-registered miner Undeclared quantity
Estimated proportion of iron ore production (in %)	40-45	0-5	5-10	35-40

Source: Author's estimation

social, economic and sexual exploitation by traders, truck drivers, miners and contractors. Women and children are the worst affected, both within and outside the family. The sudden emergence of STD clinics around Hospet and Bellary bears out the possibility of stepped up sexual activity, which, in turn, makes the mining sector a prime catalyst in the spread of HIV in this region (Anonymous 2006, mm&P 2005).

Illegal Mining in Bellary

Illegal mining is a very important feature of mining in and around Bellary. Not only is mining taking place without a valid lease, there are instances where lease holders are actively involved in extracting undeclared minerals outside their leased limit (Chin 2006). The framework in Table 6.2 helps understand the gamut of mining activities in the district.

Approved land is land for which prior permission has been taken from the government to carry out excavation activity. Here it is referred to as a piece of land that has been leased out by the government. Any land outside the purview of this can be labelled as non-approved land. A registered miner is an individual, a group or a unit who has obtained permission for carrying out mining in the leased-out land and should declare the quantity excavated. Those who are not registered to carry out mining are termed as non-registered miners. Not all registered miners declare the correct excavated quantity of iron ore to the government (Chin 2006). The quantity of iron ore produced by mining units and declared to the government agencies is classified as declared quantity, otherwise it is assumed undeclared.

The first column in Table 6.2 describes the combination in which mining can be termed as legal. The three shaded columns explain the various combinations of illegal mining, with the intensity of shades demonstrating the level of difficulty in curbing illegal mining. For example, it might be relatively easier to put a check on undeclared quantity of iron ore excavated by a registered miner in an approved land, rather than tracking the non-registered miners on non-approved land. Based on different sources, it seems close to 55 percent of the mining in Bellary is illegal,

about 35-40 percent by non-registered miners alone. Some put the estimate even higher, and contest that more than 80 percent of mining is illegal[13].

Illegal mining also leads to other undesirable economic and social consequences. Mining in an unscientific manner results in environmental and ecological degradation due to felling of trees and destruction of forest cover. This affects the fauna of the area, the safety, health and other social welfare measures of workers, increases the number of anti-social elements, profiteering by miners without extending any obligations to the society (Planning Commission 2006), and tax evasion[14], depriving the government of revenue and giving rise to more inequality (Chin 2006).

High level of mining, combined with illegal and unlawful mining practices, has already started showing its impact in the form of potholed roads, environmental degradation and loss to human health. Every day, thousands of trucks roll out from the mining belts of Bellary, Hospet and Sandur carrying more than the legal limits of materials, which affects the condition of the roads. A study conducted by Karnataka State Remote Sensing Applications Centre (KSRSAC) (January 2003) in Bellary, Hospet and Sandur taluks reveals large-scale deposits of mine dust on roads along agricultural land, causing loss of topsoil and thus bringing down the agricultural yield. The deposits of silt and presence of fine minerals in water bodies near the mining areas can create serious health problems for those who are dependent on this water source. In addition, there is high concentration of fluoride and chloride in ground water in low mining areas. Respiratory disorders, tuberculosis and skin disorders are at an all time high in the district and women and child labourers are the worst affected (GoK 2004).

Two newspaper reports mentioned that the government collected fines from several mine owners and contractors for illegal mining to the tune of Rs. 3.38 crore in 2005-06 and Rs. 300 crore during 2006-07 (The Hindu 2006b, 2007). Despite the claims by the district administration and state government authorities, not much of a dent seems to have been made in illegal mining (The Times of India 2006).

Mining and Development in Bellary

Most of the iron ore from Bellary is exported, due to a paucity of end users like steel industry in the district. The development of these industries has been constrained due to shortage of water and power (Planning Commission 2006), and lack of proper planning. The only way to allow the district to benefit from its abundant mineral reserves is to set up more plants or to allow private business houses to do so by providing better infrastructure such as water, power, road and rail networks. The state government has reiterated the need for more effective

[13] http://bellary.com/ironoreexport.htm, accessed 23 July 2007.
[14] `How iron disappears in Bellary'. Monday, September 11, 2006. This article can be viewed from http://content.msn.co.in/News/Business/BusinessBS_110906_1008.htm, accessed 24 May 2007.

use of the resources by establishing more steel plants (by providing them proper infrastructure) and ensuring that the entire district gets to benefit from the wealth of mining (Mehu 2006).

The inability of the district to absorb a major part of the ore produced has made the development pattern of the state akin to that in countries that suffered from the phenomenon of "Dutch Disease", where exploitation of natural resources is accompanied by a development pattern which is detrimental to the local economy. While the Dutch Disease is associated with trading and effects of discovery of natural resources on the exchange rate, the shift of "resources away from manufacturing sectors that generate 'learning by doing' might jeopardize a country's long-term growth potential by choking off an important source of human capital development." (Ebrahim-Zadeh 2003). The natural minerals of an area are mined to make quick profit and are not used in ancillary and other industries that require skilled workers. Local processing of minerals has payoffs in terms of generating quality employment that is both sustainable and consistent with human development of a region.

Thus, the mining industry has affected development in Bellary in various ways:

- Dependence on extraction and export of iron has meant that the primary sector – rather than the secondary sector – has played a predominant role in the district.
- The growth in the mining sector has also accelerated the growth of sectors like transport, construction etc, with a concomitant growth in the informal sector, which operates on a low-human capital level.
- Demand for skilled and trained labour has been much less than what it would have been if ancillary industries had developed more robustly.
- The huge demand for unskilled or semi-skilled workers in iron extraction has resulted in rapid labour movement and migration from neighbouring districts.
- Since such primary sector activities do not either require or develop educated and skilled workers, Bellary has not seen improvements in human development parameters.
- The presence of almost an equal number of illegal mines implies that the magnitude of these problems is almost twice in scale than would otherwise have been the case.
- While there is not much difference between legal and illegal mines in their capacity to develop human capital, illegal mines are not bound by any laws or regulations relating to human rights and welfare, since they do not exist on paper.

The effect of all this has been the creation of a huge pool of temporary and migrant labour, many of whom do not enjoy basic human rights. It has also led to exploitation of children and women, and created a huge pool of individuals who are highly vulnerable to abuse, infections and diseases. Inadequate labour practices, and exploitation in turn are closely linked with HIV. A report initiated

by the Commission for Africa analyses the situation in several African countries and concludes that "the negative labour practices used in mining, construction and transport industries and domestic work, coupled with apartheid policies that barred rural Africans from acquiring a home in urban areas have contributed significantly to the spread of HIV.

These features, superimposed on traditional cultural practices like the Devadasi system, play a key role in the context of the HIV and AIDS epidemic by creating a pool of individuals with significant vulnerabilities, while, at the same time, keeping Bellary in a low human development equilibrium.

Employment

The level, composition as well as growth in employment opportunities are critical components in the overall economic development of a region. Employment indicators often also reflect the economic attainment and, hence, the level of well-being of an individual (Planning Commission 2002).

Workforce Participation

In a developing economy, it is natural for the magnitude of the workforce to change with the changing population. While workforce participation rate (WPR) in India increased from 37 percent in 1991 to 39 percent in 2001 and from 42 percent to 45 percent in the same period in Karnataka, it remained unchanged in Bellary at 45 percent, indicating that employment generation in the district was not commensurate with the growth in population (Census 1991 and 2001).

Table 7.1 compares the WPR for male and female workers and the corresponding decadal growth for Bellary, Karnataka and India in 1991 and 2001. During both the reference periods, the proportion of female workers to total population in Bellary was higher than the state and national averages. However, growth in female WPR in Bellary (1 percent) was much lower than in Karnataka (9 percent) and India (16 percent), indicating fewer women joining the workforce. The Karnataka HDR also finds a trend towards feminisation of poverty in the state, with an increasing number of women among casual workers, increasing dependence of women on agriculture and rising male-female wage differentials.

The rural-urban distribution of employment in Bellary is in tune with the state average – about half the population in rural areas and one-third in urban areas.

The Census 2001 classifies workers into main and marginal workers, and four sub-categories – cultivators, agricultural labourers, workers in household industry and other workers. Those who have worked for 183 days (six months) or more during

Table 7.1: Work participation rate: Proportion of workers to total population (in %)

Site	Male			Female		
	1991	2001	Decadal growth	1991	2001	Decadal growth
Bellary	53.6	54.6	1.9	35.5	35.9	1.1
Karnataka	54.1	56.6	4.6	29.4	32	8.8
India*	51.5	51.9	0.8	22.2	25.68	15.7

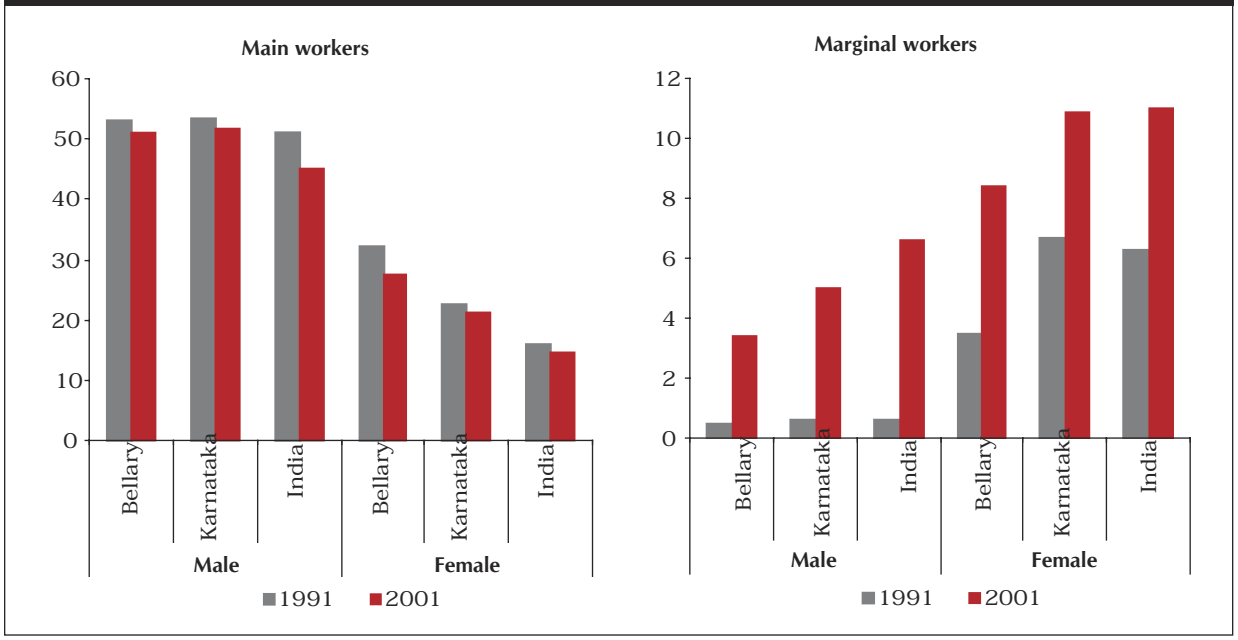
Source: Primary Census Abstract, Census of India 1991 and 2001
*Excludes figures for Jammu and Kashmir where the 1991 Census could not be conducted due to disturbed conditions

the reference period – even though in broken spells and in different occupations – are referred to as main workers, while those who have worked for less than 183 days in a year are marginal workers.

As Figure 7.1 shows, there was a small decline in the proportion of main workers across gender in Bellary, Karnataka and India between 1991 and 2001. There was also a significant increase in the proportion of marginal workers, particularly among female workers, in Bellary. This implies that an increasing proportion of people have less job security. While data from Bellary is not available to corroborate this claim, the marginal workers seem to be prime candidates for migration and mobility. The fact that the mining sector has employed many unskilled workers is consistent with the official data on employment from Bellary.

Agriculture continues to be the mainstay of the district, employing 66 percent of the total workers – 27 percent as cultivators and 39 percent as agricultural labourers. This is higher than the state average of 56 percent and national average of 58 percent. Female workers constitute the bulk of the agricultural workforce (80 percent against 57 percent males), and Bellary is among the top ten districts in Karnataka in terms of employment of female workers as agricultural labourers – 60 percent compared to 43 percent in the state as a whole (GoK 2006). The data collected from the Labour Office in Bellary also indicates that 88 percent of total workers under notified industries in Bellary district belonged to agriculture. This pattern of employment makes it likely that Bellary has significant male-female economic inequality as well as inequality among different occupation types.

Figure 7.1: Proportion of main and marginal workers: A comparison



Source: Primary Census Abstract, Census of India 1991 & 2001

Figure 7.2: Distribution of workers in medium and large scale establishments – 2005-06

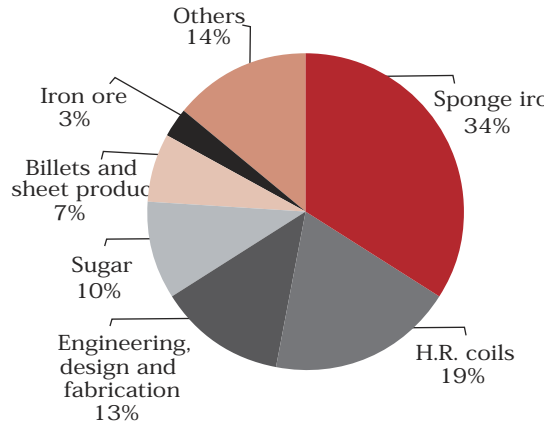


Figure 7.3: Trend of employment at JSW

A total of 48 registered units under large and medium scale industries employ around 7,200 employees. About half of the employment is in iron and related industries; around one-third are engaged in 27 different sponge iron industries and one-fifth in the production of hot-rolled iron coils that are manufactured in Jindal Vijayanagar Steel Limited (now known as Jindal Steel Works Ltd. or JSW) (Figure 7.2). There appeared to be an increasing trend in JSW towards hiring contractual employees. The firm had regular employees till 2002-03 and started hiring contractual workers since then. Figure 7.3 shows that since 2006-07, JSW had more contractual labourers (around 3,500) than regular employees (around 3,000). This could be true of many other medium and large-scale industries, but cannot be verified due to lack of data.

Data collected from the District Industries Centre, Bellary, indicates that one-fifth of about 2,500 people employed in small-scale industries in 2005-06, were in textile related industries. In addition to the small scale textile industries, the Garment Manufacturing Association estimates that around 20,000 people are employed through 700-800 micro units having an in-house set-up. A majority of these workers are women, not educated and from within the district. Work has begun on a Textile Park, with state of the art manufacturing facilities, which will be operational in late 2008.

The Regional Labour Commissioner (Central) at Bellary reports 50 functional mines[1] in the district, and employment of only around 8,000, mainly regular male workers as of August 2006. However, this office also endorsed the significant presence of casual and daily wage labourers, as mentioned in the mm&P report.

[1] Of the 50 mines in Bellary that are listed with this office, employment figures are available only for 46.

Child Workforce Participation Rate

The child workforce participation rate (CWPR) is defined as the number of children in the 5-14 years age group who are in the workforce to the total number of children in the same cohort.

According to the 2001 Census, at 13 percent, the CWPR in Bellary was much higher than the state average of 7 percent and national average of 5 percent. It was among the four districts (along with Koppal, Raichur and Gulbarga) where more than 10 percent of the 5-14 years age group population was in the workforce. Table 7.2 shows that while there are more male child workers in urban areas, female child workers are more prevalent in rural areas. Due to paucity of data, it is not possible to see the distribution of child workforce by categories of work; however, various pieces of evidence indicate that most of them might have been employed in mining-related activities as well as in the transport sector (mm&P 2005).

Table 7.2: Child workforce participation rate (5-14 years) in 2001

Particulars		Persons	Males	Females
Rural	Bellary	15.49	13.92	17.12
	Karnataka	8.57	8.56	8.57
	India	5.94	5.94	5.95
Urban	Bellary	5.78	6.86	4.63
	Karnataka	3.31	4.32	2.24
	India	2.12	2.69	1.49

Source: Census of India 2001

According to the office of Central Labour Commissioner, as of March 2007, only 2,502 child labourers were identified in various hazardous and non-hazardous occupations/processes in the district. Of these, 80 percent were in non-hazardous occupations, including 40 percent in agriculture. This is in contrast to the 2001 Census figures on CWPR in Bellary, which indicates that 13 percent of children aged 5-14 are in the workforce. From the various sources, it does appear that Bellary has a serious problem of child labour, throwing up issues relating to their vulnerability to exploitation and disease, as also the weak status of enforcement in the district.

Results from the Migrant Survey

Six hundred migrant households were interviewed in Hospet, Bellary and H.B. Halli, through a structured questionnaire. The aim was to look at the causes and nature of migration for these workers. Some of the results are as follows:

- Around one-third of the surveyed population belonged to the SC/ST category, with another 44 percent comprising other backward class (OBC). This is consistent with the composition of the district population itself, but indicates that vulnerable sections are most likely to migrate.
- The family composition of the migrant households indicates that about one-third of the members are minors, below 15 years of age. This fact is important to bear in mind while discussing vulnerable population groups.
- Around half of the respondents were illiterate, and only one-fourth had studied till high school or beyond. This is also true of the family members.

- One-fifth of the surveyed migrants stated that they had migrated from other states, and a little more than one-third from other districts of Karnataka. Hospet had the highest proportion (58 percent) of migrants coming from Bellary taluk itself.
- Thirty-four percent of the respondents and 20 percent of the family members were stated to be working in the mining sector. The other important categories were agriculture and industry.
- The type of contract indicated insecure arrangements, with 28 percent stating they were daily wage employees, 16 percent on contract wages and 26 percent on piece-rate work.
- Over 60 percent of the migrants had migrated more than two years before the survey, and do not seem to have had a problem in finding a job.
- Most migrants prefer migrating with their families.
- Thirty-three percent of the migrants were staying in temporary tenements. Another 37 percent said they were in rented accommodation. Only 13 percent said they owned a house.
- Reported illnesses were very few, and private health providers were the preferred option.

Overall, the migrant survey indicated that there was an incentive to migrate to Bellary since getting jobs was not a problem, but most of the migrants had low job security. The socio-economic profile of the migrants indicated that lower caste and illiterate, as well as less educated individuals are most likely to migrate, and they prefer to bring their families with them. Finally, a significant percentage of the migrants and their families end up in the mining sector, and also work in mining-related sectors like transportation and steel.

These findings are consistent with a UNDP report on migration (UNDP 2007), which analysed a sample of 300 migrant households each in the states of Uttar Pradesh and Maharashtra respectively. Among other findings, the results indicate significant mobility as well as high vulnerability of women in the migrant households. Since the results are relevant for the analysis of migration in any setting, some relevant findings are mentioned below:

- Men continue to be the decision makers even after they leave, and women do not automatically get empowered because the head of the household is absent.
- Twenty percent of migrant men were reported to have engaged in sexual activities with people other than their spouses when away from home.
- Twelve percent of the men and 83 percent of the women indicated that their spouses are their only sexual partners. However, of those who had sex either with their spouses or with other people, only 46 percent of men and 59 percent of women reported using protection in the recent past. This finding highlights the vulnerability of the migrants and their spouses to STIs and HIV and AIDS, despite high knowledge about condoms.

The results from the focus group discussions on employment opportunities corroborate these various findings. The consensus from the discussions was that employment opportunities in the district have increased tremendously, a trend which the participants attributed to the unprecedented growth of mining activities over the last ten years.

This expansion of mining activities, according to the group, has prompted the influx of labourers not only from within the state and its neighbours but also from far-off states like Bihar and Jharkhand. The migrants are said to mainly head for the mining areas. The garment industry, on the other hand, does not seem to have huge numbers of migrants, and continues to depend on traditional local workers, according to the participants.

In summary, official employment statistics in Bellary do not indicate a significant rise in employment. In official records, agriculture remains the major source of employment, though the category "other" seems to be increasing. From various other sources, it is very clear that Bellary has seen an explosion in informal and unorganised sector employment, as also employment of women and children. Migrant workers have probably been the mainstay of the employment growth, both official and unofficial. The low socio-economic profile of the migrant workers as well as evidence on female and child labour point to the greater vulnerability of the labour force to disease and poverty. While the workers are benefiting because they are able to find work easily and are probably getting better wages than in their place of origin, this type of employment generation does not lead to long-term human development, since it does not require high skills and education, nor does the work result in the creation of human capital.

Since employment that promotes human capital has not risen fast enough in the district, it shows that the pattern of development is neither desirable, nor sustainable in the long run. There is now enough evidence from Africa that clearly indicates the greater vulnerability of less skilled workers to HIV (Shisana and Letlape 2004, Thomas et al 2005). In fact, this is the reason why the industry sector globally responded late to the HIV and AIDS epidemic. The cost to industry in terms of re-training and replacement was not deemed large enough, as most of the infections were among the less skilled and lesser paid. The increasing population of low-paid workers in the informal sector and an increasing number of migrants coupled with high worker mobility is a significant cause of concern. The focus on migrants is an important part of India's National AIDS Control Programme – III,[2] and Bellary highlights the importance of understanding the role that migration and mobility play in the HIV and AIDS situation of a region.

[2] http://www.nacoonline.org/National_AIDS_Control_Programme/Prevention_Strategies/TIs_for_Bridge_Populations.

Inequality and Poverty

Income distribution is perhaps the most relevant and important issue in the context of rapidly growing total income in Bellary. Rising income can either make everyone better off or it can make some better off and some worse off, thereby increasing inequality. It is also possible that those in the lower income bracket gain more than those in the upper bracket, with a resultant improvement in the distribution of income. Clearly, economic growth that is accompanied by a superior income distribution is preferable to one that is not and economic growth that is accompanied by a worsening of income distribution is of inferior quality.

There are no estimates on the extent of economic inequality in Bellary. The evidence on concentration of wealth in a few hands has been based on discussions with stakeholders and experts, anecdotal evidence and newspaper reports. There is unanimity in the view that inequality has worsened in Bellary, with a few people becoming rapidly rich, and a large majority experiencing low rise in incomes. For example, a February 2007 newspaper report noted that the district has seen the purchase of more private helicopters and imported cars in the recent past[1] and suggested that Bellary accounts for almost 10 percent of the market for private aircraft in the country. Such private resources were not present in the previous decade and evidence suggests that richer individuals, mostly miners are buying helicopters to bypass the poor road network.[2] The acquisition of expensive commodities by a few individuals could indicate an increase in income inequality.[3]

The statistics on poverty provide another important evidence of increasing inequality. While the northern districts of Karnataka have been relatively poorer than other districts, Bellary seems to have moved away from this situation with sharp increases in income. Bellary also portrays an interesting case of growth and poverty. Despite ranking third among 27 districts in terms of per capita income, it is also ranked third in terms of incidence of poverty, with a head count ratio of 33.1 percent in 1999, though this was also an improvement (Table 8.1). The two other districts with more poverty are Raichur (ranked twenty-fifth in per capita income) and Kolar (ranked twentieth in per capita income). The reduction in poverty – in terms of decline of people living below the poverty line – for the two richest districts (Bangalore Urban and Bangalore Rural) has been phenomenal; the head count ratio of these two districts declined by 22 percent and 33 percent respectively between 1993-94 and 1999-2000.

[1] http://timesofindia.indiatimes.com/articleshow/1625531.cms.
[2] http://www.hinduonnet.com/fline/fl2311/stories/20060616002104300.htm.
[3] http://timesofindia.indiatimes.com/articleshow/2003888.cms.

In contrast, this reduction in the case of Bellary was just 11 percent. Rank-wise (in terms of headcount ratio), while these two districts improved from 12 and 13 to seven and three respectively, the rank of Bellary district has actually declined from 16 to 18.

Another evidence of Bellary's poor performance is eliminating poverty. Murgai et al 2003 estimated the poverty gap for 20 districts of Karnataka[4]. Bellary, with a poverty gap of six (which is above the state average), continued to be among the bottom five districts in the state (Table 8.1).

Table 8.1: Incidence of poverty and poverty gap estimates by district

District	Headcount ratio 1993-94	Rank 1993-94	Headcount ratio 1999-2000	Rank 1999-2000	Poverty gap	Rank poverty gap
Chikmaglur	15.6	3	2.3	1	0.4	1
Kodagu	20.7	4	4.9	2	0.6	2
Bangalore Rural	38.2	13	5.2	3	0.7	3
Shimoga	25.6	7	8.1	6	1.4	4
Uttara Kannada	25	5	6.7	4	1.4	5
Bangalore Urban	31.4	12	9.9	7	1.5	6
Hassan	14.21	2	11.5	8	1.5	7
Dakshina Kannada	8.9	1	7.4	5	1.7	8
Mysore	28.9	8	15.5	9	2	9
Tumkur	40.6	15	18.5	13	2.7	10
Chitradurga	39	14	16.3	10	2.8	11
Mandya	30.2	11	16.6	11	2.8	12
Belgaum	29.9	10	17.9	12	3.2	13
Dharwad	49.8	19	21.4	14	4.2	14
Gulbarga	45.5	17	26.8	15	4.9	15
Bidar	56.1	20	30.4	16	5.2	16
Bellary	44.5	16	33.1	18	6	17
Raichur	25.1	6	45.6	20	6.3	18
Bijapur	29.03	9	32.1	17	6.8	19
Kolar	48.5	18	41.9	19	10.3	20
Karnataka	**33.2**		**20.1**		**3.6**	

Source: GoK (2006) and Murgai et al (2003)

[4] Head count ratio and poverty gap data reproduced from Murgai et al 2003.

Economic inequality also translates into social inequality. The SC/ST populations, which form a significant percentage of Karnataka's total population, continue to be the most deprived in the state. While district–specific statistics are not available, the Karnataka HDR 2005 states: "the human development status of Scheduled Tribes is more than a decade behind the rest of the population of the state and they are the poorest and most deprived sub-populations in the state". The report states that the SC population in Karnataka owns only 11.65 percent of operational holdings, of which over 83 percent is un-irrigated, resulting in agriculture providing only 15.4 percent of their total income. More than half of all marginal holdings are held by SCs. Only a small percentage of STs are cultivators and most earn a living as labourers. Given Bellary's high SC/ST population, it is fair to infer that there are significant inequalities in asset holdings in the district. There is also a close correlation between class and gender in case of sex work, with many Devadasis and sex workers reportedly belonging to the lower castes.

The gains of rapid and high economic growth can either be reinvested, resulting in investment in other industry and/or infrastructure, or can be used to improve welfare policies, which is a kind of redistribution. Neither of this has happened in Bellary. The benefits seem to be concentrated in a few private hands, and have not been reinvested in the district, either in terms of infrastructure or welfare. There is an increasing concentration of wealth co-existing with significant poverty. The creation of a rich and powerful class of individuals, who may have a significant role to play in the HIV and AIDS epidemic as well but are hardest to reach through interventions, is an important aspect of the HIV and AIDS situation in Bellary.

A lot of attention is being paid to the link between inequality and HIV. Sutherland (2007) analysed the situation in 57 countries including China, with HDI lower than or equal to that country. The study found a statistically significant relationship between HIV prevalence and income inequality measured by the Gini coefficient. The relationship understandably becomes weaker when countries with higher HDI are included in the sample. The analysis in the *Regional Human Development Report on South Asia* (UNDP 2003) also indicates that "human development achievements, including a higher real income per capita and lower degree of economic inequality as measured by the Gini coefficient, tend to contain the extent to which HIV prevalence is increasing owing to the duration of its presence in a population." The finding that richer individuals are likely to practice unsafe sex in an environment where it is the dominant behaviour (Clark and Vencatachellum

2003) fits this analysis and is very relevant for Bellary: despite high incomes, sexual behaviour among the rich possibly continues to be risky, because of the perception that most others are indulging in multi-partner sex as well, given the socio-cultural norms of the district. Further, the increase in disposable income, when not accompanied by improved education and knowledge, may well perpetuate or even accelerate high-risk behaviour like visits to commercial sex workers. A recent research by UNAIDS/Asian Development Bank (McLeod 2007) points out that "the epidemic in Asia is being driven by wealthy men, often after having unprotected sex with prostitutes[5]".

The report of the third National Family Health Survey (NFHS-3) also shows that unsafe sexual practices increase with the rise in the wealth index. 5.5 percent of men (in the 15-49 years age group) in the second wealthiest quintile compared to 4.9 percent in the lowest wealth index group reported having higher-risk sexual intercourse in the past 12 months of the survey (Table 8.2). While HIV prevalence was lowest among the wealthiest quintile (0.24 percent), it was highest among the second wealthiest (0.52 percent) followed by the poorest quintile (0.39 percent). It will, however, be erroneous to look for a one-to-one correspondence between same-period risk-behaviour and HIV prevalence, given a wide range of factors that influence the latter. The point being made here is that high-income individuals are seen to engage in high-risk behaviour, and can also have significant HIV prevalence, both of which are important to bear in mind while discussing the HIV epidemic in Bellary.

Table 8.2: High-risk activity and HIV prevalence among men in India by wealth index

Wealth index	Percentage who had higher-risk intercourse in the past 12 months	Percentage HIV positive
Lowest	4.9	0.39
Second	5.4	0.31
Middle	5.4	0.31
Fourth	5.5	0.52
Highest	5.3	0.24
Total age 15-49	5.3	0.36

Source: IIPS & Marco International (2007)

Social and economic inequality, and poverty in Bellary is likely to hamper effective prevention of HIV, due to the varying requirements of a diverse population, particularly at the two ends of the socio-economic ladder.

[5] http://timesofindia.indiatimes.com/HealthScience/Rich_unfaithful_men_spur_AIDS_in_Asia/articleshow/2305465.cms, 10 October 2007.

Human Development in Bellary

The development of Bellary in the recent past can best be assessed by comparing the Human Development Index (HDI) values for 1991 and 2001. As is well known, HDI is based on three indices for health, education and income respectively. Table 9.1 shows the HDI for Bellary and Karnataka, as well as the ranking of Bellary among all 27 districts.

While the overall HDI in Bellary has improved, as it has in Karnataka, the district has remained at the eighteenth rank during these ten years. Bellary has made some progress on the health indicators, but this has not made much difference to its overall ranking in Karnataka. It continues to be in the bottom five districts in the education sphere, ranking twenty-third among 27 districts in terms of the education index in both 1991 and 2001 (see Table 9.1).

An interesting and useful contribution of the Nanjundappa Committee report on Redressal of Regional Imbalances, 2002, was the calculation of a composite index of development, based on 35 indicators, for assessing the development of taluks. The indicators were selected based on how appropriately they reflected the relative variations in development among various areas and sectors, and covered a range of development aspects without a serious overlap.

Table 9.1: Human development index in Bellary, 1991 & 2001

Index	Bellary		Karnataka	
	1991	2001	1991	2001
Health	0.630 (10)	0.685 (7)	0.618	0.680
Education	0.506 (23)	0.618 (23)	0.602	0.712
Income	0.399 (9)	0.549 (9)	0.402	0.559
HDI	0.512 (18)	0.617 (18)	0.541	0.650

Note: The figures in parentheses indicate the rank
Source: GoK (2006)

It is possible to obtain the relative position of each taluk of Bellary from the Nanjundappa report. However, since the report pertains to the 1998-99 period, it was decided that an exercise to update the Comprehensive Composite Development Index (CCDI) with more recent data be undertaken for this report.

This work was carried out at the Kannada University, Hampi, in collaboration with the Bellary District AIDS Prevention Society (BDAPS).[1,2]

The comparison of the seven taluks of Bellary in the two CCDI for 2001 and 2006 is given in Table 9.2. The relative rankings of the taluks have not changed much in these five years, apart from the fact that Hadagalli and H.B. Halli have exchanged positions. There has been some improvement in the status of some of the taluks in terms of the absolute values of the index as well as relative ranking. Hospet, Bellary and Siruguppa are the more developed taluks, with the latter moving up from 'more backward' to 'relatively developed' position. Kudligi and Sandur are doing poorly in terms of overall development though they have moved up from being 'most backward' to 'more backward'.

Table 9.2: Comprehensive Composite Development Index for taluks of Bellary district: 2001 and 2006

Taluk	CCDI				Categories	
	2001	Rank	2006	Rank	2001	2006
Bellary	1.17	2	1.50	2	Relatively Developed	Relatively Developed
Hadagalli	0.81	5	0.94	4	More Backward	Backward
H.B. Halli	0.84	4	0.93	5	More Backward	Backward
Hospet	1.34	1	1.71	1	Relatively Developed	Relatively Developed
Kudligi	0.74	7	0.80	7	Most Backward	More Backward
Sandur	0.75	6	0.87	6	Most Backward	More Backward
Siruguppa	0.86	3	1.18	3	More Backward	Relatively Developed

The Nanjundappa report also classified districts into 'more deprived' and 'less deprived' based on parameters of income deprivation, health deprivation and education deprivation. The indicators considered are:

- population below poverty line;
- unsafe deliveries;
- severely malnourished children;
- unsafe drinking water;
- children out of school; and
- gender gaps in literacy.

Among these indicators, Bellary was put into the category of 'more deprived' districts in 2001 for poverty, unsafe deliveries, severely malnourished children and children out of school.

[1] Dr. T.R. Chandrasekhara, Professor, Department of Development Studies, Kannada University, Hampi, and Prahlad Rao, BDAPS.

[2] The CCDI was calculated in six steps using data for certain economic and social sectors and indicators. The backwardness of a taluk is determined with reference to the state average in terms of the normalised value of 1 for any indicator/sectoral index/composite index. Thus, taluks with CCDI values equal to or above 1 are categorised as `Relatively Developed Taluks', whereas those with CCDI values less than 1 are classified as `Backward Taluks'. Among the backward taluks, there were three sub-classifications with respect to the range of the CCDI: taluks with CCDI values ranging between 0.89 and 0.99 are classified as `Backward Taluks', those in the range of 0.80 to 0.88 as `More Backward Taluks' while taluks in the range of 0.53 to 0.79 are classified as `Most Backward Taluks'.

Education

Of the three components of the human development index – longevity, educational attainment and decent standard of living – educational attainment can be regarded as 'the most' significant factor influencing the development index. While it enhances human skills, which reflects in the production and formation of human capital, it also directly contributes to the quality of life. Education helps people make informed choices about their lives and rights, which have seen to trigger many social, demographical and political transitions across the globe (Planning Commission 2002).

Education plays a key role in the HIV epidemic, as evidence from around the world indicates that more educated individuals are better able to protect themselves against infection and its consequent impact (see for example GCWA 2007; Jukes et al 2005). The second and third National Family Health Survey[3] also corroborate this. Both the surveys suggest that knowledge about ABC (abstinence, being faithful and use of condom) method of prevention rises with increasing level of education. For example, NFHS-2 results indicated that only 6 percent of the ever-married women with no education compared to 37 percent with 12 or more years of education believed that AIDS can be prevented by using condom (IIPS & ORC Macro 2000). In NFHS-3, among women in the age group 15-59 years, these figures are 12 and 81 percent respectively (IIPS & Macro International 2007).

Karnataka's literacy rate has been higher than the national average since 1971 (GoK 2006). It increased by 10 percent from 56.04 percent in 1991 to 66.64 percent in 2001, against the country average of 64.84 percent. Female literacy rate in the state increased more swiftly than the male literacy rate during the two most recently conducted censuses, as also literacy in rural areas as compared to urban areas. However, the literacy level of SCs for male, female and combined was lower than the country average in 2001, even though it was higher for both female and combined population in 1991. This is not an encouraging sign. Table 9.3 makes a comparison of male and female literacy rates in India, Karnataka and Bellary for 1991 and 2001.

[3] In NFHS-2 (1998-99) respondents were only the ever-married women aged 15-49, while in NFHS-3 (2005-06), all women in the age group 15-49 and all men in the 15-54 age group were part of the sample.

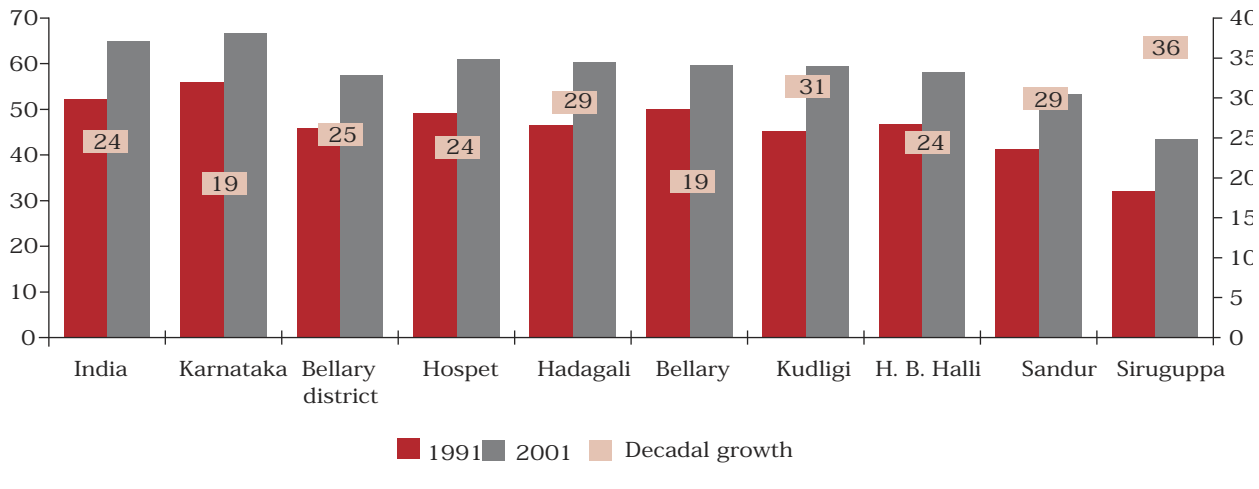
Table 9.3: Literacy rates for India, Karnataka and Bellary for 1991 & 2001 (in %)						
Particulars	Person		Male		Female	
	1991	2001	1991	2001	1991	2001
India	52.21	64.84	64.13	75.26	39.29	53.67
Karnataka	56.04	66.64	67.26	76.10	44.34	56.87
Bellary	45.89	57.40	59.11	69.20	32.24	45.28

Sources:
1. For India: Primary Census Abstract, Census of India 1991 & 2001
2. For Karnataka and Bellary: GoK (2006)

Bellary is also among the bottom ten districts in terms of literacy. The urban and rural literacy rates were 70.24 percent and 50.29 percent compared to the state average of 80.58 percent and 59.33 percent respectively. The low literacy levels of the district reaffirm the low human development orientation of its economic progress.

According to the 2001 Census, five taluks of the Bellary district (Bellary, Hadagalli, H.B. Halli, Hospet and Kudligi) have literacy levels above the district average of 57.4 percent, while the literacy rate of Siruguppa taluk is low at 44 percent. The literacy rates for Kudligi and Hadagalli saw an impressive increase in 2001 from 1991 – by 14 percent in Kudligi and by 13.7 percent in Hadagalli. However, in terms of decadal growth, the literacy level in Siruguppa rose by 36 percent, which was higher than the district average (Figure 9.1). Though there has been a significant increase in the literacy levels among the SC/ST population in the district, it remains well below the state average.

Figure 9.1: Taluk-wise literacy rate and decadal growth in Bellary for 1991 & 2001



Sources:
1. For India: Primary Census Abstract, Census of India 1991 & 2001
2. For Karnataka and Bellary district: GoK (2006)
3. For taluks: District Census Handbook, Bellary (1991) and Census of India 2001

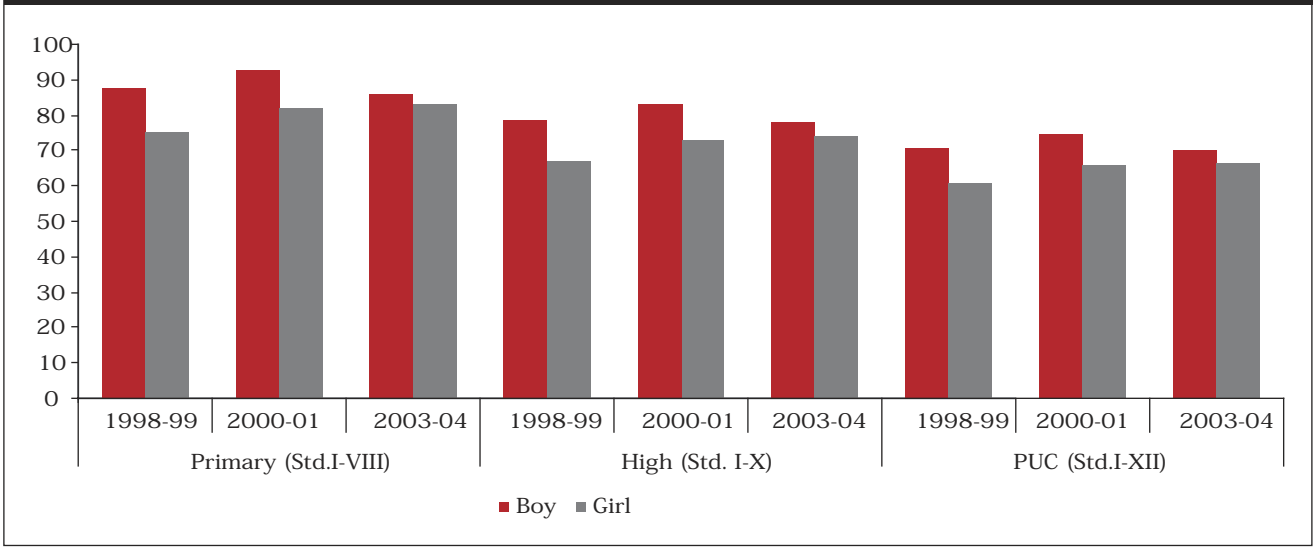
Enrolment levels are indicated through two parameters – net enrolment ratio (NER) or the extent of participation in education, and gross enrolment ratio (GER), or the capacity of the education system to enrol students of a particular age group. The GER is used as a substitute indicator to NER when data on enrolment by single years of age is not available. This section will consider only GER.

Figure 9.2 gives a comprehensive picture of the GER for children up to primary school (Standard. I-VII), high school (Standard I-X) and senior secondary school or pre-university college/PUC (Standard I-XII) level in Bellary for 1998-99, 2000-01 and 2003-04. Figure 9.3 looks at the GER for boys and girls during 2003-04 for Bellary and Karnataka.

The GER for Bellary indicates that while there were more boys than girls in all three levels in schools, the gender gap in GER has been narrowing steadily. There has been tremendous growth in enrolment of girl students at the primary and high school levels in the district. Interestingly, the GER for boys has declined slightly in the recent period for all the groups. This observation is substantiated by the mm&P report, which indicates that many of the child labourers working in the mines have dropped out early from school to assist their parents. The report also mentions the reluctance among teachers in parting with statistics on dropout rates for fear of being reprimanded by the government (mm&P 2005).

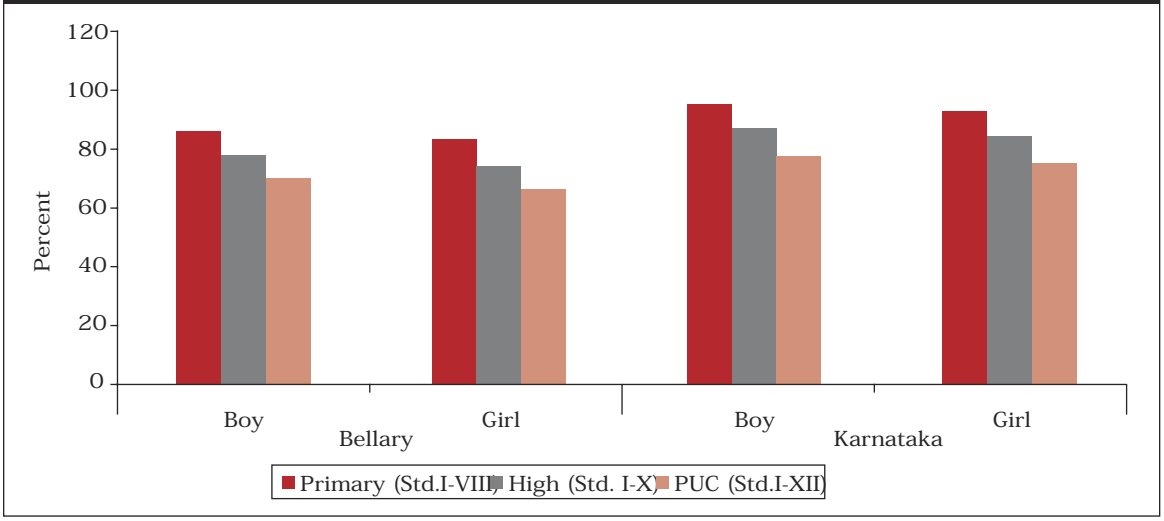
Overall, between 1998-99 and 2003-04, girls registered a growth of 15 percent in primary school GER and 48 percent in high school GER. This is much higher than the 3 percent and 26 percent growth in GER for the boys in the same categories, which is very encouraging. SC/ST girls also recorded high growth rate for high school enrolment.

Figure 9.2: Gross enrolment ratio for children up to primary, high and PUC level in Bellary



Source: GoK (2006)

Figure 9.3: Gender-wise gross enrolment ratio for children up to primary, high and PUC level in Bellary and Karnataka, 2003-04



Source: GoK (2006)

While a direct comparison across the three education categories to understand the drop out phenomenon is not totally valid (the ratios are gross ratios and hide a lot of movement within each education standard), it can broadly be said that the progressively low enrolment ratios across the three education categories point to significant dropouts at each level (Figure 9.3).

A combination of three factors – structural, individual and institutional – explains why children drop out of school. At the structural level, poverty is the main reason. From the individual perspective, lack of awareness and parents' own low educational levels result in children being withdrawn from school and put to work in household chores (GoK 2006). Lastly, lack of proximity to schools, absence of infrastructure like separate toilets for girls and less number of female teachers in the school have also been cited as reasons for the low turn out of girl students in later stages of schooling (GoK 2006). In the context of the HIV epidemic too, children – especially girls – drop out from schools to look after their sick parents, while also taking up jobs to augment household income (Gupta et al 2007 and Pradhan et al 2006)).

Student dropout (standard I-VIII) statistics for 1999-2000 and 2003-04 suggest that there has not been any significant improvement in the situation in Bellary. While Bellary was the second last district in terms of dropouts (68.7 percent) in 1999-2000, it slipped to the bottom most position with 67.1 percent dropouts in 2003-04. Even though the dropout rate among girls in the district showed some improvement during 2003-04, Bellary had the highest number of girl students dropping out of school. Bellary has been among the bottom five districts in the state in terms of proportion of out-of-school children (defined as the number of children out of school in the 6-14 years age group to the total number of children in the same age group), according to the children census for three consecutive

years from 2001 to 2003 (GoK 2006). While it cannot be confirmed, the high drop out rates of girls in Bellary can partially be due to low age of marriage and their roles as caregivers and earners in households affected by HIV as also other diseases and calamities.

Health

Table 9.4 indicates that Bellary has been able to keep pace with the average rates of change for Karnataka for many of the health indicators, though the absolute values remain comparatively adverse in some cases. The district has better values than the state average on infant mortality rate (IMR), crude death rate and life expectancy at birth. However, couple protection rate and institutional deliveries remain quite low, compared to the state as a whole. The extremely low value of institutional deliveries indicates that even if the deprivation indices taken from the Nanjundappa report were to be updated, Bellary would probably remain among the most deprived districts. Poor values of couple protection rate and institutional deliveries have important implications relating to safe sex behaviour and vulnerability of women respectively, both of which play important roles in the HIV and AIDS situation in Bellary.

The health status of a population depends also on adequate supply of providers and health facilities. Table 9.5 presents some key variables to highlight the status of health infrastructure in Bellary and Karnataka. Interestingly, the table indicates a relatively better situation in Bellary compared to the state in terms of the population

Table 9.4: Selected health indicators: Comparison of Bellary and Karnataka

Indicator	Year	Bellary	Karnataka
Crude birth rate	1991-92	30.2	27
	2001-02	26.4	22.4
Crude death rate	1991-92	8.2	8.6
	2001-02	7.2	7.5
Eligible couples protected	1998-99	48.3	59.2
	2003-04	52.3	60.3
Infant mortality rate	1991-92	79	82
	2001-02	53	55
Life expectancy at birth	1991-92	62.8	62.1
	2001-02	66.1	65.8
One year old infants fully immunised	1998-99	73	88.8
	2003-04	77.3	82
Percentage of institutional deliveries	1998-99	34.3	45.5
	2003-04	36.4	58
Total fertility rate	1991	4.85	3.9
	2001	3.1	2.4

Source: GoK (2006)

per bed in government medical facilities and the number of beds per lakh of population. On the other hand, the population served per medical institution is worse for Bellary and has increased over time, indicating the possibility of overcrowding.

Table 9.5: Health system indicators: A comparison

Indicator	1990-91		2003-04	
	Bellary	Karnataka	Bellary	Karnataka
Number of beds per lakh population	102	89	91	88
Population per bed in government medical institutions	981	1126	1097	1134
Population served per medical institution	19952	19919	20360	18557

Source: GoK (2002)

The Nanjundappa report gives additional information on the functionality of infrastructure in Karnataka, including health infrastructure[4]. Table 9.6 presents some key statistics from the report on Bellary, Gulbarga division (Bellary is part of this division) and Karnataka.

Table 9.6: Functionality of health infrastructure, 2001 (in %)

Indicator	Bellary	Gulbarga division	Karnataka
Sub-centre with regular ANM	79	85	88
Sub-centre located within village	79	81	87
Government sub-centre having building	62	70	66
Villages who said the services of ANM were 'poor'	2	16	9
PHCs with insufficient water supply	86	39	43
PHCs with insufficient electricity	29	19	19
PHCs with insufficient lab facilities	71	45	44
Percentage of PHCs with insufficient cold storage	29	29	17

Source: GoK (2002)

The scenario in terms of functionality of infrastructure is mixed. While the sub-centres and the interaction with auxiliary nurse midwife (ANM) were similar to the averages of Gulbarga division and Karnataka, the status of primary health centres (PHCs) tells a slightly different story. Water supply, a key ingredient to good health practices, and laboratory facilities seem to be lacking in the PHCs. The percentages are more adverse in most cases than those for the division and the state.

Bellary has made good progress over the years in some areas of health, though it still has a long way to go in terms of improving the health status of individuals,

[4] Report on Functionality of Infrastructure Facilities in Important Selected Sectors in Karnataka, High Power Committee for Redressal of Regional Imbalances, Accompaniment – 1, June 2002.

especially when compared to the more developed districts of south Karnataka. As the HDI for health indicates, Bellary has moved from tenth to seventh rank, but some of the indicators that may have a bearing on HIV and AIDS, like couple protection rate and institutional deliveries, are still adverse.

The focus group discussions also indicated that Bellary is probably not dealing adequately with major health issues, apart from HIV and AIDS. Lack of statistics on treatment-seeking behaviour from private providers – which seems an important part of demand for health care in the district – made it difficult to corroborate this observation.

Gender

The basic statistics on gender disparities make it possible to get an overall picture on the status of women, which is relevant to any discussion on the HIV epidemic. The Karnataka Human Development Report 2005 lists key indicators of gender disparities (Table 9.7).

Table 9.7: Indicators of gender disparities

Particulars	Bellary	Karnataka
Female literacy rate, 2001	45.28	56.87
Gap in male and female literacy, 2001	23.92	19.23
Enrolment of girls in high schools as % of enrolment of boys, 2003-04	70.15	86.95
Percentage increase in work participation rate of females (1991-2001)	1.1	8.8
Percentage of women employees in organised sector	20.2	31.5
Percentage of girls marrying below legal age, 1998-99	44.2	35.3
Percentage receiving full ANC, 1998-99	26.5	60.1
Percentage of safe deliveries, 1998-99	30.1	60.0
Percentage of women having at least one of the RTI/STI symptoms	18.1	16.3
Percentage of men having at least one of the RTI/STI symptoms	9.7	4.4
Percentage of households without access to toilet	73	63
Female suicides as % of male	62.81	47.59

Source: GoK (2006)

The statistics reveal the poor status and well-being of women in Bellary. Female literacy is low and there is an enormous gender gap in literacy. Enrolment of girls in high school is low, and drop out is high. These statistics indicate that while official norms on female education are being enforced to some extent, the condition of the girl child is not improving.

The work participation of females has barely increased between 1991 and 2001 despite the boom in the mining and other sectors in Bellary. The percentage of

women in the organised sector (20.2 percent) remains much lower than the state-wide average (31.5 percent). The employment section also indicated that most women are employed in the agricultural sector, in contrast to men.

While more recent figures are not available, the reproductive and child health (RCH) data reveals that a very high percentage of women (44.2 percent) marry below the legal age of 18. More revealingly, the percentage of women receiving full ante-natal care (26.5 percent) and having safe deliveries (30 percent) is extremely low compared to the state figures.

To better understand the status of women in Bellary, the research team carried out qualitative interviews among respondents coming to prevention of parent to child transmission (PPTCT) and Revised National Tuberculosis Control Programme (RNTCP) sites in government hospitals[5]. A summary of these responses are mentioned below:

- An overwhelming majority of respondents said that education of the girl child and women is critical. While some said girls are being educated, a majority said that the girl child is neglected, not sent to school or is taken out of school early, and not treated at par with boys.
- Quite a few respondents mentioned the importance of equality between men and women through equal rights, with many mentioning employment as an important tool towards economic freedom. In this context, property rights were mentioned as a key instrument in giving more empowerment to women.
- A number of respondents mentioned the continuing practice of child marriage as a major hindrance to the welfare and progress of the girl child.
- Many respondents mentioned violence against women and alcoholism among men as continuing phenomenon in Bellary.

Overall, the qualitative responses indicate that Bellary has a very traditional outlook on the status of women, and the upbringing of girls. Poor schooling, early marriage and lack of employment opportunities affect their status in society. All these feature point to a situation where women – poor as well as rich – may find it difficult to protect themselves against HIV.

Status of Scheduled Castes and Tribes

In 2001, Bellary had 18.5 percent SC and 18 percent ST population respectively, with a rapid increase in the ST population over the last decade. The district has

[5] Details of this survey are discussed in Chapter 12 of this report.

Table 9.8: Selected indicators of status of SC/ST populations				
Particulars	**Bellary**		**Karnataka**	
	SC	**ST**	**SC**	**ST**
Gross enrolment ratio	67.47	60.31	84.08	72.31
Percentage of households in temporary housing	30.18	33.52	12.22	17.25
Percentage of out-of-school children	17.03	18.46	10.55	12.82
Female literacy rate	29.04	28.75	41.72	36.57
Rural literacy rate	36.93	37.89	47.25	45.26
Rural work participation rate	51.5	52.7	50.1	51.5
Percentage of households with access to toilet	15.27	14.98	21.18	20.26

Note: Reference period for all particulars is 2001, except for percentage of out-of-school children, which is 2002
Source: GoK (2006)

the highest share of ST population (10.6 percent) in the state and ranks eighth in its share of SC population (4.4 percent). Table 9.8 presents some key statistics on the status of SC/ST population in Bellary.

Despite this sizable population, Bellary has not been able to significantly improve the status of the SC/ST groups. The female literacy and rural literacy rates among SC/ST remain dismally low. The GERs are also lower and drop out rates are higher than the state average. However, the rural work participation rates are not too low, and comparable to the state figures.

More than 30 percent of SC/ST households have temporary housing, which is substantially higher than the state average (12 percent for SC and 17 percent for ST populations respectively). A small percentage of SC/ST households have access to toilet facilities, indicating the possibility of poor hygiene.

There is ample literature that describes the plight of the SC/ST in India, and the discrimination that Dalit women and children face, including the likelihood of engaging in sex work[6]. A World Bank study on the status of SC/ST and other vulnerable populations in Karnataka found "a high incidence of landlessness among SCs and STs, less land in command areas owned by SCs and STs, low literacy levels, tail-end command farmers and irregular/inadequate availability of water, low return from agriculture owing to inadequate access to farm inputs, alternative sources of irrigation and institutional credit, inadequate exposure to the market, poor leadership qualities and lack of opportunities to participate in decision-making process and lack of awareness about health and sanitation[7]."

The Karnataka Human Development Report 2005 has acknowledged the state's failure to address the plight of SC/ST populations, and this applies to Bellary as

[6] http://www.hrw.org/reports/2007/india0207/9.htm.
[7] http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/05/04/000094946_02050404111941/Rendered/INDEX/multi0page.txt.

well. The vulnerability of the SC/ST population and the likelihood of their also belonging to the poor and marginalised populations can affect the AIDS epidemic in the district, especially in the context of the Devadasi system, which primarily involves vulnerable lower caste girls.

Housing, Water and Sanitation

Access to basic amenities is a very important aspect of progress and human development. Improvement in income is a necessary, but not sufficient, condition for improving living standards. Households need to have adequate access to clean water, proper housing and adequate arrangements for maintaining high levels of hygiene. Table 9.9 presents some key aspects of living conditions, based on the Karnataka Human Development Report 2005.

Table 9.9: Selected indicators of living conditions

Indicators on basic amenities (in %)	Bellary	Karnataka
Households in permanent houses, rural	32.81	42.71
Households in permanent houses, urban	58.74	77.92
Households with access to safe drinking water, electricity and toilets (all 3)	24.76	35.18
Households having access to none of these: safe drinking water, electricity and toilets	24.61	19.13
Households that have no latrines	72.8	62.5

Source: GoK (2006)

About two-thirds of the rural households are in non-permanent housing, indicating the possibility of mobility. This figure is much lower for urban Bellary, though the percentage staying in permanent houses (59 percent) is lower for urban Bellary than that for Karnataka as a whole (78 percent).

Only 25 percent households have access to all three amenities – safe drinking water, electricity and toilets against 35 percent in the entire state. The figure is about the same in Bellary for households who have none of these facilities, though the number is much lower for Karnataka at 19 percent. The fact that 73 percent of the households have no latrines indicates the possibility of lack of hygiene as well as the special vulnerability of women who need to go outside to access latrines.

The poor performance of Bellary in the provision of basic amenities indicates poor administration and governance, especially considering the rapid economic growth in the district.

Governance

Kaufmann et al (1999) have presented six dimensions of governance: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. Empirically, good governance has been associated with good development outcomes.

Though data to measure these parameters in Bellary is lacking, some indirect indicators can be used to discuss governance relevant for human development and the status of the epidemic.

The Karnataka Human Development Report 2005 presents some evidence on governance in the state, and indicates a picture of continued concern on several fronts: poor redressal of public grievances, a complex and non-transparent government structure, barriers to information that make the Right to Information Act somewhat unusable, lack of proper indicators for evaluating quality of services, and lack of accountability evidenced by high teacher absenteeism etc. It is safe to assume that a similar set of problems plague all the districts, including Bellary.

Allegations of corruption in the mining industry have been mentioned frequently in the press. While evidence on corruption is difficult to collect, the boom in illegal mining indicates a scale of non-compliance with government rules that cannot but happen without the cooperation of other actors. As mentioned earlier, the Chief Minister of the state had to intervene and order an investigation into the matter. News reports on illegal mining in Bellary continue to highlight these activities. According to a report, "Anti-mining activists often speak of a `mining mafia' comprising mine owners, politicians and law enforcement officials, united in a desire to keep the profits flowing. While they have so far failed to tie politicians to mining, they insist that such a collusion best explains why, for example, so many officials in the government continue to deny the existence of encroachment, and why environmental and labour regulations have gone largely un-enforced." (Chin 2006)

The unchecked mining and quarrying has not only led to deforestation[8] but the roads in the district are also in a very poor condition, as elaborated earlier, with the transport department not appearing to do much to repair them.

Another instance of poor governance has been the inability to curb phenomenon like child labour. Due to the use of significant child labour in Bellary's mining sector, the district was selected to be covered under the National Child Labour Project (NCLP) scheme during the Tenth Five Year Plan period (2002-07). The project aims at "withdrawing and rehabilitating children working in identified hazardous occupations and processes through special schools and finally mainstreaming them to the formal education system[9]."

The Child Labour Fact Finding Report states that "the NCLP has hardly any schools for the child labourers in the mines, as the government statistics do not show any child labour in the mines. According to them, the practical problems

[8] parisara.kar.nic.in/PDF/Mining.pdf.
[9] http://labour.nic.in/annrep/annrep0506/english/Chapter12.pdf.

in the field are that the allocation of funds is very low for each district and unless the labour officer conducts raids and books cases, the NCLP cannot have evidence of child labour to start any programme of intervention." While more updated evaluation of the NCLP is not available, it does seem as though the phenomenon of child labour continues in the mines of Bellary.[10]

Another example of poor enforcement and implementation is the Devadasi system. Despite the government's objective of abolishing the practice and the rehabilitation of Devadasis, the tradition continues with very little evidence of improved status of these women.

Finally, the school enrolment and drop out rates, especially for girls and backward classes, indicate that the local governance has not been able to make primary schooling universal or improve education for women and other vulnerable sections of the society.

There is now a significant amount of literature available globally on the links between governance and the HIV and AIDS epidemic. 'The African Civil Society Governance and AIDS Initiative (GAIN)' has highlighted the importance of democratic and plural governance in managing the epidemic. One important reason for differences across countries in their ability to manage the epidemic is the presence or absence of good governance, which is a much wider concept than merely good administration. In addition to the various indicators of imperfect governance mentioned above, in the context of the epidemic, good governance also extends to a government's ability to mainstream HIV and AIDS in its development agenda, which has not been effective in Bellary.

[10] www.globalmarch.org/clns/clns-june-2007-details.php.

HIV and AIDS: Status of Epidemic

The HIV and AIDS epidemic has entered its third decade in India, with an estimated 2 – 3.1 million adults living with the virus by the end of 2006[1]. Data available from different sources indicate that all states show HIV prevalence in both urban and rural populations, in varying degrees. The National AIDS Control Organisation (NACO) monitors the extent of the infection through a sentinel surveillance programme, under which testing for HIV infection is carried out among a) high-risk populations like those visiting STD clinics, sex workers, injecting drug users, and men who have sex with men and b) low-risk populations represented by women attending ante-natal clinics (ANCs). The surveillance system is in place in all the states, and the results of the 2006 surveillance indicate increased infection rates in many districts, including those in low prevalence states[2]. Based on the HIV Sentinel Surveillance Data in India 2003-06, 195 districts across the country have been identified as high prevalence districts[3].

Karnataka has been a high prevalence state, and the average HIV prevalence at ANCs has exceeded 1 percent in recent years. It is surrounded by three high prevalence states – Tamil Nadu, Andhra Pradesh and Maharashtra – and one moderate prevalence state – Goa. While there seems to be an overall downward trend, the infection among those attending STD clinics has remained above 10 percent between 1998 and 2005, while prevalence among those attending ANCs has hovered around 1 percent. This is indicative of a generalised epidemic, wherein the virus is significantly present among both high-risk as well as low-risk segments of the population. Recent estimates from HIV Sentinel Surveillance (2006) indicate that prevalence among STD attendees has decreased again to 7.57 percent, while ANC prevalence remains stagnant at 1 percent. Table 10.1, which presents the HIV prevalence for four different sentinel groups in Karnataka, shows that prevalence among female sex workers increased sharply in 2004, and declined thereafter, reaching 8.6 percent in 2006, while infection among men who have sex with men surged to 19 percent from 11.6 percent in 2005. Overall, infections remain high among all the sentinel groups, and the state at present has more than 500,000 people living with HIV (NACO 2007).

While HIV prevalence is established in all the 27 districts of Karnataka, there is a variance between and within districts. The HIV surveillance in ANC sites is now

[1] The latest estimates indicate that there are around 2.47 million people living with HIV in India by the end of 2006, which adds up to adult HIV prevalence of 0.36 percent.

[2] NACO has defined states having more than 1.0 percent HIV prevalence among the general population as high prevalence states; those with concentrated epidemic i.e. more than 5 percent HIV prevalence among the high risk population as moderate prevalence states and the rest as low prevalence states.

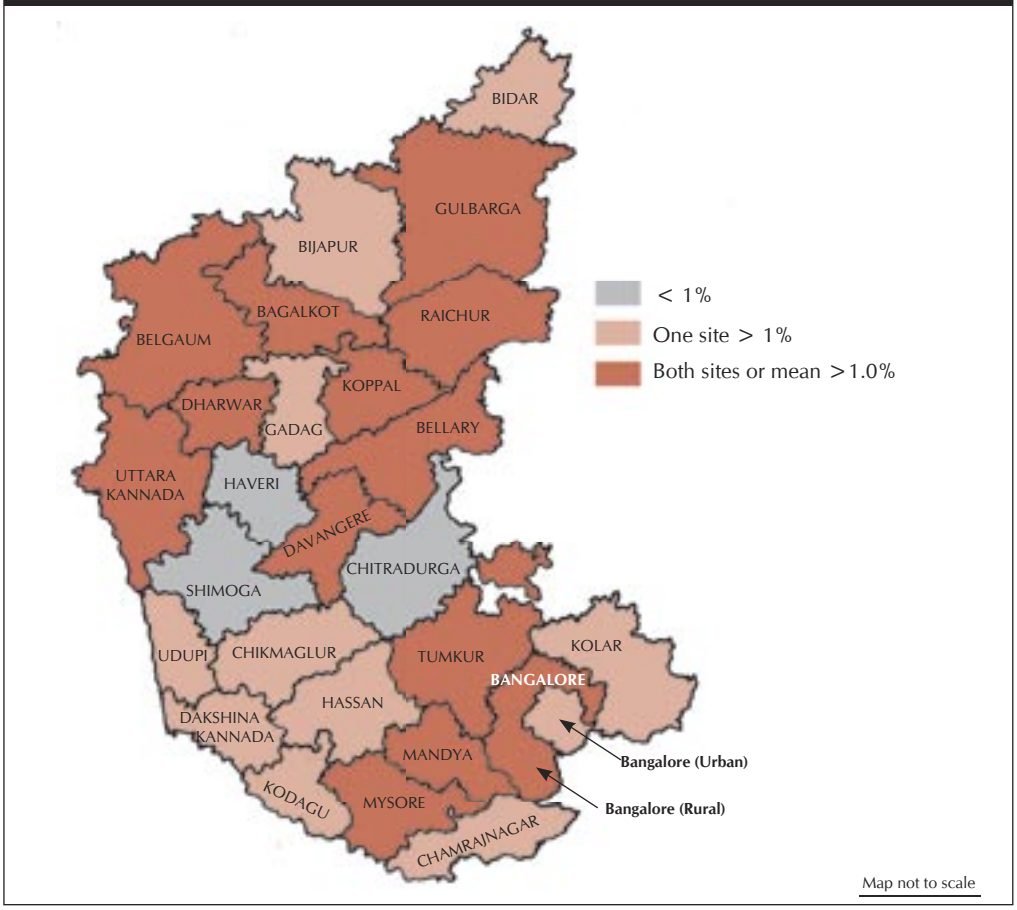
[3] "Prioritisation of districts for programme implementation," NACO, 2007.

Table 10.1: HIV prevalence among various groups in Karnataka over last four years				
Site/Year	**2003**	**2004**	**2005**	**2006**
ANC	1.25	1.25	1.00	1.00
STD	10.4	12.0	13.6	7.6
FSW	14.4	21.6	18.4	8.6
MSM	10.8	10.0	11.6	19.2

Source: Various HIV surveillance statistics from NACO
Note: FSW = Female sex workers; MSM = Men who have sex with men

being conducted in at least two sites in each district in order to help provide better data. According to the surveillance report of 2004, only three districts showed ANC prevalence of less than one percent in both surveillance sites located at the district hospital and the First Referral Units (FRU). The remaining 24 districts, including Bellary, showed an ANC prevalence of more than 1 percent in either of the sites (Population Foundation of India et al 2004). Districts with the highest prevalence were located in and around Bangalore in the southern part of the state (Figure 10.1).

Figure 10.1: HIV prevalence rate among women attending ANC in the districts of Karnataka



Source: KHPT[4]

[4] www.khpt.org, accessed on June 6, 2007.

Thirty-two out of 54 ANC sites in Karnataka have shown more than 1 percent HIV prevalence among attendees (NACO 2007). A majority of these districts are in northern Karnataka and have been showing high prevalence for more than five years, despite a range of interventions to address the epidemic. These districts also fall in the Devadasi belt and have common boundaries with the high prevalence states of Andhra Pradesh and Maharashtra. In addition, drought and economic backwardness make the situation of these districts worse (GoK 2002).

HIV in Bellary: An Overview

Bellary is a high prevalence district, with 22,000 estimated HIV infections and 1.1 percent HIV prevalence among general population (NACO 2007). It is surrounded by three other high prevalence districts of Karnataka – Davangere, Koppal and Raichur – and also shares its border with Anantpur and Kurnool districts of Andhra Pradesh, where the HIV prevalence among ANC attendees was 2.25 and 0.75 percent respectively in 2006. Higher prevalence of HIV has been reported from Bellary since the surveillance sites were established in 1999. At that time, the HIV prevalence in STD clinics was as high as 14 percent, while the corresponding figure for ANC prevalence was 1.5 percent. As mentioned in Chapter 1, Bellary has been among the top four districts in terms of estimated HIV infection in Karnataka. Figures 10.2 and 10.3 compare HIV prevalence of Bellary sites with the average of Karnataka over the last few years.

After an increasing trend till 2002, the prevalence among STD patients slowed down, but recent figures indicate a sharp rise in prevalence, making Bellary the district with the highest prevalence (16.4 percent) among STD patients in the state. Similarly, prevalence among ANC attendees went down significantly after 2002, but showed a slight rise in 2006. Prevalence among rural ANC attendees went up in 2006 to its 2003 level of 1.75. While the corresponding average figures of HIV prevalence among STD patients for Karnataka are the lowest in recent years, the

Figure 10.2: HIV prevalence in STD clinics

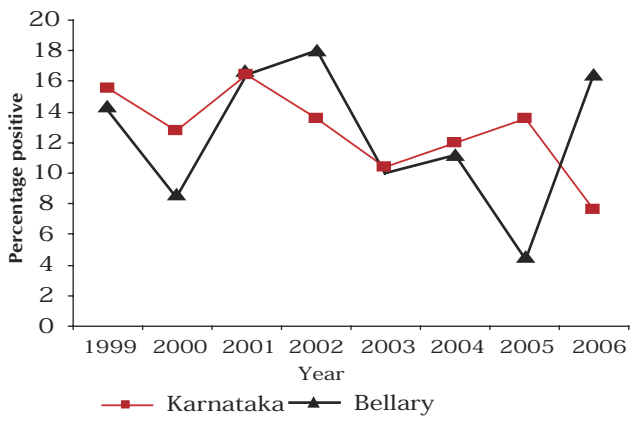
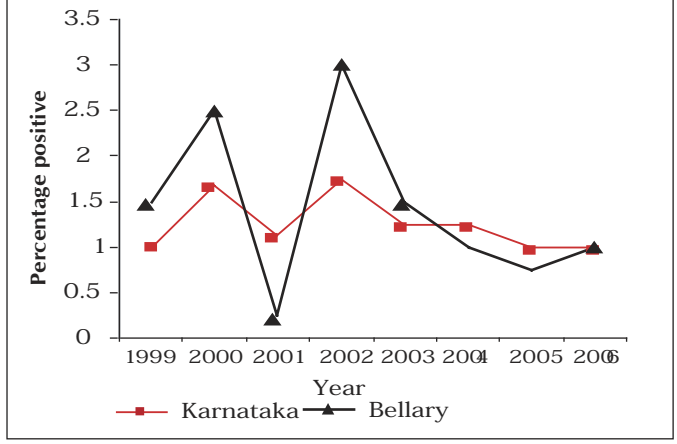


Figure 10.3: HIV prevalence in ANC



Source: Various HIV surveillance statistics from NACO

prevalence among ANC attendees has been much lower in Karnataka as a whole, compared to Bellary.

Bellary has also seen continuous and focused prevention programmes since the late nineties, which were expected to have an impact on prevalence rates. However, the recent increase in prevalence among key groups is worrying and is an indication that the interventions may have resulted in only short-term improvements. The targeted interventions are unsustainable in an environment where human development is weak. This holds a key to understanding the prevalence figures.

HIV and AIDS: Behavioural and Cultural Aspects

A mapping exercise on the distribution of various high-risk groups across the towns of Bellary district conducted by the NGO, SWASTI, in 2004 indicates that, on an average, 4,300 persons – accounting for more than 0.42 percent of the total adult population and 1.11 percent urban adult population – are engaged in one or the other high-risk activities. The two high-risk groups – the female sex workers and Devadasis – numbering 2,514[1] and 1,236 respectively – comprised 87.5 percent of the total mapped urban population of around 4,300 high-risk individuals. The remaining 12 percent included eunuch sex workers, jogappas (male devotees of Goddess Yellama who may or may not be involved in sex work), men who have sex with men and a small number of injecting drug users. Bellary town accounts for 23 percent of the total urban high-risk group population of the district, while Hospet town comes second with 15 percent. The other towns with significant high-risk group population are Siruguppa (13 percent), Kampli (12 percent) and Kamalpur (11 percent).

The SWASTI mapping exercise focused only on urban mapping, and concluded that while the Devadasis are concentrated in Hospet (23 percent) and Sandur (16 percent) towns, because of their geographical proximity to the Huligi and Yellama temples that are sacred for this cult, the female sex workers population is higher in Bellary (26 percent) and Siruguppa (15 percent) towns. Kampli and Kamalpur towns of Hospet taluk represent almost equal proportions (11 percent) of both the high-risk groups, making them hotspots for potential interventions. The estimates of the number of Devadasis by the Department of Women and Child are considerably higher compared to the SWASTI report, and are also more comprehensive since the Department maps the entire district, including rural areas. Table 11.1 gives taluk-wise estimates of Devadasis in Bellary. Sixty percent of more than 7,500 Devadasis belong to the three rural taluks. A recent research study by Gurav et al (2007), which refers to the sex workers estimates of KHPT, indicated that the majority of the sex workers were from Andhra Pradesh, were illiterate and solicit from home. The degree of condom use varied, depending on the type of the partner. A Karnataka-based study also stated that HIV prevalence was higher among illiterate sex workers[2].

[1] The Karnataka Health Promotion Trust (KHPT), an agency involved in HIV prevention activities in Bellary district, estimates the number of female sex workers at 3,852.

[2] Karnataka's Report on HIV Sentinel Surveillance in 2005.

Table 11.1: Taluk-wise distribution of Devadasis in Bellary district		
Taluks	**No. of Devadasis**	**Proportion (in %)**
H.B.Halli	1,907	25.37
Huvinahadagali	1,460	19.42
Siruguppa	979	13.02
Kudligi	780	10.38
Bellary (Rural)	768	10.22
Sandur	753	10.02
Hospet	650	8.65
Bellary (Urban)	221	2.94
Total	7,518	100.00

Source: Department of Women and Child, Bellary

The Devadasi System

Devadasi (literally, servant of God) is a centuries-old practice that still prevails in many parts of southern India where women become courtesans in God's court. This tradition has reportedly given way to a culturally sanctioned system of initiating young girls into systemic, and so-called 'sacred', prostitution (NHRC 2004, Chawla 2002, Tarachand 1992). These young girls generally belong to socially disadvantaged classes of society and, once initiated into the Devadasi system, can end up serving the upper caste clientele who generally act as a patron[3]. It is important to bear in mind, the influence of caste in the Devadasi system; a report commissioned by the National Commission for Women (NCW) reveals that "thousands of Dalit women continue to be forced into the Devadasi system in several states of India.

The system also has an economic basis. The majority of the Devadasis are from the lower castes, illiterate, landless and with children but without apparent support of a spouse or other family members (Chawla 2002). This compels most of them to continue as Devadasis for their main source of income, to finance household expenditure as well as future requirements like marrying off their daughters. A study by the National Commission for Women estimates that there are around 23,000 Devadasis in Karnataka.

Devadasis are vulnerable to a host of STIs, RTIs and HIV because they have more than one regular sexual partner. Although it is somewhat, a controversial issue, it is also well accepted now that some Devadasis are involved in regular sex work, while others have fairly regular partners in the form of patrons who treat the women like second wives (Chawla 2002). Often these patrons terminate

[3] The patron secures the right of spending the first night with the girl at the time of the ceremony dedicating her to God. He may maintain a permanent liaison with the girl by paying a fixed sum of money or he can maintain the relationship for a fixed period of time on payment or he can simply terminate the liaison after the deflowering ceremony (Jogan Shankar, 1990).

the liaison, rendering the women economically and socially vulnerable, and increasing the likelihood of their taking up commercial sex work as a means of livelihood. Jogan Shankar (1990) reports around 40 percent urban brothel-based sex work among the Devadasis. However, the same report indicates that more than half the Devadasis of Yellampura village were actually engaged in economic activities other than sex work, and about 30 percent were agricultural labourers. Devadasis also migrate to other parts of the country, with one report indicating that close to 30 percent of the Devadasis have found their way to the red-light districts of Mumbai and other cities (MYRADA 2001), though there are Devadasis who migrate but do not engage in sex work.

Various legislations have declared the Devadasi system unlawful, including the Karnataka Devadasis (Prohibition of Dedication) Act, 1982. It bans the very act of dedication – whether it is done with or without the consent of the dedicated woman – along with all the rituals attached to the system. However, the practice still prevails, partly because the scope of the ritual processes was ill defined in the Act.

The Karnataka Devadasis (Prohibition of Dedication) Act also provides for the rehabilitation of Devadasis, the responsibility of which lies with the Karnataka State Women Development Corporation (KSWDC) since 1991. The Devadasi Rehabilitation Programme was launched to promote the socio-economic development and empowerment of Devadasis through income generating schemes, skill development, housing, old-age pensions and help in mobilising bank loans, among other things. However, the enforcement of this act has remained weak (MYRADA 2001), largely due to ignorance among the Devadasis as well as the enforcement authorities about existence of such laws[4].

A partnership programme between KSWDC, MYRADA and NOVIB (Oxfam Netherlands) was initiated in 1991. The programme focuses on the economic empowerment of the Devadasis as well as attempts to ensure social mobilisation through a membership organisation called Mahila Abhivruddhi Mathu Samrakshana Samasthe (MASS). MASS, an NGO working in Belgaon district, had its origins in self-help groups (SHG) of Devadasis and now has over 2,500 members.

[4] http://www.thehindu.com/2006/01/30/stories/2006013020130300.htm.

Similar groups[5] have been established to collectively voice the demands of Devadasis. A mass agitation launched during 2006-07 demanded various rehabilitation reforms and a fresh survey to estimate the correct number of Devadasis in Karnataka. Attempts have also been made to launch campaigns and programmes to eliminate the system. Given the lack of awareness about existing laws, the National Legal Service Authority launched a programme called 'Project Combat' to sensitise advocates, judges, police and administrative authorities (The Hindu 2006a). As a result of all these developments, the issue has started attracting political interest – while the Communist Party of India (Marxist) has been fighting on behalf of the Devadasis[6], the Chief Minister of Karnataka has announced schemes to facilitate their rehabilitation at a state-level convention of 'Vimukat Devadasis Women' on 28 April 2007[7].

Though the Devadasi system has evolved and changed from its original form, it could be playing a role in the transmission of HIV in the region. The system is still followed in Bellary, and has resulted in the continued poor social and economic status of Devadasis. This puts them at risk of HIV, and subsequently, makes it difficult for them to cope with the potential social and economic impact of HIV. In this sense, Devadasis are also an important target for impact mitigation strategies, apart from being a primary group for targeted interventions as well as development programmes. While they have been the focus group for some interventions, the various stakeholder meetings as well as data on interventions indicate that the impact, scale and reach have not been sufficient[8].

[5] Vimochana Devadasi Punarvasathi Sangha, Mahila Abhivruddhi Mathu Samrakshana Samasthe, Karnataka State Devadasi Vimochana Sangh, Rajya Mahila Abhivrudhi Nigama.

[6] http://pd.cpim.org/2007/0304/03112007_devadasis.htm.

[7] http://www.hindu.com/2007/04/29/stories/2007042902790300.htm.

[8] Data from interviews with NGOs and BDAPS.

The role of sex work in Bellary figured in focus group discussions, as well as various expert group meetings. In all such discussions, the importance of Devadasis and sex work in the HIV and AIDS epidemic was a recurrent topic.

The participants of the various focus group discussions mentioned an area called D.C. Nagar (named after a former Deputy Commissioner who initiated this rehabilitation process), as a traditional red light area, where more than 200 commercial sex workers reside in 16 brothels. Almost all the sex workers are reported to be from Guntur, Vijayawada, Chilukulurpeta and Rajahmundry districts in Andhra Pradesh and from the northern districts of Karnataka like Bijapur and Gulbarga. It was also mentioned that these women come to Bellary for short duration visits (two to three months at a stretch) to carry on their trade. The discussions reconfirmed the view that mostly/primarily women take to sex work out of economic compulsion.

The discussions indicated that the customers of sex workers include truck drivers, college students, officers, doctors and even members of elite families. The rich apparently prefer the sex workers to visit their home, instead of them visiting the brothels.

In sum, sex work – whether through the Devadasi system or otherwise plays an important role in the HIV and AIDS situation in Bellary, providing a core group of at-risk individuals. Clearly, the economic development of Bellary and neighbouring regions has by-passed women, especially from lower socio-economic classes, increasing the probability of their taking up sex work. This, combined with cultural practices and increasing disposable incomes in the hands of potential clients, is an important reason why Bellary continues to see high levels of infection.

Vulnerable and At-risk Populations: Findings from Primary Survey

A primary survey was designed in order to better understand the social and economic background of the clients of three selected government-provided services – tuberculosis (TB) patients accessing treatment at Revised National TB Control Programme (RNTCP) delivery points, pregnant mothers visiting Prevention of Parent to Child Transmission (PPTCT) centres, and clients of STD clinics. These groups were targeted for the following reasons: STD patients are considered a high-risk group and prevalence of STI is a good indicator for HIV; TB is a prime opportunistic infection for people living with HIV[1,2], and pregnant mothers form a prime group for surveillance with high levels of infection. According to NACP-III, "in 2004, it was estimated that 22 per cent of HIV cases in India comprised of housewives with a single partner[3]".

The data collection took place over a month at selected delivery points in Bellary and Hospet towns. While the load at RNTCP and PPTCT centres was enough to draw a considerable sample size, the clientele of STD clinics was low, arguably due to a decline in visits to these clinics. Despite the data collection taking place for a pre-decided period of time, not many clients turned up at the STD clinics[4], and thus, the following discussion does not include responses from these clients. The results from the survey conducted among the clients of RNTCP and PPTCT interventions are presented below, as well as similar findings from NFHS-3 and the NACP-III strategy document.

Table 12.1: Distribution of samples (in %)

Particulars	PPTCT	RNTCP
Total sample size (No.)	272	245
Bellary	63.97	60
Hospet	36.03	40

[1] Patients accessing PPTCT and TB services need not necessarily be high-risk.

[2] TB is more prevalent among individuals with low socio-economic status who access public health facilities (Spinaci et al 2001, Gandy 2003).

[3] National AIDS Control Programme, Phase III (NACP-III), Chapter 5, 2007.

[4] Only 14 interviews could be conducted at two data collection points set-up at STD clinics of Bellary and Hospet.

Findings of the Survey

Around 60 percent of the total respondents (245 at the RNTCP centres and 272 at the PPTCT centre) were from Bellary and the rest from Hospet. Roughly two-thirds (64.1 percent) of those visiting RNTCP centres were male respondents.

While the average age of the PPTCT respondents was 22.2 years, that of male and female clients of RNTCP was 42.4 years and 36.6 years respectively. Nearly half of the male (48.4 percent) and three-fourth of the female (72.2 percent) respondents of RNTCP were found to be illiterate, as compared to 41.2 percent of PPTCT clients. Among the literate, the average years of education for males and females were 6.6 years and 7.7 years respectively for RNTCP respondents, and 8.3 years for PPTCT respondents.

The proportion of working females was low for both the groups – 43.2 percent in the case of RNTCP respondents and 35.9 percent in the case of PPTCT respondents. Interestingly, a higher proportion of females were working than were literate. Almost all respondents reported that their husbands were currently working. Among RNTCP respondents, 69.4 per cent of the males reported they were working (Table 12.2).

Table 12.2: Occupation details of the respondents (in %)

Particulars	RNTCP		PPTCT	
	Male	Female	Female	Husband
Labourers	56.9	76.3	63.0	42.6
Drivers	11.9	0.0	0.0	12.8
Tailors	0.9	5.3	20.7	3.0
Agriculture (own)	8.3	0.0	4.3	3.4
Others	22.0	18.4	16.3	38.1
Proportion of working respondents	69.4	43.2	35.3	99.6

Information was collected on work-related migration of the respondents. Nearly 40 percent of the male RNTCP respondents and half of the PPTCT respondents' husbands migrate for work, with an average stay of around two months in a year (Table 12.3). More than 10 percent were found to stay away for between two and six months in a year. These figures indicate substantial mobility which is now confirmed globally to be a key parameter in the HIV and AIDS epidemic. In fact, NACP-III has identified migrants as a key bridge population at higher risk of contracting the virus because of their close association with high-risk populations. Short duration migrants play a critical role in the epidemic because of their frequent movement between source and destination areas.

The RNTCP respondents were found to be travelling more – an average of 33 km to access services as compared to an average of 10 km in the case of PPTCT

Table 12.3: Mobility patterns among respondents		
Particulars	**RNTCP – Male**	**PPTCT – Husband**
One month or less	19.27	24.26
One to two months	7.34	8.46
Two to six months	10.09	10.29
More than six months	2.75	3.68
Average stay away from home (in days per annum)	63	59.4
Never	60.55	53.31

respondents. However, as expected, a majority of the respondents (53 percent for RNTCP and 73 percent for PPTCT) were residing in the vicinity of 10 km or less, confirming that access to services is good, especially for PPTCT clients.

Alcohol abuse and vulnerability to HIV are seen to be closely linked. A recent research found that while people who abuse alcohol are more likely to engage in risky behaviours such as unprotected sex (Fordham 1995), alcohol consumption may increase susceptibility to infection upon exposure to HIV[5]. A World Health Organization study identified "a number of patterns of interaction between alcohol use and sexual risk, with some of these patterns manifesting a specific individual behavioural scheme, some a cultural scheme and some a cross-cultural scheme[6]." A team of researchers at Penn Sate used an animal model to reveal, for the first time, a physiological basis for the effect of alcohol on male sexual behaviour, including increased sexual arousal and decreased sexual inhibition[7]. Yet another study highlights that, "an association has been shown between alcohol use and high-risk sexual behaviour. One of the important variables that might mediate risky sexual behaviour among alcohol users is the sensation-seeking dimension of personality[8]." Another study pointed out that "only 5 percent reported consistent/often condom use for sex after drink[9]".

Data from various sources[10] indicate that alcohol consumption in Karnataka is on the rise. Bellary ranked fifth, sixth and third highest district in the state in terms of consumption of beer, Indian-made liquor (IML) and arrack respectively

[5] http://news.bbc.co.uk/2/hi/health/2846471.stm.

[6] Alcohol Use and Sexual Risk Behaviour: A Cross-Cultural Study in Eight Countries, World Health Organization, 2005.

[7] For more details, see Public release date, 2-Jan-2008, Penn State.

[8] High-risk sexual behaviour and sensation seeking among heavy alcohol user, P.S. Chandra et al, Departments of Psychiatry & Health Education, National Institute of Mental Health & Neurosciences, (NIMHANS), Bangalore, India, January 23, 2003.

[9] Sex Behaviours and Drinking habits in STD Clinic Attendees at Government General Hospital Chennai, National Institute of Epidemiology (NIE), 2005..

[10] The data was collected from three sources: Karnataka State Beverages Corporation Limited (KSBCL), Office of the Excise Commissioner in Karnataka, Bangalore and Excise Commissioner in Bellary.

in 2006-07. While the consumption of IML in Bellary increased by 53 percent during 2004-05 and 2006-07, beer and arrack consumption grew by around 40 percent each. Bellary is the third highest district in terms of per capita[11] arrack consumption.[12] Given high alcohol consumption in Bellary, information on the use of alcohol was also sought during the primary survey.

Table 12.4: Pattern of alcohol consumption among men

Particulars	RNTCP-Male	PPTCT-Husband
Rarely (less than a month)	5.77	16.91
Occasionally (once a week)	8.97	13.6
Frequently (more than once a week)	8.97	5.15
Daily	19.87	11.4
Never	56.41	52.94

Data on RNTCP and PPTCT respondents in Table 12.4 indicates that while, on an average, more than half of the male RNTCP respondents and PPTCT respondents' husbands reported no consumption of alcohol, around 20 percent of the male RNTCP respondents and 11 percent husbands of PPTCT respondents were reported to be consuming alcohol daily. It is to be expected that self-admission of alcoholism may be lower than the actual incidence.

In the context of Bellary, alcohol use was mentioned as a problem during many focus group discussions and expert group meetings, and should be kept in mind as an additional factor that might result in high-risk behaviour leading to increased vulnerability to HIV, especially for women.

More than two-thirds of the respondents were found to be aware of HIV and AIDS. The proportion of male RNTCP respondents who had heard of HIV was 74 percent while the corresponding proportion for female RNTCP respondents and PPTCT respondents were 69 percent and 74 percent respectively. More

[11] Per capita consumption is obtained by dividing the total consumption of alcohol in litres to the population in the age group 15-59 years as per Census 2001.

[12] The Karnataka government had banned the manufacture and sale of arrack from 1 July 2007. However, there are contradictory reports about its success in curbing arrack consumption. (See www.thehindu.com/2007/08/07/stories/2007080776400600.htm & www.hindu.com/2007/07/22/stories/2007072255040600.htm).

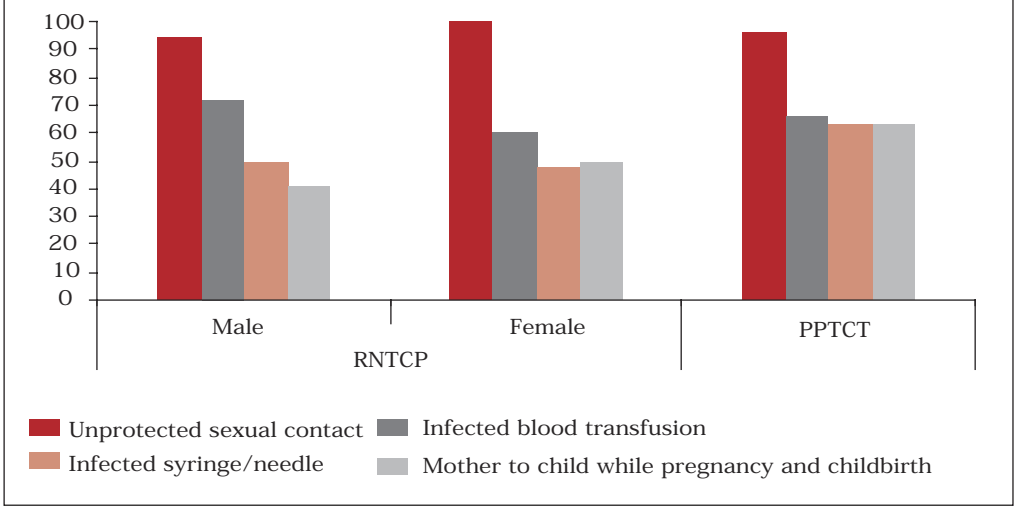
than three-fourths of PPTC and RNTCP respondents who had never heard of HIV were married respondents. According to NFHS-3, knowledge of AIDS is higher among never married women (76 percent) than currently married women (57 percent)[13].

While knowledge of 'unprotected sexual contact' as a route of transmission was found to be very high (almost 100 percent in all categories) the knowledge of mother to child transmission was low in all the three categories (Figure 12.1). Nearly three-fourths of RNTCP respondents who did not know about mother to child transmission were married. The NFHS-3 reports that only 18 percent of women with no education have heard of each of the three preventive methods, while over 80 percent of women at the highest level of education have heard of each preventive method[14].

Nearly 60 percent of women visiting PPTCT centres were tested for HIV, as compared to 36 percent females and about half of the males of the RNTCP sample. It is not clear whether these numbers indicate high or low response to perception about risk behaviour, as they have not been compared to other samples from other districts. Since these numbers are reported from the general population, they are significant as they indicate that the infections are now not limited to high-risk populations alone but have spread to the general population groups also. The peak age for HIV prevalence among women tended to be around 25 years, which is between 10 and 15 years lower than the peak age for men[15].

The presence of symptoms of STI is another important indicator of vulnerability to HIV. Only one-fourth of the total sample reported knowledge about how STI

Figure 12.1: Awareness of HIV transmission



[13] National Family Health Survey (NFHS-3) 2005-06, IIPS and Macro International, Volume I, page 317, 2007.
[14] NFHS-3, chapter 11, page 321.
[15] NACP-III, chapter 5.

Table 12.5: Self-reported knowledge of the source of STI (percentage of respondents)		
Source of infection	**RNTCP**	**PPTCT**
Do not know	58.6	51.1
High temperature/Hot weather	27.6	19.1
Sexual contact	10.3	21.3
Others	3.4	8.5

spreads, which is abysmally low. The self-reported knowledge of the source of infection is disquieting (Table 12.5), with more than half of the respondents admitting lack of knowledge and only a small proportion being able to identify sexual contact as a cause.

As many as 25 percent of the respondents did not seek any treatment for STIs, in contrast to other illnesses (Table 12.6). The lack of awareness about STI and the declining number of STI patients in most government facilities raise concerns about the reach and, subsequently, the efficacy of targeted interventions. The lack of awareness could be due to lack of comprehensiveness in prevention activities and messages, low absorption of such messages by the target population or inadequate reach of the interventions. The decline in number of people seeking treatment can be attributed to the poor quality of services provided, and increasing recourse to private providers. About one-fourth of the patients sought treatment from private providers for STIs, and the number was even higher for non-STI illnesses in the case of the RNTCP respondents, indicating a significant presence of private providers in the district. "With two-three STD patients per day being treated at these centres (Government STD clinics), the utilisation has been sub-optimal, making it clear that most of the vulnerable population access STD care from private service providers[16]." Finally, while there is no data to confirm this, the decline in number of patients could also be because the newer migrants are less aware of or less familiar with treatment providers in Bellary.

While there is evidence from Karnataka (Pradhan et al 2006) that with increasing incomes, individuals turn to private providers, it is also widely acknowledged that in India a range of private providers of uneven quality cater to a large majority of the population, especially those from the lower economic strata. The various discussions held with providers did indicate a tendency on the part of the rich to go out of Bellary for their treatment. Thus, Bellary's uneven income distribution may be having an impact on demand for private health care at both ends of the income distribution.

Government hospitals were the major sources of treatment, and hence the data was collected from clients of government facilities (Table 12.6).

[16] NACP-III, Chapter 7, page 82.

Table 12.6: Sources of treatment: Comparison of STI and other illnesses (in %)				
Source	Treatment for STI		Treatment for other illnesses	
	RNTCP	PPTCT	RNTCP	PPTCT
Government hospital	38.9	40.4	52.8	73.9
Private practitioner	25.9	26.6	36.7	17.4
RMP/Non-qualified doctor	1.9	3.2	5.5	4.4
NGO run hospital	3.7	2.1	1.0	4.4
No treatment	24.1	26.6	3.0	0.0
Other (specify)	5.6	1.1	1.0	0.0

The surveys did not explicitly ask about visits to sex workers and condom use. However, this is important as clients of sex workers are now seen as the most significant bridge population and recent research indicates that the clients form the most HIV cases in Asia (McLeod 2007). Condom use in sex work is also related to the type of clients they have. Another study in Bellary indicated that there is high level of condom use when sex workers are not in a monogamous relationship and have only commercial partners. About one-third of sex workers reportedly have only commercial partners. However, in a majority of cases, sex workers have at least one non-commercial long-term relationship, and condom use is low in such situations (Gurav et al 2007). Devadasis traditionally have had long term partners or `patrons' and this puts them at further risk.

Overall, the results from the specially designed survey indicate a confluence of adverse parameters among the respondents that together make such groups highly vulnerable to HIV. The survey results corroborated the discussions in earlier chapters on the existing and emerging vulnerabilities in Bellary including, but not limited to, low literacy levels, low awareness, low condom use; significant size of the informal sector, significant mobile population etc. It is thus essential to go beyond mere mapping of high-risk populations and to understand their social and economic background, to be able to put the interventions within a context, instead of following a vertical project-specific approach. The NACP-III strategy document points out that "socio-economic determinants that make a person vulnerable also increase the risk of exposure to HIV. NACP-III will work with other agencies involved in vulnerability reduction, such as women's groups, youth groups, trade unions etc. to integrate HIV prevention into their activities[17]." Better convergence between different programmes and activities will also help develop a more comprehensive response.

[17] NACP-III Chapter 1, page 7.

Status of Awareness about RTI/STI and HIV

Prevention of HIV among the general population is one of the major interventions under India's National AIDS Control Programme (NACP). In addition, the Reproductive and Child Health (RCH) programme aims at promoting healthy sexual behaviour among married couples and educating them about RTIs and STIs, including HIV. The status of awareness about HIV can be gleaned from population-based surveys like the NFHS, Rapid Household Surveys (RHS), and Behaviour Sentinel Surveillance (BSS). Of these, only the RHS provides district-specific information, since it is specifically a district-level household survey for women. The status of awareness in the general population in a specific district is not very different from that of the state, and this chapter presents a discussion about general awareness for Karnataka, followed by status of awareness among women in Bellary.

Women and HIV in Karnataka

NACO conducted the BSS for three kinds of population groups: general, bridge (people like clients of sex workers who carry the infection from the high-risk population to the general population) and high-risk population in 2001. It used the results of this baseline survey to plan its interventions. BSS 2001 for the general population indicated a significant improvement in awareness levels among adult male and female populations over earlier population-based surveys. The all-India average for urban population who had 'ever heard of HIV' was 89 percent, while the same for rural population was 72 percent. The corresponding figures for Karnataka were higher than the national average at 91 percent and 81 percent respectively. Table 13.1 indicates a relatively better situation in Karnataka

Table 13.1: Proportion of women who have heard of HIV and AIDS: A comparison

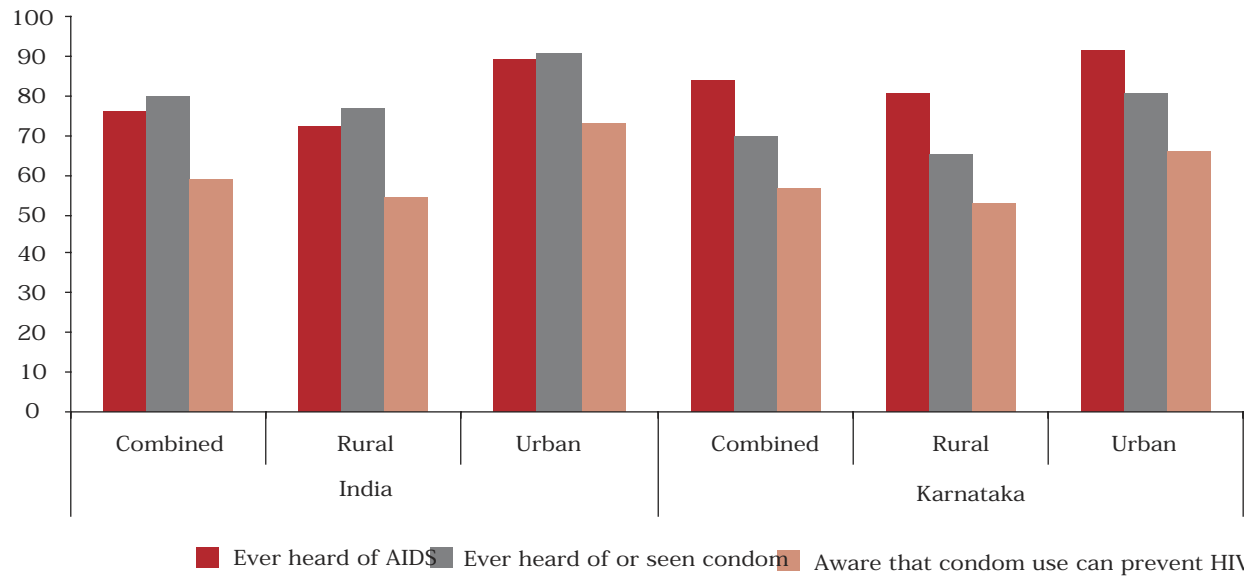
Surveys	India	Karnataka
NFHS 1998-1999	40	58
RCH 1998-1999	42	61
RCH 2004	54	69
BSS 2001	70	79
NFHS 2005-06	57	66

Source: Various NFHS, RCH-RHS and BSS reports

compared to the whole of India regarding knowledge of HIV and AIDS using all existing sources, including NFHS-2 (1998-1999) and RHS for RCH. Despite such high knowledge, Karnataka continues to be a high prevalence state. These statistics do not mention education levels, but indicate that whatever be the means of raising awareness, it may not be sufficient and sustainable to prevent infection.

The other important finding from BSS relates to awareness of the use of condoms as a prevention tool. Figure 13.1 shows that while the respondents had heard of or seen a condom, the knowledge that HIV can be prevented through consistent condom use was much less than awareness about AIDS.

Figure 13.1: Awareness of AIDS and condom as a prevention tool - A comparison from NACO BSS



Source: NACO 2001

This difference is sharper in Karnataka compared to India as a whole, indicating the possibility of limited penetration of prevention messages. It is natural that many of the respondents have heard of, or seen a condom, since it has been promoted under the family planning programme for years; however, the integration of the two biggest vertical programmes – RCH and NACP – does not seem to be working very well.

Women and HIV: Findings from NFHS-3

The preliminary results of NFHS-3 indicate that 43 percent of about 199,000 women surveyed in India had never heard of HIV, and 65 percent did not know that consistent use of condoms can reduce the chances of getting infected. The corresponding figures for rural women are 54 percent and 75 percent,

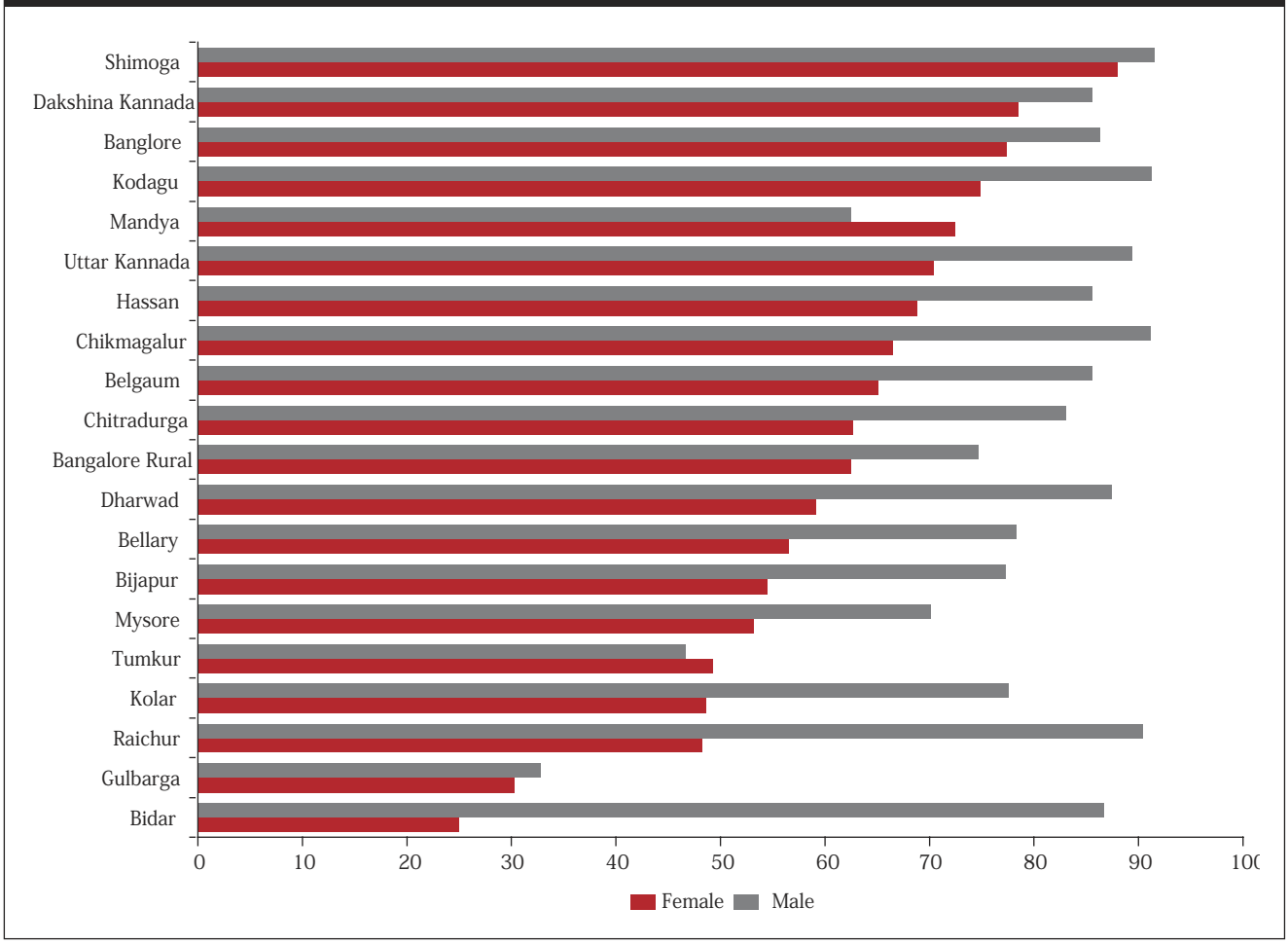
respectively. For Karnataka, the scenario is equally bleak. The proportion of women who had heard of HIV was 66 percent, but the proportion of women who had knowledge about prevention through condoms was a mere 33.5 percent.

It is important to look at the role education plays in knowledge and awareness of HIV and prevention. Knowledge generally improves with education. Education seems to play a more positive role in prevention in India as a whole as compared to Karnataka, where women from different education groups fared well in terms of knowledge of HIV but not in terms of knowledge about prevention through condoms. However, education alone is not enough in every setting, especially in the complex social, cultural and economic situation of Karnataka as a whole and Bellary in particular.

Women and HIV in Bellary

Figure 13.2, based on RCH-RHS round-I (1998-99) data, shows that 78 percent of males and 57 percent of females in Bellary had heard of AIDS, which was

Figure 13.2: Proportion of respondents ever heard of AIDS in the districts of Karnataka



Source: RCH-RHS 1998-99

better than some districts, but worse than others like Chikmaglur, Uttar Kannada, Kodagu and Bangalore.

The situation seems to have improved somewhat since then. The RCH-RHS round-II (2002-04) indicates that 66.3 percent of women in Bellary were aware of AIDS. However, since other districts have done even better, Bellary's rank, in terms of awareness of AIDS among women, which was thirteenth among 20 districts in 1998 fell to eighteenth among 27 districts in 2004.

The District Situation Assessment of Bellary – DSA, 2002 – is an important source of information on the status of awareness and vulnerabilities to HIV. A detailed DSA was conducted[1] to develop baseline estimates of the vulnerabilities and capacities of young women in the 13-25 years age group to protect themselves against STIs and HIV infection. The DSA covered the entire district, and a sample of seven villages (one in each taluk) and three urban wards (two in Bellary and one in Hospet) were included. Purposive sampling was done and data collected from both primary and secondary sources. The primary sources included groups of unmarried females (13-25 years), married females (13-25 years), elderly ladies (> 25 years), and male group (18–40 years). Secondary data was collected from various government institutions.

The findings from the DSA indicate that awareness of HIV among married women (39 percent) in Bellary is much less compared to their unmarried counterparts (56 percent). It also reveals that women above 25 years of age were either not aware or were partially aware of details of HIV. Other findings include low education among women, low availability of information on sex and sexuality, low awareness of protection methods and high prevalence of multiple partners and bigamy among males. Limited control of women over decision-making in personal issues, high prevalence of sexual abuse in the community, lack of adequate health services and poor treatment seeking behaviour make women highly vulnerable in the context of the HIV epidemic (Mahila Samakhya-Karnataka 2002).

[1] DSA was conducted under the CHARCA project and it formed the basis for district level HIV interventions.

Vulnerability to HIV and Socio-economic Impact

In 2001, the United Nations General Assembly Special Session (UNGASS) made a Declaration of Commitment on HIV and AIDS. This commitment set 2003 as the deadline for all countries to have in place "strategies, policies and programmes that identify and begin to address those factors that make individuals particularly vulnerable to HIV infection, including under-development, economic insecurity, poverty, lack of empowerment of women, lack of education, social exclusion, illiteracy, discrimination, lack of information and/or commodities for self-protection, and all types of sexual exploitation of women, girls and boys, including for commercial reasons."

This report contends that Bellary has seen growing economic and social vulnerability among its population, making a large number of individuals susceptible to HIV. The major factors are:

- Growing economic vulnerability: the economic growth in Bellary has been accompanied by:
  - Increasing resort to informal and unorganised labour arrangements, leading to an increase in marginal workers and consequent rise in job insecurity.
  - Greater labour mobility, with the local economy being dependent on migrants.
  - Continued poverty.
  - Increasing economic inequality, making both the rich and the poor vulnerable to HIV.
- Continued social vulnerability
  - Low levels of education and high drop out rates.
  - Involvement of women from poor and backward classes in sex work, aided by the social sanction of the Devadasi system.
  - Significant participation of children in the workforce.
  - Adverse educational indicators for SC/ST populations.
  - Poor living conditions for SC/ST populations.
  - Discrimination against SC/ST population, especially women and children.
- Poor status of women and lack of empowerment
  - Low education and significant drop out rates among girl children.
  - Continued practice of overt and covert bigamy.
  - Low age of marriage.
  - Poor treatment seeking behaviour.

- Alcoholism and violence against women.
- Poor reproductive and sexual health
  - Low awareness and significant prevalence of STI, especially among women.
  - Low use of condoms.
- Poor status of children
  - Significant extent of child labour and exploitation.
  - Poor nutrition among children.

Socio-economic Impact

Though it was not possible to collect primary data to gauge the impact of HIV and AIDS in Bellary, there is enough evidence from the rest of the world, India as well as from Karnataka on the likely magnitude and distribution of the socio-economic impact. The most relevant report for Bellary is the UNDP-NCAER study (Pradhan et al 2006), which looked at the macro as well as micro level impact of the epidemic in six states, including Karnataka. HIV and non-HIV (control group) households were surveyed to enable comparison of their socio-economic characteristics, pattern of household expenditure, prevalence of morbidity and differences in enrolment and dropout rates of school-going children. In Karnataka, 401 HIV households (with at least one adult member living with HIV) were surveyed, of which 199 were rural and 202 urban households. The survey covered Bangalore (urban and rural), Belgaum, Bellary, Dharwad, Mysore and Dakshina Kannada districts.

Some of the key findings from the report are:

- While HIV households were spending much more than non-HIV households on health, they were spending a little less than non-HIV households on children's education.
- The percentage of HIV households below the poverty line was higher than non-HIV households.
- Liquidating assets, borrowing or drawing down savings were among the main sources of financing higher expenditure.
- The presence of an HIV-affected individual in a household seemed to affect both the enrolment and continuation of children in school.
- Both the rate of illness and number of hospitalisation cases have generally been much less for women than for men in HIV households.
- Recourse to private providers increased with higher income.
- Higher prevalence of HIV among the working population than among those who are not in the work force.

None of these findings are new or unique to Karnataka. Presumably, a similar set of factors is at work in Bellary as well, indicating the likelihood of significant socio-economic impact in the years to come, unless the course of the epidemic is reversed.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Response to the Epidemic

Bellary is a district with high prevalence of HIV, and as a consequence, the KSAPS and civil society organisations have been working to prevent the spread of the epidemic and increase care and support activities there.

Since 1999, there are two sentinel surveillance sites for ANC and STD clients in the district. The Voluntary Counselling and Testing Centre (VCTC) was also started at the Vijayanagar Institute of Medical Sciences (VIMS) in Bellary in 1999. In 2002, a PPTCT centre was also established. Both these centres, along with a STD clinic, were major public sources of HIV and related interventions till 2004.

In 2004, a joint UN effort – CHARCA – was initiated to reduce the HIV-related vulnerability among young women in India. This three-year intervention programme (2004-2007) was carried out in six districts across the country with the objective of improving knowledge, attitude, behaviour and practices with respect to women's vulnerability to STI and HIV. Bellary was selected as the first pilot district where district-level planning was initiated[1]. The main focus of this programme was to increase district-level ownership, participation and implementation to improve the situation of young women. As a result, great emphasis was laid on undertaking District Situational Analysis (DSAs) that would ultimately lead to District Strategic Plans (DSPs)[2]. Since then, a series of awareness and capacity building interventions were carried out by a district level agency – the Bellary District AIDS Prevention Society (BDAPS) – with the help of two NGOs – MYRADA and Mahila Samkhya.

Bellary saw a rapid expansion of counselling and testing facilities in the beginning of the current decade. During 2003-05, three Integrated Counselling and Testing Centres (ICTC) were established in three taluks. A VCTC was also established at the TB Sanatoria, Bellary, in 2005-06, with state funds. That same year, seven additional ICTCs were established and another 10 were set up in 2006-07[3]. The ICTCs are operating at PHCs and Community Health Centres (CHCs) of various taluks and villages.

[1] CHARCA project activities were rolled out in the district in August 2004.

[2] The activities include: a) awareness building for young women and key interest groups who influence their lives, through village-level Jagruthi Shibira; b) outreach through Kishori Sanghas and Women's Sanghas and link workers placed in NGOs; c) formation of neighbourhood groups for community outreach; d) strengthening capacities relating to women's vulnerability to HIV and AIDS of existing collectives of women as well as adolescent girls; e) sensitisation and advocacy for the media, panchayat functionaries and other key stakeholders; f) capacity building of health and other service providers to provide women-friendly services and health camps to improve access of women to services; g) setting up village-level resource and information centres which function as support structures for young women; and h) formation of taluk-level networks of HIV positive people.

[3] This includes one ICTC at the Family Planning Association of India, Bellary branch.

There are five blood banks, including one at VIMS, which alone has blood component separation facilities. An anti-retroviral therapy (ART) treatment centre was started at VIMS in November 2005, which had 568 adult individuals and 37 children on therapy as on May 2007.

KSAPS has undertaken a series of information, education, communication (IEC) initiatives including distribution of posters, folders, stickers, buntings, handbills, rexine charts, flute boards, exhibition panels, hoardings, and flip books. Audiovisuals such as the screening of film spots in cinema halls and street plays have been organised since 2003. IEC activities were also conducted while observing World AIDS Day, Voluntary Blood Donation Day and International Women's Day. Family health awareness campaigns have also been conducted regularly since 2005. Arasina–Kumkuma (turmeric-vermilion) is a cultural practice popular in Bellary in which pregnant women are blessed by the community. MYRADA used this practice during the CHARCA project to promote prevention and testing of pregnant women by addressing them and village leaders on health issues, and linked them up with PPTCT services.

A number of NGOs have been involved in activities relating to prevention of HIV and AIDS, including Freedom Foundation, MYRADA and the Family Planning Association of India (FPAI). Freedom Foundation has been actively working with sex workers in Bellary, especially in Siruguppa taluk. MYRADA, as a partner of the Karnataka Health Promotion Trust (KHPT),[4] is intervening with high-risk groups like sex workers, men who have sex with men and transgender individuals. The strategy involves educating these population groups on HIV and STI, condom distribution, identifying STI cases and referring them to STI service providers. MYRADA also runs a programme-linked clinic and identifies referral doctors to ensure easy availability of STI services. To avoid stigma, referrals are also made for general health and not only for STI. FPAI, in addition to running a VCTC, is actively involved in HIV prevention among the general population.

Effectiveness of Interventions

Despite their limitations, it is important to gauge the effectiveness of the set of interventions that were carried out in Bellary by different organisations.

[4] Karnataka Health Promotion Trust is a partnership between the KSAPS and the University of Manitoba, Canada. KHPT implements the NACP in Karnataka.

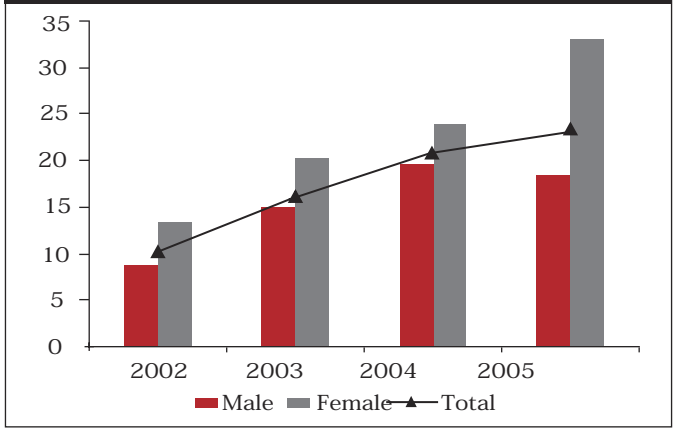
The awareness of HIV can be gauged from the amount of HIV testing being carried out at the VCTCs. The number of persons tested for HIV in Bellary has been steadily increasing since 2002. The proportion of women opting for HIV tests has also been on the rise – from a mere 434 women in 2002 to 1,082 (almost one third of total testing) in 2005 (Figure 15.1). From the perspective of the voluntary aspect of testing, the proportion of direct walk-in clients for voluntary testing has gone up from 10 percent in 2002 to 23 percent in 2005 (Figure 15.2). While the absolute number of women testing for HIV has been less as compared to the men, the proportion of women testing voluntarily has always been higher. The proportion of women who have voluntarily walked in at the VCTC has increased from 13 percent in 2002 to 33 percent in 2005, mostly due to a sharp increase of almost 10 percent between 2004 and 2005. The increase in walk-in male clients was less spectacular, and in fact there was a slight decline in 2005.

The proportion testing positive can be interpreted in many different ways - a rising HIV phenomenon, an increase in the number of high-risk people getting tested, or an increase in voluntary testing, resulting from the various interventions. Overall there is a decline in the number of people testing positive (Figure 15.3). While more 'at-risk' positive people are turning up voluntarily (which is visible from the rising trend in the proportion testing positive among walk-in clients), it is also likely that more negative people are turning up for HIV testing as well, since the overall percentage of HIV positive cases is on the decline.

The PPTCT services have also been working effectively in Bellary since 2002, when the first centre was established at VIMS. Three more centres were established at Hospet, Sandur and Kudligi taluks in 2004 and five others were set up at different taluks in 2006, taking the tally to nine. VIMS is a high-volume PPTCT centre and had catered to more than 17,000 women by the end of 2006, with an average of over 350 women every month. Out of the sample of women who were tested

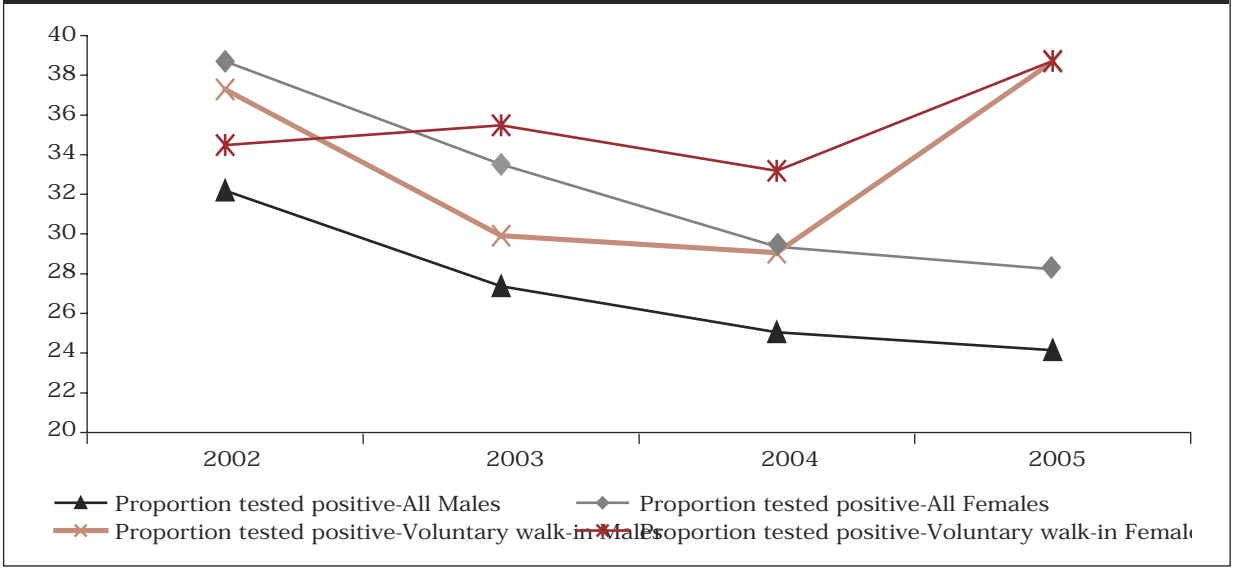
Figure 15.1: HIV testing at VCTC in Bellary

Figure 15.2: Proportion of voluntary walk-in individuals at VCTC in Bellary



Source: NACO Centralised Management Information System

Figure 15.3: Proportion testing HIV positive at VCTCs in Bellary: A comparison over time



Source: NACO Centralised Management Information System

for HIV at VIMS, 1.62 percent were found HIV positive till 2005, with the figure declining to 1.31 percent in 2006 (Table 15.1). The peripheral PPTCT centres at Kudligi and Sandur not only see an increasing number of women attendees, but the proportion of attendees testing positive is also on the rise, indicating the possibility that the virus is now present among the general population in rural areas as well.

Another important intervention in Bellary is the diagnosis and treatment of STIs. A series of meetings with public as well as private providers revealed that there is a steady decline in the rate of STIs in Bellary. Figure 15.4 shows the client load of STI clinics in terms of new clients – while there has been a steady decline in male STD clients, there has been a sharp increase in STD among female clients. The discussions with private providers also indicated the possibility of richer patients going out of Bellary for treatment for privacy reasons.

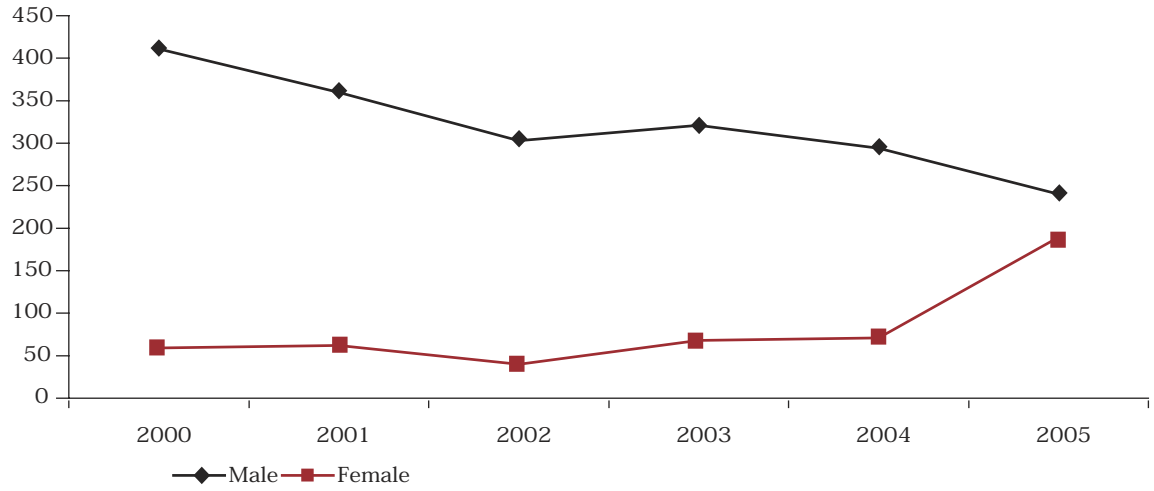
Table 15.1: HIV testing at PPTCT centres in Bellary

PPTCT centre	Year of establishment	Up to 2005			During 2006		
		Total tested	Total positive	Proportion positive	Total tested	Total positive	Proportion positive
MCH VIMS, Bellary	2002	12,685	206	1.62	4,570	60	1.31
100 Bedded Hospital, Hospet	2004	1,256	23	1.83	385	6	1.56
General Hospital, Kudligi	2004	40	1	2.50	238	6	2.52
Community Health Centre, Sandur	2004	801	5	0.62	644	14	2.17

Source: District AIDS Officer, Bellary

During the Bellary DSA for the CHARCA project in 2002, spot prevalence of STI/RTI was found to be 24 percent, which was higher than the 18 percent average state prevalence. In fact, there were significant differences between male and female rates – while 29 percent of rural women reported suffering from an RTI/STI, only 19 percent of men reported the same. Besides, 24 percent of unmarried girls reported STIs/RTIs against 27 percent in the case of their married counterparts. The awareness levels on HIV and AIDS were also consistently lower than 50 percent across all cross-sections of the society, while awareness of STIs was consistently around one-third of the population. Women were again much less aware of these issues compared to men.[5] However, it is

Figure 15.4: New patients attending the STD Clinic at VIMS, Bellary



not clear whether the huge volume of migrant workers or child labourers have also been experiencing reduced levels of STIs: the mm&P points to the 'sudden emergence' of private clinics for STIs around the mining areas of Hospet and Bellary, indicating a missing part of the picture on STI. The decline in overall STI rate should, therefore, be treated with caution.

The RNTCP has been functional in Bellary since 2001. The data collected from the district tuberculosis office verified through the various annual reports indicate that the overall rate of sputum positive cases is on the decline in the district. However, there are interesting differences between taluks. The proportion of clients who have been found positive has always been high in Sandur and Hospet taluks, indicating the health effects related to mining (Table 15.2). Bellary taluk has seen a rapid increase in testing during the 2001-2004 period, but unlike the rest of taluks, there has been a steady decrease in rate of sputum positive cases here, which is surprising. It is not clear whether the data on TB from RNTCP centres is sufficient for assessing the real situation of TB in the district.

[5] http://www.youandaids.org/Charca/Resources/DSA%20Bellary.pdf.

Finally, the key findings from a comparison of the baseline and end line evaluation of CHARCA project – which involves both quantitative (baseline and end line surveys) and qualitative (listing of community based resources for women, key informants interviews, focus group discussion) techniques to measure the impact of these interventions – are presented below. In Bellary, while the baseline survey included 488 women respondents (13-24 years age group) and 256 men (15-29 years age group), the end line survey included 566 females and 317 males.

Table 15.2: Sputum examination under RNTCP in Bellary

Year	Total sputum examination for diagnosis					Proportion of sputum found positive				
	Bellary	Hadagalli	Hospet	Sandur	District Total	Bellary	Hadagalli	Hospet	Sandur	District Average
2001	3,519	2,008	2,961	1,726	10,214	11.2	10.1	15.2	14.5	12.7
2002	6,615	2,213	3,902	1,929	14,659	5.6	9.9	14.9	18.4	10.4
2003	6,845	3,696	3,456	2,366	16,363	5.9	7.7	11.7	16.3	9.1
2004	9,751	3,171	2,577	1,860	17,359	3.6	10.1	13.3	17.0	7.7
2005	9,473	2,867	2,620	2,054	17,014	4.7	10.7	13.5	18.4	8.7

Source: District Tuberculosis Officer, Bellary

The interventions seem to have made a significant difference in the samples. Table 15.3 presents the performance of some of the selected indicators in the district.

More women in Bellary are now aware of at least one location of getting male condoms (66.6 percent in 2007 compared to 11.5 percent in 2004). The proportion of women seeking treatment for menstrual problems has also increased, both in the government and private sector. The awareness on HIV and AIDS among young women increased from 76 percent to 90 percent between 2004 and 2007. Women's knowledge on infections increased from 24 percent in 2004 to 92 percent in 2007. A majority of young men also highlighted the fact that condom's are important in preventing HIV.

Table 15.3: Performance of various indicators of CHARCA interventions in Bellary (in %)

Proportion of young women	Baseline	Endline
Who were aware of at least one location of getting male condom	11.5	66.6
Who heard of HIV and AIDS	76.4	89.6
Knowing that consistent use of condom during each sexual intercourse can protect from HIV infections	24.4	92.0
Having at least one misconception of HIV and AIDS transmission	71.7	29.3
Reporting sexual violence in terms of forced penetrative sex	38.3	24.5
Who experienced any type of violence in the last 12 months	9.2	4.5

Source: IIPS (2007)

The increase in knowledge of RTI/STI and awareness about various preventive measures among the respondents seems to have improved significantly. Around half the female respondents (compared to less than 10 percent in the baseline survey) perceived that using a condom consistently in each sexual intercourse, having sex with only one partner and avoiding sex with sex workers can prevent STI. More women during the endline survey reported being aware about various preventive measures for HIV and AIDS. Also, a greater proportion of men and women are now aware of at least one location for HIV testing. However, there is a higher prevalence of HIV testing among young women than men. Around 33 percent of women compared to 6 percent of men reported ever being tested for HIV in the end line survey.

Respondents were also asked about the efficacy of CHARCA interventions and some of the findings are reported below:

- Overall, there was a clear perception among young men (42 percent) and women (46 percent) in the district that interventions of CHARCA have enhanced awareness of STI/HIV and AIDS among people in the project areas. Fifty-five percent of the women and 51 percent of men rated the efficacy of the interventions as moderate.
- Around 50 percent of the respondents perceived the programmes as enhancing women's empowerment, while around 40 percent believe it to be effective in reducing risk behaviours.
- Interventions were also effective in improving reproductive health services, motivating parents to encourage girls to take up higher education and in the overall development of women.

The district has also seen an increase in the utilisation of public health care facilities among women, especially for STIs, which was borne out by other data as well. Relatively fewer males are using the public health facilities for the treatment of STIs.

Overall, there is clear evidence that the interventions carried out by CHARCA[6] have made a significant difference to the levels of knowledge and awareness in the population they have reached. While quantitative data were not available, the information received from MYRADA[7] also indicated that their interventions have made a difference to the risk faced by, and lives of, sex workers.

[6] The CHARCA project worked with the general population, focussing on vulnerabilities of young women.
[7] MYRADA is an NGO implementing KHPT interventions with high risk populations.

These findings are more intriguing in light of the continuing high prevalence of HIV in the district, and indicate that either the interventions have reached only a small proportion of the vulnerable as well as at risk population, or some of the data does not really reflect the true status of risk behaviour and knowledge, or a mix of both.

This research could not find significant evidence of interventions with groups like Devadasis, workers in the illegal mines including child labourers, miners and middle-class men visiting sex workers, in a focused and sustained manner. It is equally important to target these groups in order to prevent the spread of the epidemic in the district. Thus, while MYRADA, the CHARCA project as well as other agencies are doing very good work, their interventions may have made a difference to only a part of the total population.

The most important variable indicating the efficacy of these interventions is HIV prevalence, which, after decreasing for a while, has again shown an increase among groups like ANC attendees and STD patients. This is worrying and brings to the fore the need to evaluate such interventions for outcome – rather than process – indicators.

In sum, interventions that are dependent only on a series of short-term programmes may be neither sustainable nor cost-effective, if they are not integrated with on-going development programmes and if the norms, cultural practices and socio-economic vulnerabilities remain unchanged.

Conclusions and Recommendations

Bellary continues to be a high-prevalence district in Karnataka and India. There was an increase in prevalence among key groups in 2006. This caused serious concern due to its potential socio-economic impact on various sectors in the district.

The analysis of the HIV and AIDS situation in Bellary using the human development perspective indicates that the nature and type of economic growth and social development has a strong two-way relationship with the epidemic.

The report examined the following issues:

- Magnitude and type of economic development, focussing on employment, inequality and poverty, apart from overall development.
- Literacy and education.
- Health and risk factors, including, awareness, STI, condom use and treatment-seeking behaviour.
- Basic amenities, including health infrastructure.
- Status of backward classes.
- Status of women and extent of empowerment.
- Governance.

The main conclusion of the research was that the economic development in Bellary has been inappropriate and inequitable, human development has been low and HIV prevention programmes inadequate. These factors, in an environment of weak governance, are likely to have affected the course of the HIV and AIDS epidemic adversely.

The following statements sum up the main findings of the report:

- **The pattern of growth has not been dependent on rapid human development, nor has it enhanced human development.**

There has been a sudden and strong upsurge in economic growth in Bellary, fuelled mainly by the unprecedented growth in the mining industry since 1999. Registered manufacturing, especially textiles, has also contributed to growth, but to a much lesser extent. However, the pattern of the economic growth has been that of a typical natural-resource rich region, where the raw materials are mostly exported and not processed locally, resulting in slow growth in manufacturing sectors.

- **The pattern of economic growth has resulted in the growth of the unorganised and informal sector, short-term income gains with less job security, increased mobility and migration of labour.**

Growth of employment has been slow, and most of the employment generated has been in the informal/unorganised sector through the mining industry or related sectors like transportation and construction. Drought and lack of irrigation facilities has resulted in slower growth in agriculture and, consequently, employment in the sector. Lack of other job avenues has triggered a tendency to migrate within and outside the district. The mining sector has attracted a large number of migrants, who have come in search of jobs and better wages. Almost half the mining industry in Bellary is illegal and this makes for insecure employment, resulting in higher mobility, use of migrant workers and the employment of a large number of children and women, with serious implications about their welfare. The problem gets compounded when migration is under exploitative conditions.

- **There has been an increase in economic inequality and continued poverty.**

The distribution of substantial economic growth in the district has been skewed. As a result, employment growth has been low; poverty has remained high; a large pool of politically powerful rich class has emerged and inequality has increased.

- **Backward classes continue to face economic and social exclusion.**

The SC/ST/OBC population, who form a significant share of the population, have relatively poor social and economic parameters. Their education levels are low as is their access to basic amenities. They also face socio-economic discrimination.

- **Poor status of women, who continue to face low empowerment.**

Bellary has a patriarchal society, with men generally setting the terms of negotiations. Literacy and education indicators are worse for women of the lower castes. Women, including girl children, continue to face exploitation. The practice of bigamy continues, in different forms.

- **There is a significant presence of sex work, fuelled by cultural practices, poverty and social exclusion of women and backward classes.**

The traditional practice of Devadasis continues even today, in different forms. The Devadasis are almost always from the backward castes. The earlier practice of a single relationship has been replaced by multiple partners. Many Devadasis are into sex work and many have relationships with men from upper classes.

- **Welfare of children continues to be poor.**

There is significant extent of child labour. School drop out rates are high, as are malnutrition levels. Indicators for SC/ST children are worse than those for other children. Children also face sexual exploitation.

- **There is a significant generation of vulnerabilities conducive to the rapid spread of HIV.**

The factors conducive to high risk behaviour include: significant population of sex workers; presence of mobile populations in the form of migrants and workers who stay away from home like truckers; sudden increase in the pool of rich individuals with high disposable incomes; significant alcohol consumption; low condom use; and poor knowledge and high incidence of STI and low status of women.

- **Paucity of sustainable and effective intervention programmes.**

There are a significant number of prevention programmes, but with only partial success for various reasons: a) HIV interventions with groups like Devadasis, migrants, transport workers, miners, high-income individuals and children are inadequate and of short duration. Given the low education levels among the target population, such interventions do not necessarily lead to quick absorption of knowledge and behaviour change; b) HIV prevalence is high among high-risk groups due to continued low condom use and knowledge of STI, despite high knowledge of HIV and AIDS; c) low absorption capacity of population, inadequate governance, lack of mainstreaming of HIV and AIDS policies with other social, economic and welfare policies; and d) short-term programmes funded from outside, raising doubts over sustainability.

The analysis leads to some key conclusions. First, the interventions would have been more effective if the socio-economic environment had facilitated a more rapid absorption of prevention messages, which has not happened. The high prevalence among key groups, as well as the recent rise in prevalence in some other groups, indicates that interventions may have had only short-term impact and that the increase in knowledge and awareness has not translated into significant behaviour change. This situation can be attributed mostly to the adverse human development situation in the district, which existed even before the mining boom, but worsened due to the recent pattern of economic development.

Further, there has been a disconnect between governance on the one hand and policies around the epidemic on the other, which has severely limited the efficacy of the interventions. While such interventions are important for behaviour change, they are not sustainable unless mainstreamed and backed by social, economic and welfare policies, accompanied by good governance, that change the very environment in which these individuals live. Ultimately, the entire development paradigm needs to be altered in Bellary for lasting improvement in human development.

Recommendations

The following recommendations, if implemented concurrently, are likely to bring about long-term improvements in the situation:

1. **Recognise the centrality of human development:** The political leadership must acknowledge and act on the key constraints that prevent Bellary from moving from a low human development growth path to a higher one. A range of issues need to be addressed for this to happen.

Economic growth

- Encourage the setting up of industries in Bellary that use iron ore, like steel, so that the district can benefit from its natural resources in a more sustainable way than merely exporting it. Availability of proper infrastructure would be necessary for this and either the government or the major mining units can do this through public-private partnerships. Some examples worth emulating are the maintenance of roads by some major mining companies in Bellary and Goa and the railway lines from Haridaspur to Paradip port that are partly financed by mining companies in Orissa (Planning Commission 2006). The presence of more industries in the district will bring about backward and forward linkages and generate more employment of superior quality, which, in turn, would help distribute the wealth more equitably.
- Encourage industries that not only require higher levels of education and skills but are also able to build up such human capital. This would happen to a large extent if the previous recommendation is implemented.
- Plan for education, training and skill development programmes that will improve human capital formation, so that there can be adequate supply of such workforce as and when there is demand.

Migrants and mobile population

Improve the well-being of the unskilled migrants and mobile populations, especially those employed in illegal mines, who form the largest section of Bellary's labour force. Attention must be paid to education, health and other basic necessities, on the one hand, and prevention messages on HIV, STD and other health issues on the other.

Women

Pay more attention to issues relating to women (including sex workers), especially those from backward classes, in terms of prevention messages, income generating activities and education.

Elimination of poverty and improving basic amenities

Make poverty elimination a key approach to empower individuals. This would include health, education, as well as provision of basic amenities like shelter and sanitation. The priority groups would be the backward classes and other marginalised populations.

2. **Focus on and improve factors that result in good governance:** Steps must be taken to enforce and effectively implement existing laws to curb illegal mining, prevent child labour, abolish the Devadasi system and rehabilitate them as well as to improve basic amenities and key infrastructure like roads, health infrastructure and systems. Improved governance is necessary to bring about sustained improvements in the HIV and AIDS epidemic in the district.

3. **Quality of response:**

Reach the un-reached population

Evaluate current development initiatives from the perspective of the un-reached and uncovered populations. This will involve identifying and mapping the vulnerable population groups that receive little or no initiatives for HIV, STD or other health issues. These include workers in the illegal mining industry, those engaged in the transport sector, middle class and rich men, sex workers and Devadasis who reside mostly in rural areas and belong to lower castes, other women and children. Special emphasis must be placed on the SC/STs who are the most deprived sections and form a significant proportion of the population.

Mainstreaming

Integrate responses in a wide range of policies being implemented to improve overall welfare in order to reduce vulnerabilities and the socio-economic impact of the epidemic. This cost effective approach would also require revisiting the existing HIV and AIDS interventions to make them more comprehensive rather than vertical. Every effort must be made to include the different sectors and departments that are directly and indirectly concerned with the welfare of the vulnerable, marginalised and hard-to-reach groups. NACP-III presents an excellent

opportunity by way of recommending district-centric planning. This would go a long way in making the HIV and AIDS programmes sustainable and not dependent on short-term funding and programmes, and enable mainstreaming of responses subsequently.

While there are some encouraging signs of a slowing down of the spread of HIV, it remains to be seen whether such a trend is long lasting. For a more rapid change to the epidemic, many issues need to be dealt with simultaneously. The local government[1] has shown its dedication to ensure greater HIV prevention. Some of the recommendations of this report should be seriously considered by the administration and other bodies engaged in combating HIV and AIDS in the district. Ultimately, improving human development will be the most cost-effective way of combating the HIV and AIDS situation in Bellary.

[1] http://www.hinduonnet.com/2007/07/28/stories/2007072852370300.htm, accessed 4 October 2007.

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In India, the United Nations Development Programme (UNDP) has been actively involved in supporting the national development priorities for the last five decades. UNDP supports the government at all levels to respond to the needs of the HIV epidemic by increasing access to services and information on HIV, and developing new alliances beyond the health sector. UNDP also supports efforts by civil society and the private sector to reduce stigma and discrimination against people living with HIV.



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